

DETAIL OF SPECIES CONSERVED

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Forest Research, Uttarakhand

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Dendrobium fimbriatum

INTRODUCTION

Our lives depend on plants and without them, the ecosystem would cease to function. Our survival and survival of all species is tied to plants. The Research Wing of Uttarakhand Forest department strives to check the rate of plant diversity loss, while having a positive vision to have a sustainable future where plant species are able to thrive and be maintained (including preservation of their communities and habitats, plants' gene pool and ecological associations), and, which in turn improves diversity of plant species and supports the livelihoods and well being of humankind.

MISSION

Our mission is to discover and share knowledge about plants and their environment in order to preserve and enrich life. Plant diversity, the world's greatest renewable natural resource, is being lost at an alarming rate, and we must act with the greatest urgency to document and conserve it before it is too late. The Research Wing of Uttarakhand Forest Department has recognized and accepted its responsibility to stem the loss of biodiversity and cultural diversity, actively conserve rare and endangered plants, apply adaptive management approaches to natural area conservation, preserve regional diversity and be an effective leader, mentor, and practitioner of environmental protection at home and throughout the state

GOALS

The core of our conservation programme, for the State of Uttarkhand, is five goals, expressed as a total of 15 targets. The five objectives and their 15 targets for 2021 are

Objective I: Plant diversity is well understood, documented and recognized

Target 1: An online flora of all known plants.

Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action.

Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared.

Objective II: Plant diversity is urgently and effectively conserved

Target 4: A reasonable portion of each ecological region or vegetation type secured through effective management and/or restoration.

Target 5: An appropriate part of the most important areas for plant diversity of each ecological region, is protected with effective management in place for conserving plants and their genetic diversity.

Target 6: An appropriate part of known threatened plant species conserved in situ.

Target 7: A significant part of threatened plant species grow in ex situ collections, preferably near areas of origin, and a portion of it is available for recovery and restoration programmes.

Target 8: Genetic diversity of wild relatives of crops and other socio economically valuable plant species is conserved, while associated indigenous and local knowledge is respected, preserved and maintained.

Target 9: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded.

Objective III: Plant diversity is used in a sustainable and equitable manner

Target 10: No species of wild flora endangered by illegal trade.

Target 11: All wild harvested plant based products are sourced sustainably.

Target 12: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care.

Objective IV: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on earth is promoted

Target 13: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.

Objective V: To develop the capacities and public engagement necessary to implement the strategy.

Target 14: The number of trained people working with appropriate facilities sufficient according to needs of State, to achieve the targets of this Strategy.

Target 15: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy.

PLANT BLINDNESS

This term was coined in 1998 by Elisabeth Schussler and James Wandersee, a pair of US botanists and biology educators. They described it as “the inability to see or notice the plants in one’s own environment”.

Plant blindness, results in an under appreciation of plants – and in a **limited interest in plant conservation**. Plant conservation not only matters for environmental health but also, for human health, in the long run.

Plant research is critical to many **scientific breakthroughs**, from hardier food crops to more effective medicines. **More than 28,000 plant species** are used medicinally, including plant derived anti cancer drugs and blood thinners.

Experimenting on plants also offers an ethical advantage over some forms of animal testing: versatile techniques in areas like genome editing can be refined using plants, which are easy and inexpensive to breed and control. For instance, the genome sequencing of Arabidopsis, a flowering plant important in biology research, was a landmark not only in plant genetics, but **in genome sequencing in general**.

In human societies, there is also a constant reinforcement of the idea that animals are fundamentally more interesting and visible than plants. We name animals and assign them human characteristics. We often use animals as sport team mascots and we’re attuned to individual variation among animals: the personality of a dog, say, or the unique colour pattern of a butterfly.

Even within animal conservation, certain charismatic animals (particularly large mammals with **forward facing eyes**) receive the lion’s share of attention. Indeed, Williams’ research has shown that people are more supportive of conservation efforts for species **with human like characteristics**.

Increased urbanisation and time spent with devices means that Plant blindness is on the rise. As Schussler has explained, “**humans can only recognise (visually) what they already know**”.

The challenge is magnified for plants. For example, in 2011 plants made up 57% of the federal endangered species list in the US, but they received **less than 4%** of federal endangered species funding.

One key to reduce plant blindness is to increase the frequency and variety of ways we see plants. This should start early. It is important to get children involved with plants early, such as on nature walks.

Everyday interactions with plants is the best strategy.

Plants could also be emphasised more in art. Visuals and stories are important for getting students to connect with plants and to start asking questions about plants' experiences, such as how plants get old.

In India, the human plant link is more about religion and medicine. Plants are deeply intertwined in so many aspects of Indian cultural life.

From mythological perspectives, trees, leaves and flowers would all be significant, but from medicinal perspectives in Ayurveda, many other parts of the plants have value – leaves, roots, flowers and seeds.

BIODIVERSITY IN UTTARAKHAND

Uttarakhand being a part of Indian Himalayan Region (IHR) is home to vast variety and unique range of floral and faunal diversity of India as the State is uniquely endowed with diverse assemblage of natural ecosystems. According to scientific studies, the diversity under 1503 genera and 2133 families of flowering plants, including 93 endemic species is harboured in various vegetation types, ranging from sub tropical forests in upper Gangetic plain and Shiwaliks zone in the south to arctic alpine vegetation of trans Himalayan cold desert in the north in Uttarkhand.

SUMMARY OF SPECIES CONSERVED

Research wing of Uttarakhand Forest Department has conserved total 1576 species through in situ and ex situ conservation measures.

Out of these, 1507 species have been identified and 69 are yet to be identified.

A total of 11 species among these are critically endangered, 20 species are endangered; 11 species are vulnerable and 13 are near threatened as per IUCN categorization; while 1 species is endangered, 3 species are vulnerable, and 4 species are rare as per ENVIS; and 5 are critically endangered, 8 are endangered, 5 are vulnerable as per BSI; 13 species are threatened as per Uttarakhand Biodiversity Board list and 1 species is critically endangered, 2 species are endangered, 4 species are vulnerable and 3 species are rare as per Indian Biodiversity Portal. .

Further, out of 1576 total conserved species, 61 species are endemic, of which 35 are near endemic, 7 species are endemic to Uttarakhand, and 10 are endemic to Indian Himalayan Region and 9 species are endemic to India.

A total of 464 species conserved, have medicinal properties.



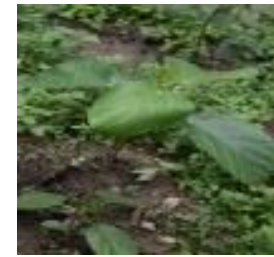
- **Tree species:** Total number of tree species conserved is 416 out of which 385 have been identified and 30 are yet to be identified. There are 107 Ficus species out of which 81 have been identified and 26 are yet to be identified; 8 Oak species; 22 Pine species; 8 Rhododendron species, and 271 other tree species. Out of these, 1 is critically endangered, 5 are endangered, 7 are vulnerable and 7 are near threatened species as per IUCN categorization; 2 species are threatened as per Uttarakhand Biodiversity Board; 3 are endangered as per BSI; 1 species is endangered, 1 is vulnerable, 3 are rare as per ENVIS and 1 is critically endangered, 1 is endangered and 1 is vulnerable as per Indian Biodiversity Portal. Out of the total tree species, 27 species are endemic/ near endemic to Uttarakhand, and 175 species have medicinal properties.
- **Herb species:** Total number of herb species conserved is 130. A total of 5 species are critically endangered, 3 species are endangered, 1 is Vulnerable as per IUCN categorization; 5 species are threatened as per Uttarakhand Biodiversity Board ; 5 species are critically endangered, , 2 are endangered as per BSI ; 2 are vulnerable, as per ENVIS and 1 is rare and 1 is vulnerable as per Indian Biodiversity Portal. Out of the total herb species conserved 9 species are endemic/near endemic to Uttarakhand and 7 are endemic to Indian Himalayan Region and 110 have medicinal properties. Out of total species, 48 are aromatic species.





- **Shrub species:** Total number of shrub species conserved is 115. A total of 3 species are endangered as per IUCN; 1 species is threatened as per Uttarakhand Biodiversity Board and 1 is vulnerable as per Indian Biodiversity Portal. Out of the total shrub species conserved, 12 species are endemic and 70 have medicinal properties. Out of total 115 species, 15 are Tulsi species and 15 are other aromatic species.
- **Bamboo species:** Total number of bamboo species conserved is 37. Out of these, 2 species are endemic to India and 3 species have medicinal properties.
- **Wild climbers:** Total number of wild climber species conserved is 76. A total of 75 species have been identified and 1 species is yet to be identified. Out of the total wild climbers conserved, 54 species have medicinal properties.
- **Cane species:** Total number of cane species conserved is 9. Out of these, 1 species is critically endangered, and 1 is vulnerable species as per IUCN categorization.
- **Grass species:** Total number of grass species conserved is 89 out of which 83 species have been identified and 6 are yet to be identified. A total number of 13 species have medicinal properties.
- **Fern species:** Total number of fern species conserved is 96 out of which 81 species have been identified and 15 are yet to be identified. 1 species is threatened as per Uttarakhand Biodiversity Board. Out of the total fern species, 1 is pan endemic and 22 species have medicinal properties.
- **Orchid species:** Total number of orchid species conserved is 87. Out of these, 37 species come under Appendix II of CITES, 1 species is critically endangered, 1 species is vulnerable as per IUCN categorization, 3 are threatened as per State Biodiversity Board and 1 species is vulnerable, 1 is rare as per ENVIS and 1 is vulnerable and 2 are rare as per Indian Biodiversity Portal. Out of the total orchid species conserved, 2 species are endemic and 18 have medicinal properties.
- **Alpine flowers:** Total number of Alpine flower species conserved is 15. Out of these, 1 species comes under Appendix II of CITES. Out of these, 1 species is endangered as per IUCN categorization, while 1 species is rare as per ENVIS and 2 species are critically endangered, 4 species are endangered according to various research papers. Out of total alpine flower species, 8 species have medicinal properties.
- **Wild flowers:** Total number of wild flower species conserved is 37. Out of this, 1 species is extinct in wild, as per IUCN categorization. Out of the total conserved wild flower species, 13 species have medicinal properties.
- **Palm species:** Total number of palm species conserved is 67. A total number of 4 species are critically endangered, 2 species are endangered, 2 species are vulnerable and 6 species are near threatened as per IUCN categorization, while 1 is rare as per ENVIS, 1 is threatened as per Uttarakhand Biodiversity Board and 1 is rare as per Indian Biodiversity Portal. Out of the total palm species, 1 is endemic to Uttarakhand.
- **Cycad species:** There are 7 species of Cycad. A total of 6 species have been identified and 1 is yet to be identified. A total number of 3 species are endangered, and 1 is near threatened species as per IUCN categorization.







- **Cactus and succulent species:** Total number of cactus and succulent species conserved is 213. There are 113 succulent species out of which 106 have been identified and 7 are yet to be identified, and there are total 100 cactus species out of which 91 species have been identified and 9 are yet to be identified. Out of this, 1 cactus species is endangered as per IUCN categorization and 1 is endemic.
- **Aquatic species:** Total number of aquatic species conserved is 45. A total of 44 species have been identified and 1 species is yet to be identified and 4 species have medicinal properties.
- **Insectivorous species:** Total number of insectivorous species conserved is 8. Out of the total insectivorous species, 3 species are endemic to the Indian Himalayan Region and 1 has medicinal properties.
- **Lichen species:** Total number of lichen species conserved is 85. Out of these, 1 species has medicinal properties.
- **Bryophyte species:** Total number of moss species conserved is 30 and liverwort species are 6.
- **Other species:** Total number of air plant species being conserved is 6 and 2 algae species have also been conserved.

I. **Tree Species** Tree Species being conserved across all the research Ranges with the prominent areas are at Arboratum (Haldwani & Jeolikot), Ficus Garden (Lalkuan), Pinatum (Kalika), Oak Conservation Area (Kalika) and Rododendron Demonstration Area (Munsyari).








I.Ficus:

S. No	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt./ Indian Biodiversity Portal)	Nursery												Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name											Total						
				1		2		3		4		5		6							
				Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name							No. Of Plant
1.	Moraceae ; <i>Ficus rumphii</i> Blume	 Pilkhan		Gaja	255										255	5(Trishula comp. 1 K.W.L.D); 1(Arboretum at Gaja); 1(Ficus Garden, Lalkuan); 20 (Riparian plot)		283	Fodder	India, Bhutan, Myanmar and Nepal.	
2.	Moraceae ; <i>Ficus religiosa</i> L.	 Peepal		Mandal	40	Kalsi	78	Lalkuan	7	Kalsi	78				203	25(Trishula comp. 1 K.W.L.D) 1(Arboretum at Gaja); 1 (Nav GrahaVaatika)/ 2 (SarvDharmVaatika)/ 1 (Panchvati); 1(Ficus Garden, Lalkuan)/ 1 (Buddha vaatika);20 (Riparian plot)		223	Medicinal	SE Asia, Southwest China, India and Himalayan foothills.	
3.	Moraceae; <i>Ficus auriculata</i> Lour.	 Timla		Mandal	330	Tangsa	50	Kalsi	40	Gaja	8				420	371 (Trishula comp. 1 K.W.L.D) ; 1(Ficus Garden, Lalkuan) 32 plants (Miyawaki Experiment); 1(Arboretum at Gaja); 52(Ficus Garden, Lalkuan)		886	Edible and Fodder	India (Outer Himalaya), Pakistan, S. China, Myanmar and Thailand.	

4.	Moraceae ; <i>Ficus neriifolia</i> J.E. Sm.	Dudhla 		Kalsi	38										38	7(Trishula comp. 1 K.W.L.D) 7(Ficus Garden, Lalkuan)		46	Fodder	Near Endemic.
5.	Moraceae; <i>Ficus palmata</i> Forssk.	Bedu 		Mandal	450	Kalika	77	Dwarson	998	Kalsi	25	Gaja	9		1559	190(Trishula comp. 1 K.W.L.D); 6(Ficus Garden, Lalkuan)		1756	Edible, Fodder and Medicinal	Uttarakhand in Mid Himalayan region. Pakistan and Nepal.
5A	Moraceae; <i>Ficus palmata</i> (Local)	 Punjab Fig														56 plants (Miyawaki Experiment); 1 (Arboretum at Gaja); 8 (Miyawaki); 7 (Ficus garden, Lalkuan)		72	Edible and Medicinal	Commonly found in Uttarakhand in Mid himalayan region.
5B	Moraceae; <i>Ficus palmata</i> (Doiwalal)	 Punjab Fig														11 (Ficus Garden, Lalkuan)		11	Edible and Medicinal	Native to India
6.	Moraceae; <i>Ficus hispida</i> L.F.	 Titmila	Least concern (as per IUCN)													77 (Trishula comp. 1 (K.W.L.D) ; 1(Arboretum at Gaja); 8(Ficus Garden, Lalkuan)		87	Fodder	India, Pakistan, Sri Lanka and Bhutan.
7.	Moraceae; <i>Ficus cunia</i> Buch. ham ex Roxb.	Khaina 		Mandal	20	Gaja	32	Lalkuan	81						133	29(Trishula comp. 1 K.W.L.D); 1(Arboretum at Gaja); 24(Ficus Garden, Lalkuan)		188	Fodder	Nepal to S.China and Malaysia.

8.	Moraceae; <i>Ficus clavata</i> Wall. ex Miq	Chachari 		Mandal	90	Gaja	85								170	71(Trishula comp. 1 K.W.L.D); 1(Arboretum at Gaja); 21(Ficus Garden, Lalkuan)		264	Fodder	India, Nepal, China and Myanmar.
9.	Moraceae; <i>Ficus virens</i> Aiton	Pakhar 														24(Trishula comp. 1 K.W.L.D); 1(Ficus Garden, Lalkuan)		26	Fodder	Southwest Asia.
10	Moraceae; <i>Ficus benghalensis</i> L.	Bargad 		Gaja	23	Lalkuan	5								28	1(Trishula comp. 1 K.W.L.D); 1(Arboretum at Gaja); 1 (Nakshtra Vaatika) 3 (SarvDharm Vaatika); 1 (Ficus Garden, Lalkuan)/1 (Buddha vaatika); 20(Riparian Plot)		57	Religious and Medicinal	Indian Subcontinent.
11.	Moraceae; <i>Ficus benghalensis</i> var. variegated															1(Ficus Garden, Lalkuan)		1	Medicinal	
12.	Moraceae; <i>Ficus benghalensis</i> var. <i>krishnae</i> (C. DC.) Syn . <i>Ficus krishnae</i> C. DC.Bull.	 Indian banyan		Lalkuan	8										8	1(Arboretum at Gaja); 1 (Arboretum); 1(Sarv Dharmvaatika) 3 (Ficus Garden, Lalkuan)		14	Medicinal	India, Malaysia and Sri Lanka.
13.	Moraceae; <i>Ficus gibbosa</i> Blume	Chachhari 		Kalsi	8										8	1(Ficus Garden, Lalkuan)		9	Fodder and Medicinal	India, Nepal, Myanmar, Sri Lanka and Vietnam.

14.	Moraceae; <i>Ficus tinctoria</i> G. subsp. <i>gibbosa</i> Blume	 Dye Fig														1(Ficus Garden, Lalkuan);		1		India, Nepal, Myanmar, Sri Lanka and Vietnam.	
15.	Moraceae; <i>Ficus infectoria</i> Willd.	Pakhad 		Gaja	341											341	2(Arboretum at Gaja); 1 (Nakshtra Vaatika); 5(Ficus Garden, Lalkuan)		349	Fodder	India, (Central, Western and Southern regions) Sri Lanka and Myanmar.
16.	Moraceae; <i>Ficus infectoria</i> Roxb. var. <i>caulocarpa</i> (Miq) King	 White Fig															1(Ficus Garden, Lalkuan)		1	Edible, Medicinal and Fuelwood	India, Japan, Sri Lanka and Myanmar.
17.	Moraceae; <i>Ficus racemosa</i> L.	Gular 															1(Arboretum at Gaja); 1 (Nav Graha Vaatika) 1 (Nakshtra Vaatika) 17 (Miyawaki)		20	Fodder	India, Nepal, Pakistan, Myanmar and China.
18.	Moraceae; <i>Ficus carica</i> L.	Anjir 	Least concern (IUCN)														1(Arboretum at Gaja); 1 (Sarv Dharm Vaatika); 4(Ficus Garden, Lalkuan)		6	Edible and fruit	India, West Asia, Turkey to Afghanistan.
19.	Moraceae; <i>Ficus carica</i>	 Common fig															2(Ficus Garden, Lalkuan)		2	Edible and Medicinal	India, West Asia, Turkey to Afghanistan.
20.	Moraceae; <i>Ficus carica</i>	 Common fig															1(Ficus Garden, Lalkuan)		1	Edible and Medicinal	India, West Asia, Turkey to Afghanistan.

21.	Moraceae; <i>Ficus lyrata</i> Warb.	 Fiddle leaf fig														4(Arboretum at Gaja); 2(Ficus Garden, Lalkuan)	6	Rubber	Native to Western Africa.
22.	Moraceae; <i>Ficus nervosa</i> B.Heyne ex Roth	Nervosa 														1(Arboretum at Gaja); 1(Ficus Garden, Lalkuan)	2	Medicinal	India, Nepal, Sri Lanka and China.
23.	Moraceae; <i>Ficus foveolata</i> Wall. ex Miq. var. <i>maliformis</i> King	Betuliwali bel 		Gaja	73										73	1(Arboretum at Gaja) 4(Ficus Garden, Lalkuan)	78	Medicinal	India , Bhutan, China and Myanmar.
24.	Moraceae; <i>Ficus arnottiana</i> (Miq.) Miq.	Paras pipal 														1 (Arboretum, Haldwani); 2(Ficus Garden, Lalkuan)	3	Fodder and Medicinal	India, Nepal and Sri Lanka.
25.	Moraceae; <i>Ficus mysorensis</i> Heyne ex Roth	 Mysore bargad														1 (Arboretum, Haldwani), 1(Ficus Garden, Lalkuan)	2	Edible and Medicinal	India, Bangladesh, Malaysia, Myanmar and Sri Lanka.
26.	Moraceae; <i>Ficus lutea</i> Vahl	 Giant leaved fig	Least Concern (IUCN)													1(Ficus Garden, Lalkuan)	1	Medicinal and Dye	Eastern Cape of South Africa to Tropical Africa
27.	Moraceae; <i>Ficus scandens</i> Roxb.	 Creeping fig or Climbing fig														2(Ficus Garden, Lalkuan)	2	Medicinal	India, China, Nepal, Myanmar, Bhutan and Thailand.

28.	Moraceae; <i>Ficus scandens</i> var. variegated															1(Ficus Garden, Lalkuan)			India, China, Nepal, Myanmar, Bhutan and Thailand.
29.	Moraceae; <i>Ficus tsjahela</i> Roxb.ex Buch. Ham.	 Karal Fig														1(Ficus Garden, Lalkuan)	1		India and Sri Lanka.
30.	Moraceae; <i>Ficus talbotii</i> King	 Talbot Fig														1(Ficus Garden, Lalkuan)	1		South India, Sri Lanka and Myanmar.
31.	Moraceae; <i>Ficus andamanica</i> Corner		Endangered (IUCN)													1(Ficus Garden, Lalkuan)	1		Endemic to India.
32.	Moraceae; <i>Ficus cyathistipula</i> Warb.															1(Ficus Garden, Lalkuan)	1		Native to the tropical forest regions of Africa.
33.	Moraceae; <i>Ficus saemocarpa</i> Miq,															10(Ficus Garden, Lalkuan)	10	Edible and Fodder	India, Bhutan China, Nepal and Myanmar.
34.	Moraceae; <i>Ficus exasperata</i> Vahl	 Sandpaper fig														11(Ficus Garden, Lalkuan)	11	Medicinal	India (Nicobar Islands and Southern region) Sri Lanka.

35.	Moraceae; <i>Ficus ovata</i> Vahl															1(Ficus Garden, Lalkuan)		1	Medicinal	Native to Mozambique.
36.	Moraceae; <i>Ficus altissima</i> Blume	 Council tree														1(Ficus Garden, Lalkuan)		1	Medicinal	Native to Southeast Asia.
37.	Moraceae; <i>Ficus hirta</i> Vahl															1(Ficus Garden, Lalkuan)		1	Medicinal	India, China, Indochina and Myanmar.
38.	Moraceae; <i>Ficus elastica</i> Roxb. (black)	 Rubber fig														1(Ficus Garden, Lalkuan)		1	Edible and Medicinal	India, Bhutan, Myanmar and Nepal.
39.	Moraceae; <i>Ficus elastica</i> var. variegated	 Rubber fig														1(Ficus Garden, Lalkuan)		1	Edible and Medicinal	India, Bhutan, Myanmar and Nepal.
40.	Moraceae; <i>Ficus elastica</i> var. decora	 Rubber fig														1(Ficus Garden, Lalkuan)		1	Edible and Medicinal	India, Bhutan, Myanmar and Nepal.
41.	Moraceae; <i>Ficus elastica</i> var. green	 Rubber fig														1(Ficus Garden, Lalkuan)		1	Edible and Medicinal	India, Bhutan, Myanmar and Nepal.
42.	Moraceae; <i>Ficus elastica</i> var.rubra	 Rubber fig														1(Ficus Garden, Lalkuan)		1	Edible and Medicinal	India, Bhutan, Myanmar and Nepal.








43.	Moraceae; <i>Ficus maclellandii</i> King	 Alii Fig or Banana Leaf Fig														1(Ficus Garden, Lalkuan)		1	Ornamental	India (Assam and Meghalaya) Myanmar.
44.	Moraceae; <i>Ficus starlight</i>															13(Ficus Garden, Lalkuan)		13	Ornamental	Native to Asia and Australia.
45.	Moraceae; <i>Ficus microcarpa</i> L. f.	 Chinese banyan														1(Ficus Garden, Lalkuan))		1	Medicinal and Fuelwood	India, Bhutan, China, Japan, Nepal, Sri Lanka, Malaysia and Taiwan.
46.	Moraceae; <i>Ficus retusa</i> L.															3(Ficus Garden, Lalkuan)		3	Ornamental	Malaysia
47.	Moraceae; <i>Ficus racemosa</i> L.	 Cluster fig tree, Indian fig or goolar fig	Lalkuan	34											34	4 (Ficus Garden, Lalkuan)		38	Edible and Medicinal	India (Outer Himalaya to plains and low hills) Pakistan, Nepal, Myanmar and Sri Lanka.
48.	Moraceae; <i>Ficus pomifera</i> Wall. ex King															1(Ficus Garden, Lalkuan)		1	Edible	Indo – Chinese region.
49.	Moraceae; <i>Ficus benjamina</i> L.	 Weeping fig														14(Ficus Garden, Lalkuan)		14	Medicinal and Fuelwood	India (Cultivated throughout), China, Malaysia to the Solomon Islands.

50.	Moraceae; <i>Ficus benjamina</i> L. var. nuda														15(Ficus Garden, Lalkuan)		15	Medicinal and Fuelwood	India (Assam, Sikkim, Bihar) China, Myanmar, Nepal and Bhutan.	
51.	Moraceae; <i>Ficus heterophylla</i> L. f.			Lalkuan	2										2	1(Ficus Garden, Lalkuan)		3	Medicinal	India, China, Myanmar, Sri Lanka and Indochina.
52.	Moraceae; <i>Ficus amplissima</i> J.E. Sm, <i>Syn. Ficus tsiela</i> Roxb. ex Buch. Ham	 Indian Bat fig														6(Ficus Garden, Lalkuan)		6	Medicina, Edible and Fuelwood	India (Central and South provinces) Sri Lanka.
53.	Moraceae; <i>Ficus cupulata</i> Haines		Rare BULL. BUT. SURV. INDIA VOL,44(1 40):2002													1(Ficus Garden, Lalkuan)		1	Fuelwood	Endemic to India.
54.	Moraceae; <i>Ficus drupacea</i> Thunb.	 Brown woolly fig														1(Ficus Garden, Lalkuan)		1	Medicinal	India (Southern region) Bangladesh, China, Nepal, Sri Lanka and Thailand.
55.	Moraceae; <i>Ficus iceland</i>															148 (Ficus Garden, Lalkuan)		148	Ornament al	Tropical East Asia (Bonsai)
56.	Moraceae; <i>Ficus triangularis</i>	 Triangle Fig														11(Ficus Garden, Lalkuan)		11	Ornament al	South Africa

57.	Moraceae; <i>Ficus triangularis</i> var. variegata	 Triangle Fig														15(Ficus Garden, Lalkuan)		15	Ornament al	South Africa
58.	Moraceae; <i>Ficus longifolia</i> Schott	 Narrow Leaf Fig														1(Ficus Garden, Lalkuan)		1	Ornament al	India to northern Australia
59.	Moraceae; <i>Ficus cyathistipuloide s</i> De. Wild.															1(Ficus Garden, Lalkuan)		1	Ornament al	Native to Africa
60.	Moraceae; <i>Ficus dalhousiae</i> (Miq.) Miq.			Lalkuan	4										4	1(Ficus Garden, Lalkuan)		5	Ornament al	Endemic to India
61.	Moraceae; <i>Ficus cercinalis</i>															1(Ficus Garden, Lalkuan)		1	Ornament al	
62.	Moraceae; <i>Ficus assamica</i> Miq.			Lalkuan	95										95	10 (Ficus Garden, Lalkuan)		105	Ornament al	India, Bangladesh, Nepal, S. China and Thailand
63.	Moraceae; <i>Ficus fishhook</i>															2(Ficus Garden, Lalkuan)		2	Ornament al	

64.	Moraceae; <i>Ficus jagala</i>																1(Ficus Garden, Lalkuan)		1		
65.	Moraceae; <i>Ficus travancorica</i> King.																1(Ficus Garden, Lalkuan)		1	Ornamental	South India
66.	Moraceae; <i>Ficus hookeriana</i> Corner																1(Ficus Garden, Lalkuan)		1	Fodder	India (Sikkim, Meghalaya, Arunachal Pradesh) Bhutan, China and Nepal.
67.	Moraceae; <i>Ficus kingbush</i>																16(Ficus Garden, Lalkuan)		16	Ornamental	Asia
68.	Moraceae; <i>Ficus callosa</i> Willd																1(Ficus Garden, Lalkuan)		1	Ornamental	India, China, Myanmar, Sri Lanka and Thailand.
69.	Moraceae; <i>Ficus blackii</i>															1	1(Ficus Garden, Lalkuan)		1	Fuelwood	
70.	Moraceae; <i>Ficus beddomei</i> King																1(Ficus Garden, Lalkuan)		1	Edible	Endemic to India.
71..	Moraceae; <i>Ficus mollis</i> Vahl (Hariyana)	 Soft Fig															1(Ficus Garden, Lalkuan)		1	Medicinal	India (Central and Southern provinces) Jharkhand, Rajasthan, Sri Lanka.

72.	Moraceae; <i>Ficus mollis</i> (Indore)	 Soft Fig															1(Ficus Garden, Lalkuan)		1	Medicinal	India (Central and Southern provinces) Jharkhand, Rajasthan, Sri Lanka.
73.	Moraceae; <i>Ficus green land</i>																1(Ficus Garden, Lalkuan)		2		
74.	Moraceae; <i>Ficus nitida</i>																1(Ficus Garden, Lalkuan)		1	Ornament al	
75.	Moraceae; <i>Ficus nitida</i> var. variegated																1(Ficus Garden, Lalkuan)		1	Ornament al	
76.	Moraceae ; <i>Ficus curtipes</i> Corner																1(Ficus Garden, Lalkuan)		1	Ornament al	India (Assam, Manipur, Sikkim, Tripura) Bhutan, China, Nepal and Myanmar.
77.	Moraceae; <i>Ficus obscura</i>																1(Ficus Garden, Lalkuan)		1		Japan, China and southeast Asia.
78.	Moraceae; <i>Ficus safari</i>																1(Ficus Garden, Lalkuan)		1	Ornament al	Tropical Asia and Australia

79.	Moraceae; <i>Ficus jag</i> <i>Damvar</i>																1(Ficus Garden, Lalkuan)		1		
80.	Moraceae; <i>Ficus reginald</i>																1(Ficus Garden, Lalkuan)		1	Ornament al	Asia
81.	Moraceae; <i>Ficus variegata</i> Blume	 Red Stem Fig															1(Ficus Garden, Lalkuan)		1	Ornament al	Asia and Southeast Australia
82.	Moraceae;																1(Ficus Garden, Lalkuan)		1		
83.	Moraceae;																1(Ficus Garden, Lalkuan)		1		
84.	Moraceae;																1(Ficus Garden, Lalkuan)		1		
85.	Moraceae;																1(Ficus Garden, Lalkuan)		1		







86.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
87.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
88.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
89.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
90.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
91.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
92.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		







93.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
94.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
95.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
96.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
97.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
98.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		
99.	Moraceae;																	1(Ficus Garden, Lalkuan)		1		




100.	Moraceae;																	1(Ficus Garden, Lalkuan)		1			
101.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		
102.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		
103.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		
104.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		
105.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		
106.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		
107.	Moraceae;																		1(Ficus Garden, Lalkuan)		1		





• 26 Species yet to be identified

II. Pine

S. No	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttar akhand Govt./ Indian Biodiversity Portal)	Nursery								Experiment Site	Preserva tion Plot	Grand Total	Use	Native Region	
				Nursery Name													Total
				1		2		3		4							
Nurse ry. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nurser y Name	No. Of Plant										
1.	Pinaceae; <i>Pinus ayacahuite</i> Ehrenb.ex Schltdl.	 Mexican white pine	Least concern (IUCN)									6 (Pineatum)		6	Ornamental and construction work.	Native to the mountains of Southern Mexico and West Central America.	
2.	Pinaceae; <i>P. caribaea</i> Morelet		Least concern (IUCN)									7 (Pineatum)		7	Construction work and timber	Native to Central America, Cuba, the Bahamas and the Turks and Caicos Islands.	
3.	Pinaceae; <i>P. canariensis</i> C. Sm.		Least concern (IUCN)									3 (Pineatum)		3	Ornamental and construction work.	California., United States of America.	
4.	Pinaceae; <i>P. densiflora</i> Siebold & Zucc.		Least concern (IUCN)									1 (Pineatum)		1	Timber production and ornamental	Japan, the Korean, Peninsula, Northeastern China.	
5.	Pinaceae; <i>P. echinata</i> Mill.		Least concern (IUCN)									238 (Pineatum)		238	Construction work.	Native to the Eastern United States from Southern New Jersey, South to Northern Florida, West to Eastern Texas.	
6.	Pinaceae; <i>P. ellioti</i> Engelm.		Least concern (IUCN)									55 (Pineatum)		55	Construction work.	Native to the Southeastern United States from Southern Carolina west to Southeastern Louisiana.	






7.	Pinaceae; <i>P. greggii</i> Engelm. ex Parl.		Near Threatened (IUCN)	Gaja	1	Saritataal	4						1907 (Pineatum)		1912	Construction work.	Native to Eastern Mexico.
8.	Pinaceae; <i>Pinus</i> spp.												3 (Pineatum)		3		
9.	Pinaceae; <i>Pinus</i> spp.												3 (Pineatum)		3		
10.	Pinaceae; <i>P. kesiya</i> Royle ex Gordon		Least concern (IUCN)										179 (Pineatum)		179	Construction work.	Its range extends south and east from the Khasi Hills in the northeast Indian state of Meghalaya, to Northern Thailand, Philippines, Myanmar, Cambodia, Laos, Southernmost China, and Vietnam.
11.	Pinaceae; <i>P. leiophylla</i> Schi.ex Schltdl.ex Cham.		Least concern (IUCN)										4 (Pineatum)		4	Construction work.	Found in the mountains of Southeastern Arizona and Southwestern New Mexico.
12.	Pinaceae; <i>P. montezume</i> Lamb.		Least concern (IUCN)										10 (Pineatum)		10	Medicinal and Construction work.	Native to Mexico and Central America.




13.	Pinaceae; <i>P. nigra</i> J.F. Arnold		Least concern (IUCN)										4390 (Pineatum)		4390	Construction work and paper manufacture.	Native to Europe and Asia .Its range extends from Spain and Morocco in east to Eastern Turkey and north to Northeastern Austria and the Crimea, Russia.
14.	Pinaceae; <i>P. oocarpa</i> Schiede .ex Schltldl												3 (Pineatum)		3	Construction work, resin and ornamental.	Native to Mexico and Central America. It is the national tree of Honduras.
15.	Pinaceae; <i>P. patula</i> Schi.ex Schltldl.ex Cham.												583 (Pineatum)		583	Construction work and Pulp production.	Australia, New Zealand, Argentina, Brazil, Southeast Asia, Southern and Eastern Africa.
16.	Pinaceae; <i>P. pinaster</i> Aiton.		Least concern (IUCN)										2 (Pineatum)		2	Construction work and flavonoids.	Portugal and Northern Spain to Southern and Western France, east to Western Italy, and South to Northern Morocco.
17.	Pinaceae; <i>P. pinea</i> L.		Least concern (IUCN)										1 (Pineatum)		1	Construction work and fuel.	Native to the Mediterranean region, occurring in Southern, Europe, Israel, Lebanon and Syria.
18.	Pinaceae; <i>P. rigida</i> Mill.		Least concern (IUCN)										19 (Pineatum)		19	Construction work, fuel and pulp	Native to eastern North America, from Central Maine south to Georgia and as far west as Kentucky

19.	Pinaceae; <i>P. taeda</i> L.	Lobolly pine 	Least concern (IUCN)									465 (Pineatum)		465	Construction work.	Native to the Southeastern United States, from Central Texas east to Florida, and north to Delaware and Southern New Jersey.
20.	Pinaceae; <i>P. thunbergii</i> Parl.		Least concern (IUCN)									4 (Pineatum)		4	Construction work.	Native to coastal areas of Japan.
21.	Pinaceae; <i>Pinus roxburghii</i> Sarg.	 Chir	Least concern (IUCN)									1 (NakshtraV aatika)		1	Medicinal and Timber	Near Endemic Native to the Himalayas.
22.	Pinaceae; <i>P. gerardiana</i> Wall. ex D. Don		Near threatened (IUCN)									4 (Pineatum)		4	Medicinal	Native to the northwestern Himalayas in eastern Afghanistan, Pakistan, and northwest India






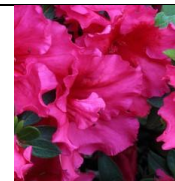
***2 Species yet to be identified**



III. Oak

S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery												Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name											Total						
				1		2		3		4		5									
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery Name	No. Of Plant								
1.	Fagaceae; <i>Quercus glauca</i> Thunb.	Harinj 		Mandal	156										156	275 (Kaligarh block –16) & 34 (Miyawaki Experiment)		465	Farming tools	Himalaya to Japan, USA.	
2.	Fagaceae; <i>Quercus leucotrichophora</i> .Camus	Banj 		Mandal	110	Tangsa	440	Saritatal	35	Kalika	443	Dwarsan	427	Patalhod	40	1495	420 (Trishula comp. 20 B K.W.L.D) ; 5 (Arboretum at Gaja); 1 (Arboretum, Haldwani); 804 (Miyawaki Experiment)		3050	Fodder and Fuelwood	Indian Himalayan region.
3.	Fagaceae; <i>Quercus semecarpifolia</i> Smith	Kharsu 		Devvan	150	Patalhod	30	Kalika	206							386	145(Trishula comp. 19 B K.W.L.D); 100 (Kaligarh block – 16)		650	Fodder and Fuelwood	Himalayas and nearby mountains in Tibet.
4.	Fagaceae; <i>Quercus floribunda</i> Lindl. ex A. Camus	Moru 		Saritatal	42											42	35(Trishula comp. 20 B K.W.L.D); 1(Arboretum at Gaja); 1 (Arboretum, Haldwani)		99	Farming tools	Near Endemic.
5.	Fagaceae; <i>Quercus serrata</i> Thunb.			Kalika	150											150	50 (Kaligarh block – 16); 3(Arboretum at Gaja)		203	Fodder	Himalayas, from Kumaon eastward, Manipur, Khasi hills and upper Myanmar.






6.	Fagaceae; <i>Quercus lamelloa</i> Smith	Shalshi 														5 (Kaligarh block 16)		5	Fodder and construction work	Himalaya to Southern China
7.	Fagaceae; <i>Quercus pachyphylla</i> Kurz	Bada katus 														5 (Kaligarh 16)		5	Fodder and construction work	Sikkim and Manipur.
8.	Fagaceae; <i>Quercus lanuginosa</i> Lam.	Latwa banj 	Least concern (IUCN, FFI and BGCI)	Kalika	18										18	249 (Kaligarh block – 16); 15 plants (Miyawaki Experiment).		282	Fodder and tanning	Native to East Asia China, Northern Thailand and Vietnam

IV. Rhododendron:







S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/ Biodiversity Board/ENVIS/Uttarakhand Govt./ Indian Biodiversity Portal)	Nursery										Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name															Total
				1		2		3		4		5							
Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant										
1.	Ericaceae; <i>Rhododendron arboreum</i> Sm.	Burans 	Least concern (IUCN)	Mandal	1000	Tangsa	450	Devvan	1827	Patalthod	2950	Kalika	7	6820	2 (Arboretum at Gaja)		6822	Edible	Indian Himalayan Region.
2.	Ericaceae; <i>Rhododendron barbatum</i> Wall.ex G.Don			Patalthod	50									50			50	Leaves are used as fish poison.	Indian Himalayan Region.
3.	Ericaceae; <i>Rhododendron campanulatum</i> D.Don			Patalthod	50									50			50	Medicinal	Himalayan alpine regions of Northern India (Sikkim, HP, UK), Bhutan, and Nepal.
4.	Ericaceae; <i>Rhododendron japonicum</i>			Kalika	10									10			10	Medicinal	Central and South Japan.
5.	Ericaceae; <i>Rhododendron anthopogon</i> D. Don	 Tagsu		Mandal	10									10			10	Medicinal	Near Endemic India , Nepal and China
6.	Ericaceae; <i>Azalea japonica</i>			Kalika	5	Dwarson	2							7			7	Ornamental	Asia, Europe and North America

7.	Ericaceae; <i>Azalea indica</i>			Kalika	5									5			5	Orname ntal	Asia, Europe and North America.
8.	Ericaceae; <i>Rhododendron niveum</i>			Kalika	4									4			4	Medicin al and Orname ntal	Northeast India









V. Other Tree Species:


S. No.	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt./ Indian Biodiversity Portal)	Nursery												Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name											Total					
				1		2		3		4		5		6						
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	Nursery Name	No. Of Plant	No. Of Plant	Nursery Name	No. Of Plant									
1.	Lauraceae; <i>Persea odoratissima</i> Nees.	 Kaula		Mandal	19700	Tangsa	1000									20700		20700	Fuelwood and Fodder	SE Asia – India.
2.	Lauraceae; <i>Cinnamomum tamala</i> Nees.	 Tejpat	Limited collection allowed by Uttarakhand Government	Mandal	265	Tangsa	2900	Kalika	230	Bhujiyaghat	35077	Patalhod	5	Dwarson	1509	39986	188 (Miyawaki Experiment); 2(Arboretum at Gaja); 1 (Arboretum, Haldwani)	40177	Spice and Medicinal	Near Endemic
3.	Oleaceae; <i>Fraxinus micrantha</i> Linglesh	 Angu	Data Deficient (IUCN)	Mandal	300	Kalika	1147	Saritalaal	200	Dwarson	1000					2647	63 (Miyawaki Experiment); 1(Arboretum at Gaja)	2711	Fuelwood	Central America
4.	Aceraceae; <i>Acer oblongum</i> Wall.ex DC.	 Pharbanj	Endangered (Indian Biodiversity Portal)	Mandal	820	Tangsa	380	Kalika	306	Dwarson	450	Shyampur	30			1986	40 (Mana Vanpanchayat); 134 (Miyawaki Experiment); 1(Arboretum at Gaja); 120 (RET demonstration plot, Harkot, Munsyari).	2281	Fodder and Timber	Pakistan, Nepal and China
5.	Rhamnaceae; <i>Hovenia dulcis</i> Thunb.	 Aunga	Least concern (IUCN)	Mandal	180	Tangsa	250	Kalika	311	Devvan	68					809	133 (Miyawaki Experiment); 1(Arboretum Gaja)	943	Medicinal	Japan, China, North Korea, and Thailand.

6.	Betulaceae; <i>Alnus nepalensis</i> Don.	 Utish	Least concern (IUCN)	Mandal	600	Tangsa	4000	Kalika	450	Dwarson	655					5705	124 (Miyawaki Experiment); 5(Arboretum Gaja) ; 1 (State tree Haldwani)	5835	Fuel Wood	Indian Himalayan Region.
7.	Betulaceae; <i>Betula alnoides</i> Buch. Ham.	 Saur		Mandal	800	Dwarson	250									800		1050	Timber	Indian Himalayan Region.
8.	Betulaceae; <i>Betula utilis</i> D. Don	 Bhoj patra	Least concern (IUCN)	Mandal	20	Kalika	159	Patalhod	7							186	20 (Mana Vanpanchayat); 1(Arboretum at Gaja); 115(RET demonstration plot, Harkot, Munsyari);93 (Miyawaki Experiment, Kalika)	415	Religious and Medicinal	Indian Himalayan Region.
9.	Juglandaceae; <i>Juglans regia</i> L.	 Akhrot	Least concern (IUCN)	Mandal	3500	Tangsa	3890	Shrikot	20							7410	14 (Miyawaki Experiment, Kalika); 1(Arboretum, Haldwani)	7425	Edible and Medicinal.	Near Endemic.
10.	Oleaceae; <i>Olea glandulifera</i> Wall.	 Garura				Tangsa	3100	Shrikot	1800	Saritataal	135					5035	2(Arboretum Gaja)	5037	Fodder, Bird attractant and Butterfly Host plant	Pakistan and China throughout tropical Asia to Australia.
11.	Lythraceae; <i>Punica granitum</i> L.	 Darim	Least concern (IUCN)			Tangsa	4800	Shrikot	830	Kalika	570	Dwarson	275	Saritataal	200	6675	597 (Miyawaki Experiment); 1(Arboretum at Gaja)	7273	Edible and Medicinal.	Iran to northern India.
12.	Cornaceae; <i>Cornus capitata</i> Wall	 Bhamor		Dwarson	1293	Tangsa	2067	Shrikot	1700	Kalika	99	Saritataal	500			5659	1185 (Kaligarh block 16) & (Dwarson block 16); 1(Arboretum at Gaja); 94 (Miyawaki	7033	Edible	Indian Himalayan Region.




																Experiment)					
13.	Betulaceae; <i>Corylus jacquemontii</i> Dene.	 Kabasi	Data Deficient (IUCN) Rare in Himalayan Region.	Mandal	55	Tangsa	5									60	52(Tangsa nursery); 5 (RET demonstration plot, Harkot, Munsyari); 3 (Miyawaki Experiment)		120	Medicinal and Edible	India, Afghanistan, Nepal and Pakistan.
14.	Caesalpiniaceae ; <i>Bauhinia purpurea</i> L.	 Purple Orchid Tree	Least concern (IUCN)			Tangsa	80									80	1(Arboretum at Gaja)		81	Edible	South China and Southeastern Asia.
15.	Myricaceae; <i>Myrica esculenta</i> Buch. Ham. Ex D.Don	 Kaphal		Mandal	350	Tangsa	199	Kalika	250	Dwarson	50	Saritataal	10			859	935 (Kaligarh block 16) and (Dwarson block 16) & 55 (Miyawaki Experiment); 2 (Arboretum at Gaja) 363(Dwarson block 16); 8(Sal associate experimental site, Lalkuan)		2222	Edible	Northern India, Southern Bhutan and Nepal.
16.	Urticaceae; <i>Boehmeria rugulosa</i> Wedd.	 Ghenti		Tangsa	4											4	1(Arboretum Gaja)		4	Fodder	India, Nepal, Bhutan
17.	Sapotaceae; <i>Diploknema butyracea</i> (Roxb.)H.J.Lam	 Chiura		Mandal	22000	Tangsa	2480	Dwarson	50							24530	1(Arboretum at Gaja); 1(Arboretum, Haldwani)		24532	Ghee and Soap	Sub Himalayan Tract.
18.	Tiliaceae; <i>Grewia oppositifolia</i> Roxb.ex Mast.	 Bhimal		Tangsa	240	Kalika	507	Dwarson	497	Kalsi	125					1369	373 (Miyawaki Experiment); 1(Arboretum Gaja); 16(Sal associate experimental site, Lalkuan		1759	Fodder	Near Endemic






19.	Sapindaceae; <i>Sapindus mukorossi</i> Gaertn.	 Ritha		Tangsa	80	Kalsi	52	Dwarson	37							132	1(Arboretum at Gaja); 1 SarvDharmvataka ; 1 (Arboretum, Haldwani);39 (Miyawaki Experiment)		211	Medicinal	India; Japan.
20.	Rosaceae; <i>Pyrus pashia</i> Buch. Ham ex Don	 Mehal	Least concern (IUCN)	Tangsa	50	Kalika	112	Kalsi	20	Gaja	35	Dwarson	98			315	162 (Miyawaki Experiment); 1(Arboretum at Gaja)		478	Edible	Indian Himalayan Region.
21.	Ginkgoaceae; <i>Ginkgo biloba</i> L.	 Ginkgo biloba	Endangered (IUCN)	Mandal	7	Tangsa	1	Kalika	93	Dwarson	1448	Devvan	7	Saritalaal	490	2018	59 (Kaligarh); 1(Arboretum at Gaja); 2 (Arboretum, Haldwani) ; 4 (Jurassic Garden, Haldwani)		2084	Medicinal	China
22.	Taxaceae; <i>Taxus baccata</i> ssp. <i>wallichiana</i> (Zucc)Pilger	 Thuner	Least concern IUCN Red List Collection closed for the time being by Uttarakhand Government.	Dwarson	89	Devvan	8	Patalhod	900							997	290(Mandal nursery); 33(R.E.T Devvan); 1(Arboretum at Gaja);114(RET demonstration) ; 56 (Miyawki Experiment)		1491	Medicinal	Indian Himalayan Region.
23.	Pinaceae; <i>Abies pindrow</i> (Royle ex D.Don) Royle	Raga 	Least concern (IUCN)	Patalhod	1500											1500	382 (Trishula comp. 19 B K.W.L.D)		1882	Medicinal and Timber	Afghanistan, India (Uttarakhand, HP, J&K), Nepal and Pakistan.
24.	Pinaceae; <i>Tsuga dumosa</i> Carr.	Tansin 	Least concern (IUCN)	Mandal	10	Dwarson	28									38	35 (Manavanpanchayat); 50 (Miyawaki Experiment)		123	Timber	Bhutan, China, India.
25.	Aceraceae; <i>Acer caesium</i> Wall. & Brandis	Kanchula 	Least concern (IUCN); vulnerable (ENVIS); Vulnerable (Indian Biodiversity Portal)	Mandal	400											400	15(Manavanpanchayat)		415	Fodder	Near Endemic







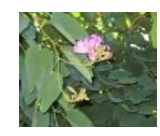
26.	Platanaceae; <i>Platanus orientalis</i> L	 Chinar	Data Deficient (IUCN)	Mandal	1	Dwarson	57	Patalhod	230							288	1(Arboretum Gaja)		289	Ornamental	Southeastern Europe and Asia.
27.	Cupressaceae; <i>Cryptomeria japonica</i> (L.f.) D. Don		Near Threatened (IUCN)	Mandal	20											20			20	Timber	Endemic to Japan.
28.	Pinaceae; <i>Cedrus deodara</i> (Royle ex D Don) G Don	Deodar 	Least concern (IUCN)	Mandal	200	Dwarson	540	Devvan	800	Patalhod	850	Kalika	1690			4080	1(Arboretum Gaja)		4081	Timber	Near Endemic
29.	Oleaceae; <i>Osmanthus fragrans</i> Lour.	 Silang	Least concern (IUCN)	Mandal	200											200			200	Perfumery	China
30.	Salicaceae; <i>Salix</i> (clone)	 Salix															533 (Trishula camp. 1)		533	Medicinal and Timber	Himachal Pradesh
31.	Lauraceae; <i>Machilus duthiei</i> King.	 Kaula		Kalika	29	Dwarson	540	Saritataal	50							619	74 plants (Miyawaki Experiment); 1(Arboretum Gaja)		694	Fodder	Near Endemic.
32.	Cornaceae; <i>Cornus macrophylla</i> Wall.	 Khagaas				Saritataal	400									400	349 (Miyawaki Experiment); 1(Arboretum Gaja)		750	Medicinal	Northern India, Nepal, Bhutan and Pakistan.
33.	Rosaceae; <i>Starnvaesia glucescens</i> Lind.	 Gadhmehal		Kalika	8											8	574 (Miyawaki Experiment)		582	Fodder and Fuel	South China, Indonesia and Philippines








34.	Pittosporaceae; <i>Pittosporium eriocarpum</i> Royle	 Tumri	Endangered (IUCN) Indeterminate (ENVIS)	Dwarson	200	Gaja	500									700	1(Arboretum Gaja)		701	Medicinal	Endemic
35.	Betulaceae; <i>Carpinus viminea</i> Lind.	Himalayan Hornbean 	Least Concern (IUCN)	Dwarson	110	Patalthod	74									184	774 (Miyawaki Experiment)	Nainital	958	Fodder	Pakistan, Nepal and Europe
36.	Phyllanthaceae ; <i>Phyllanthus emblica</i> L.	 Amla		Dwarson	7	Kalsi	460									467	1(Arboretum at Gaja); 1 (Nakshtra Vaatika); 2 (TriphalaVaatika); 10 (Miyawaki, Haldwani); 1 (SarvDharmVaatika); 1 (Buddha vaatika)		483	Medicinal	India, Sri Lanka, Uzbekistan and South Asia.
37.	Rosaceae; <i>Prunus armeriaca</i> Marsh.	Chullu 		Dwarson	1142											1142	349 (Miyawaki Experiment)		1491	Edible	North America and Florida
38.	Fagaceae; <i>Castanea sativa</i> Mill.	 Sweet chestnut															7 (Miyawaki Experiment)		7	Edible	Southern Europe
39.	Rosaceae; <i>Prunus cerasoides</i> D. Don	 Padam	Least concern (IUCN)	Kalsi	112	Saritatal	120	Mandal	400	Tangsa	200	Dwarson	600	Kalika	200	1632	2 (Miyawaki Experiment); 1 (Arboretum at Gaja); 1(Arboretum Haldwani)		1636	Ornamental, Dye and Walking sticks.	Nepal, Bhutan, China and Myanmar
40.	Combretaceae; <i>Terminalia tomentosa</i> Willd.	 Asna/Saaj		Kalsi	20	Shyampur	2121	Lalkuan	105							2246	1(Arboretum Haldwani); 8(Mixed biodiversity plot, Lalkuan)		2255	Timber	India, Nepal, Myanmar, Thailand and Vietnam.







41.	Combretaceae; <i>Terminalia bellirica</i> (Gaertn.)Roxb.	 Bahera		Kalsi	426	Lalkuan	17	Tangsa	25							443	1(Arboretum Haldwani)	18	487	Medicinal	Lower hills in Southeast Asia
42.	Combretaceae; <i>Terminalia chebula</i> Retz.	 Harrar		Kalsi	228	Lalkuan	220									448	3 (Triphala Vaatika, Haldwani); 1 (Arboretum, Haldwani); 70 (Color& tanning experimental plot), 124 (Sal associate experimental plot, Lalkuan)		646	Medicinal	South Asia India and Nepal, China, Vietnam.
43.	Sapindaceae; <i>Schleichera oleosa</i> (Lour.)Oken	 Kusum	Least concern (IUCN)	Kalsi	177	Shyampur	320									497	100 (RET Plot, Shyampur); 12 (Miyawaki, Haldwani); 3 (Arboretum, Haldwani); 16(Mixed biodiversity plot, Haldwani)		628	Medicinal	India, Myanmar, Nepal, Pakistan, Sri Lanka and Vietnam.
44.	Euphorbiaceae; <i>Bridelia retusa</i> (L.)A. Juss.	 Spinous kino	Least concern (IUCN)	Kalsi	310	Shyampur	750	Lalkuan	20							1080	735 (River range Kalsi); 100(RET plot); 96 Chakferi block (Seed Orchard); 14(Mixed biodiversity plot, Lalkuan)		2025	Medicinal	India, Myanmar, Nepal, China, Sri Lanka and Vietnam.
45.	Rutaceae; <i>Aegle marmelos</i> (L.) Correa	 Bel		Kalsi	190	Shyampur	20579	Haldwani	373	Lalkuan	150					21292	1(Arboretum at Gaja); 1 (Nakshatra Vaatika); 1 (SarvdharmVaatika); 5 (Arboretum, Haldwani)/9 (Miyawaki); 1 (Dashmool demo plot, Haldwani); 1		21338	Edible and Medicinal	Indian subcontinent and Southeast Asia.





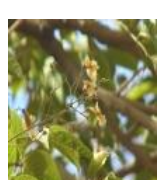


																(PanchVati); 27 (Dashmool species plot, Lalkuan)				
46.	Rubiaceae; <i>Hymenodictyon excelsum</i> Wall.	 Bhaultan/ Borang		Kalsi	90	Bhujiyaghat	260	Shyampur	350	Lalkuan	4					704	44(River range Kalsi); 1 (Arboretum at Gaja); 100 (Riparian plot); 97 (Chakferi block (Seed Orchard); 5(Miyawaki, Haldwani); 6 Arboretum, Haldwani; 6 (Sal associate 1 site, Lalkuan)	963	Medicinal	Sub Himalayan tract.
47.	Boraginaceae; <i>Cordia myxa</i> L.	 Lassora		Kalsi	23	Shyampur	2200	Lalkuan	30							2253	100 (Riparian plot); 101 Chakferi block (Seed Orchard); 16(Miyawaki, Haldwani) ; 1 (Arboretum, Haldwani); 16(Mixed biodiversity plot, Lalkuan)	2487	Medicinal	Tropical Africa; Middle East Asia.
48.	Lecythidaceae; <i>Careya arborea</i> Roxb.	 Kumbhi		Kalsi	230	Shyampur	670	Haldwani	11	Lalkuan	56					967	38 (River range Kalsi); 1(Arboretum at Gaja); 200(RET plot, Shyampur); 2 Arboretum; 3(Miyawaki, Haldwani); 12 (Mixed biodiversity plot),99(Gum species plot), 70(Color& tanning exp. Plot, Lalkuan)	1392	Medicinal	Sub Himalayan tract throughout Bengal, and Myanmar.








49.	Bignoniaceae; <i>Stereospermum suaveolens</i> (Roxb.)DC.	 Padhal		Kalsi	140	Shyampur	5750								5890	8 Pipalparao (Mixed Biodiversity Plot);1 (Miyawaki, Haldwani); 1 Dashmool Demo plot, Haldwani ; 1 (Arboretum, Haldwani); 28 (Dashmool species plot, Lalkuan)		5929	Medicinal, Fuelwood and Timber	India , Bangladesh and Myanmar
50.	Mimosaceae; <i>Albizia odoratissima</i> (L.f.) Benth.	 Kala siris	Least Concern (IUCN)	Kalsi	80	Lalkuan	50								130	40(River range Kalsi); 13(Mixed biodiversity plot, Lalkuan)		183	Medicinal	India, Myanmar, Nepal, China, Sri Lanka and Vietnam.
51.	Mimosaceae; <i>Albizia procera</i> Benth.	 Safed siris		Kalsi	60	Lalkuan	17								77	7(Mixed biodiversity plot); Lalkuan		84	Fuelwood and Timber	Northern India and South East Asia.
52.	Sterculiaceae; <i>Sterculia villosa</i> Roxb.	 Udal		Kalsi	15	Lalkuan	20								35	200 (Riparian plot); 1(Arboretum Haldwani); 5 (Miyawaki, Haldwani); 106, (Gum species experimental plot), 3 (Sal associate plot),16 (Mixed biodiversity plot, Lalkuan)		366	Medicinal	Southern India and South Asia.
53.	Caesalpiniaceae; <i>Delonix regia</i> (Boj.ex Hook) Raf.	 Gulmohar	Least concern (IUCN)	Kalsi	60	Lalkuan	65								125	4 (Palmetum)		129	Ornamental	Native to Madagascar






54.	Dilleniaceae; <i>Dillenia indica</i> L.	 Chalta		Kalsi	99										99			99	Edible	China and Tropical Asia.
55.	Myrtaceae; <i>Syzygium cumini</i> (L.)Skeels.	 Jamun		Kalsi	1300	Kalika	150	Jamun	350	Kalsi	300				1450	1 (NakshtraVaatika) ; 1 (Arboretum, Haldwani)		1452	Edible and Medicinal	Asia and tropical Australia.
56.	Clusiaceae; <i>Mesua ferrea</i> L.	 Naagkesar		Lalkuan	5										5	723 (River range Kalsi); 2 (Arboretum, Haldwani); 8 (Mix biodiversity plot, Lalkuan); 1 (Buddha vaatika); 400 (lantana plot Kalsi)		1139	Timber and Medicinal	Sri Lanka, India, Nepal, Indochina and Malaysia.
57.	Meliaceae; <i>Azadirachta indica</i> A. Juss.	Neem 	Least concern (IUCN)	Kalsi	80										80	150(Riparian plot); 3 (Arboretum); 11 (Miyawaki); 3 (Sarvdharm vaatika);50 lantana plot, kalsi		297	Medicinal	Bhutan, India, Bangladesh and Myanmar.
58.	Cupressaceae; <i>Platyclusus orientalis</i> (L.) Franco.	 Morpankhi	Near Threatened (IUCN)	Kalsi	32	Saritatal	30	Patalhod	1190	Lalkuan	7				1259			1259	Ornamental	China, Tajikistan and Uzbekistan
59.	Caesalpinaceae; <i>Bauhinia retusa</i> Roxb.	Semal 		Kalsi	1900										1900	1 (Arboretum, Haldwani) 1(Sal associate experimental site; Lalkuan;900(lantana plot kalsi)		2802	Medicinal	Near Endemic
60.	Caesalpinaceae; <i>Bauhinia variegata</i> L.	 Kachnar		Lalkuan	211	Shyampur	20	Kalsi	4000						4231	1(Arboretum Gaja); 417 Chakferi Block (Seed Orchard) ; 2(Arboretum) 23 (Miyawaki)		930	Edible	China , Southeast Asia to the Indian Subcontinent

66.	Fabaceae; <i>Acrocarpus fraxinifolius</i> Wight.	Acrocarpus 		Gaja	32										32	6(Arboretum Gaja)		38	Furniture	Sikkim, Assam, Western Dwaras (Jalpaiguri), and Upper Mynamar.
67.	Mimosaceae; <i>Indopiptadenia oudhensis</i> Brand.	Genti 	Threatened (State Biodiversity Board)	Gaja	559	Shyampur	60	Kalsi	20						639	1(Arboretum Gaja); 50 (RET plot, Shyampur); 2 (Arboretum, Haldwani) ; 4 (Jurassic Garden, Haldwani); 100 (RET plot, Shyampur).		796	Fodder and Timber	Endemic to the Western Himalaya.
68.	Cupressaceae; <i>Taxodium mucronatum</i> Ten.	Taxodium 	Least concern (IUCN)	Gaja	144										144	1(Arboretum Gaja)		145	Construction work and Ornamental	Native to Mexico
69.	Salicaceae; <i>Salix tetrasperma</i> Roxb.	Bhains 		Gaja	307										307	1(Arboretum Gaja)		308	Edible and Furniture making	NE India, Manipur.
70.	Salicaceae; <i>Salix alba</i> L.	Laila 	Least concern (IUCN)	Gaja	137										137	1(Arboretum Gaja)		138	Furniture making and Medicinal	Native to Europe and western and central Asia
71.	Lauraceae; <i>Litsea umbrosa</i> Nees.	Kaul 		Saritataal	728										728	1(Arboretum Gaja)		729	Medicinal	East Asia and Indian Himalayan Region.
72.	Ulmaceae; <i>Celtis australis</i> L.	Kharik 		Saritataal	45	Tangsa	120	Kalika	150						45	1(Arboretum Gaja)		316	Fodder	Europe and Asia.




73.	Rhamnaceae; <i>Rhamnus triqueter</i> (Wall.) Brandis	Gonta 		Saritataal	260										260	1(Arboretum Gaja); 148 lantana plot kalsi		409	Fodder	Near Endemic
74.	Anacardiaceae; <i>Rhus semialata</i> Murray.	Dhamila 	Least concern (IUCN)	Saritataal	120										120	1(Arboretum Gaja)		121	Medicinal	China, Japan and North Eastern parts of India.
75.	Verbinaceae; <i>Gmelina arborea</i> Roxb.	Gamhar 														1(Arboretum Gaja);5 (Miyawaki, Haldwani ; 1 Dashmool, Haldwani); 28 (Dashmool species experimental plot, Lalkuan)		35	Furniture making	Sub Himalayan tract
76.	Mimosaceae; <i>Albizia lucidor</i> (Steud.)I.C.Nielsen	Potka siris 														1(Arboretum Gaja)		1	Timber	Sub Himalayan tract
77.	Malvaceae; <i>Chorisia speciosa</i> Ravenna															3(Arboretum Gaja)		3	Edible	Native to Argentina and Brazil
78.	Sterculiaceae; <i>Guazuma ulmifolia</i> Lam.	Rudrakshi 														1(Arboretum Gaja)		1	Construction	Native of tropical America



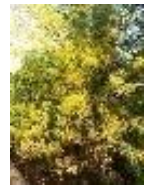


79.	Lythraceae; <i>Lagerstroemia lanceolata</i> Wall.	Nandi tree 															1(Arboretum Gaja)		1	Rafters	Native to Western Ghats
80.	Sterculiaceae; <i>Pterospermum acerifolium</i> Wall.	Kanak champa 		Lalkuan	23											23	4(Arboretum Gaja); 213(Golatappar 7B); 1(Arboretum Haldwani)		241	Medicinal	Foothills of Indian Himalayan Region
81.	Fabaceae; <i>Gleditsia sinensis</i> Lam.																2(Arboretum Gaja)		2	Medicinal	Native to Asia
82.	Paulowniaceae; <i>Paulownia fortunei</i> Hemsl.																1(Arboretum Gaja)		1	Timber	Native to China and SE Asia
83.	Sterculiaceae; <i>Stereospermum chelonoides</i> DC.	Padal 															1(Arboretum Gaja)		1	Construction work	Native to Western Ghats and tropical Himalaya
84.	Fabaceae; <i>Pongamia pinnata</i> (L.) Panigrahi	Karanj 	Least concern (IUCN)	Lalkuan	97	Shyampur	90									187	2(Arboretum Gaja); 69 (Color& tanning experimental plot, Lalkuan); 20 (riparian plot)		278	Medicinal	Native to Indian subcontinent
85.	Lauraceae; <i>Cinnamomum camphora</i> F. Nees	Kapoor 															1(Arboretum Gaja); 1 (Aromatic plants(Bhujjiya ghat); 1 (Arboretum, Haldwani); 5(Aromatic species project site, Lalkuan)		8	Medicinal	Native to China, Japan, Korea, Taiwan


86.	Sterculiaceae; <i>Sterculia colorata</i> Roxb.	Kaushi 															2(Arboretum Gaja)		2	Rope making	Native to Western Ghats and Deccan.
87.	Fabaceae; <i>Schizolobium parahyba</i> S.F.Blake																3(Arboretum Gaja)		3	Toy making	Native to Brazil
88.	Bignoniaceae; <i>Haplophragma adenophyllum</i>	Marodfali 															1(Arboretum Gaja)		1	Furniture making	Assam, Myanmar and Bangladesh.
89.	Lauraceae; <i>Cinnamomum glaucescens</i> Hand. Mazz.	Sugandhkoki a 															2(Arboretum Gaja)		2	Perfume ry	Bhutan, Sikkim. Manipur and Khasi Hills.
90.	Moraceae; <i>Morus alba</i> L.	Shahtoot 	Lalkuan	14												14	2(Arboretum Gaja); 1(Arboretum, Haldwani)		17	Edible and Sericulture	Northern China and India.
91.	Proteaceae; <i>Grevillea robusta</i> A. Cunn.ex R.Br.																2(Arboretum Gaja)		2	Furniture making	Native to northern New South Wales and southern Queensland, Australia
92.	Oleaceae; <i>Olea eruopaea</i> L.	 Jaitun															1(Arboretum Gaja); 5 (Other trees, Lalkuan)		6	Edible oil	Native to the Mediterranean region.








93.	Salicaceae; <i>Salix babylonica</i> L.	Majnu 		Patalthod	50										50	1(Arboretum Gaja); 16 (Sal associate experimental site, Lalkuan)	67	Timber	Native to dry areas of northern China
94.	Oleaceae; <i>Nyctanthes arbortristis</i> L.	 Harsingar/ Parijat		Haldwani	30	Lalkuan	4	Shyampur	5						39	1(Arboretum Gaja); 100 (Riparian plot, Shyampur); 1(Sarvdharm vaatika, Haldwani); 4 (Aromatic Block); 1 (Arboretum, Haldwani) 2 Bhujiyaghat (Aromaticplants	148	Medicinal	South Asia and Southeast Asia.
95.	Tiliaceae; <i>Grewia globra</i> Bl.	 Kathbhimal		Lalkuan	26										26	1(Arboretum Gaja); 7 (Miyawaki, Haldwani);2 (Arboretum, Haldwani); 250 (Sal associate experimental site, Lalkuan)	286	Fibre	Native to Northwest Himalayas
96.	Salicaceae; <i>Salix elaeagnos</i> Scop.															1(Arboretum Gaja)	1	Timber	India, Nepal, China.
97.	Esalpiniaceae; <i>Cassia spectabilis</i> (DC) Irwin&Barneby		Least concern (IUCN)													1(Arboretum Gaja)	1	Ornamental	Native to South and Central America







98.	Anacardiaceae; <i>Pleiogynium ceresiferum</i> (DC.)Leenh.																3(Arboretum Gaja)	3	Edible	Native to Malaysia, Australia and the Pacific Islands
99.	Fabaceae; <i>Tipauna tipu</i> (Benth.) Kuntze																1(Arboretum Gaja)	1	Timber	South American tree
100.	Mimoseae; <i>Leuceana diversifolia</i> L.		Least concern (IUCN)														1(Arboretum Gaja)	1	Edible	Native to the Americas
101.	Bignoniaceae; <i>Jacranda mimosifolia</i> D.Don	 Jacranda	Vulnerable (IUCN)														1(Arboretum Gaja) 3 (Palmetum)	4	Orname ntal	Native to south central South America
102.	Apocynaceae; <i>Acokanthera oppositifolia</i> (Lam.) Codd		Least concern (IUCN)														1(Arboretum Gaja)	1	Medicin al and Orname ntal	Southern and Central Africa
103.	Mimoseae; <i>Acacia stenocarpa</i> A.Rich																1(Arboretum Gaja)	1	Medicin al	Egypt to Kenya and west Senegal
104.	Cannabaceae; <i>Trema orientalis</i> Bl.	Banihari 	Least concern (IUCN)														1(Arboretum Gaja); 41 (Banihari conservation plot); 1 (Arboretum, Haldwani)	43	Medicin al	Native to Indian subcontin ent

105.	Fabaceae; <i>Butea monosperma</i> (Lam.) Taub	Dhak 	Data Deficient (IUCN)			Haldwani	11	Lalkuan	32						43	1(Arboretum Gaja); 100 (Riparian plot); 99 Chakferi block (Seed Orchard); 1 (Nav Graha Vaatika); 1 (Nakshtra Vaatika); 1 (Arboretum, Haldwani); 88(Gum species experimental plot), 16 (Mixed biodiversity plot, Lalkuan); 30 (Riparian plot), Shyampur		380	Timber	Native to subtropical, tropical and Southeast India
106.	Fabaceae; <i>Tamarindus indica</i> L.	Imli 	Least concern (IUCN)	Haldwani	100										100	2(Arboretum Gaja); 100 Chakferi block (Seed Orchard); 2(Miyawaki, Haldwani); 1 (SarvDharm Vaatika, Haldwani); 1(Arboretum, Haldwani)		206	Edible	Tropical Africa, and Madagascar.
107.	Rubiaceae; <i>Neolamarckia cadamba</i> (Roxb.) Bosser	Kadamb 		Lalkuan	53										53	1(Arboretum Gaja); 1 (Nakshtra Vaatika; 1 (SarvDharm Vaatika); 1 (Arboretum, Haldwani)		57	Furniture making	South and Southeast Asia.








108.	Fabaceae; <i>Saraca asoca</i>	 Seeta Ashok	Vulnerable (IUCN)	Lalkuan	11										11	1(Arboretum Gaja); 1 SarvDharmVatika, Haldwani ;1 (Panchvati, Haldwani) ;1 (Panchvati) ;3 (Arboretum, Haldwani); 7 (Ashok Vatika, Haldwani); 6 (Palmetum); 160 lantana plot kalsi		191	Ornamental	Native to Central India and Western Ghats
109.	Elaeagnaceae; <i>Elaeagnus latifolia</i> L.	 Loharu		Lalkuan	95										95	2(Arboretum Gaja); 14(Sal associate site, Lalkuan); 50(Medicinal Plant Conservatory Haldwani)		161	Edible and Medicinal	E. Asia, Pakistan and India.
110.	Caesalpiniaceae ; <i>Cassia fistula</i> L.	Amaltas 	Least concern (IUCN)	Lalkuan	64	Shyampur	130								194	1(Arboretum Gaja); 27 (Miyawaki, Haldwani); 67 (Color& tanning experimental plot,Lalkuan); 1 (Buddha park); 6 (Palmetum); 50 (Riparian plot)		279	Medicinal and Ornamental.	Native to Indian subcontinent.
111.	Moringaceae; <i>Moringa oelifera</i> Lam.	Sahjan 		Lalkuan	101	Kalsi	400								501	1(Arboretum Gaja); 1 (Arboretum, Haldwani); 15(Mixed biodiversity plot, Lalkuan)		518	Edible	Native to Indian subcontinent
112.	Phyllanthaceae; <i>Bishchofia javanica</i> Blume.	Paniyala 		Shyampur	25	Haldwani	134	Lalkuan	40						199	1(Arboretum Gaja); 150 (RET plot); 19 (Miyawaki, Haldwani); 69 (Color& tanning plot), 8(mixed biodiversity plot, Lalkuan)		446	Furniture making and Medicinal.	South Asia


113.	Magnoliaceae; <i>Magnolia champaca</i> (L.) Baill.ex Pierre	 Champa	Least concern (IUCN)													1(Arboretum Gaja); 5 (Arboretum Haldwani)		6	Furniture making and Ornamental	India, Java and Philippines.	
114.	Burseraceae; <i>Garuga pinnata</i> Roxb.	 Kharpat														1(Arboretum Gaja); 100(RET plot); 5 (Pipalparao Biodiversity Plot) ;14 (Miyawaki, Haldwani)		120	Medicinal	China and Indian subcontinent.	
115.	Ebenaceae; <i>Diospyros chloroxylon</i> Roxb.	 Kala tendu	Not evaluated (IUCN)	Shyampur	25	Lalkuan	2								27	1(Arboretum Gaja); 100 (RET Plot, Shyampur)		128	Medicinal	Native to South India	
116.	Euphorbiaceae; <i>Putranjiva roxburghii</i> Wall.	 Putranjiva		Lalkuan	14											14	1(Arboretum Gaja); 100 (Riparian plot); 2(Arboretum Haldwani)		117	Medicinal	Southeast Asia, Indian Subcontinent.
117.	Rubiaceae; <i>Haldina cordifolia</i> (Roxb.) Hook.f. ex Brandis	 Haldu		Shyampur	150	Lalkuan	202									352	1(Arboretum Gaja); 7 (Miyawaki, Haldwani); 25 (HalduVaatika) ; 1 (Arboretum, Haldwani); 137 (Sal associate experimental plot, Lalkuan)		523	Medicinal	Sub Himalayan tracts; Western Ghats, Sri Lanka and Myanmar.
118.	Fabaceae; <i>Dalbergia sissoo</i> Roxb.	 Shisham		Lalkuan	40	Kalsi	1200									1240	2(Arboretum Gaja); 15 (Miyawaki, Haldwani) ; 3 (Arboretum, Haldwani); 1 (Buddha park)		1261	Timber	Sub Himalayan tracts
119.	Mimosaceae; <i>Acacia catechu</i> Wall.	 Khair		Shyampur	40	Kalsi	340									380	1 (Nav GrahaVaatika); 1 (Nakshtra Vaatika);18 (Miyawaki);11 (Arboretum, Haldwani)		411	Edible	Garhwal and Kumaon; Irawaddi valley of Pegu (Myanmar).

120.	Mimosaceae; <i>Acacia nilotica</i> (L.) P.J.H.Hurter & Mabb.	Babul 	Least concern (IUCN)	Lalkuan	13										13	1(Arboretum Gaja); 57 (Gum species experimental plot, Lalkuan)	71	Edible, Gum and Reclamation	Africa, Middle East Asia and Indian subcontinent.
121.	Meliaceae; <i>Melia azadirach</i> L.	Bakain 	Least concern (IUCN)													1(Arboretum Gaja); 3(Arboretum Haldwani)	4	Timber	Southeast Asia and Northern Australia.
122.	Elaeocarpaceae; <i>Eleocarpus augustifolius</i> Bl.	 Rudraksha														1(Arboretum Gaja); 2 (Arboretum, Haldwani); 75 (Rudraksh Hedge Garden, Haldwani)	78	Pharmacological	India, Nepal and Bangladesh.
123.	Verbenaceae; <i>Tectona grandis</i> L.	Teak 														2(Arboretum Gaja); 2(Arboretum Haldwani)	4	Timber	Central India and Myanmar.
124.	Simaroubaceae; <i>Simarouba glauca</i> DC.	Laxmitaru 														1(Arboretum Gaja); 1 (Arboretum, Haldwani)	2	Medicinal	Native to Florida, South America.
125.	Araucariaceae; <i>Agathis robusta</i> Bailey	Agathis 	Least concern (IUCN)	Lalkuan	25										25	1(Arboretum Gaja); 1(Arboretum Haldwani)	27	Furniture making	Papua New Guinea and Queensland, Australia.
126.	Fabaceae; <i>Gleditsia triacanthos</i> L.	 Kauri pine														1(Arboretum Gaja)	1	Varnishes and paints	Native to central North America.






127.	Mimosaceae; <i>Albizia zygea</i> (D.C) J.F.Macbr.																1(Arboretum Gaja)		1	Medicinal	Asia, Africa, Madagascar, America and Australia.
128.	Podocarpaceae; <i>Podocarpus gracilior</i> (Pilg.) C.N.Page		Least concern (IUCN)														2(Arboretum Gaja)		2	Timber	Asia, Africa, Madagascar, America and Australia.
129.	Santalaceae; <i>Santalum album</i> L.	Chandan 	Vulnerable (IUCN)	Lalkuan	29											29	2(Arboretum Gaja); 4 (Arboretum, Haldwani); 365(Chandan experimental plot, Lalkuan)		400	Aromatic oil	Endemic to Timor Islands.
130.	Myrtaceae; <i>Callistemon viminalis</i> Byrnes	Cheel/ Bottlebrush 															2(Arboretum Gaja); 4 (Palmetum); 4 (Arboretum Haldwani)		10	Ornamental	East coast of Australia from Cape York to north east New South Wales.
131.	Meliaceae; <i>Dysoxylum binectariferum</i> Hook.fil.	Achalkoot 															3(Arboretum Gaja); 2 (Arboretum, Haldwani)		5	Medicinal	Sikkim, Khasi hills, Western Ghats.
132.	Combretaceae; <i>Anogeissus acuminata</i> Wall	Dhau 															2(Arboretum Gaja)		2	Timber	Chittagon g hill tract. Upper and lower Myanmar.




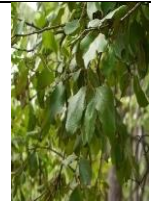



133.	Meliaceae; <i>Chukrasia velutina</i> M.Roem	Chikrasi 	Least concern (IUCN)														5(Arboretum Gaja); 6 (Palmetum); 1(Arboretum Haldwani)	12	Medicinal	India, China, Malaysia, Myanmar, Sri Lanka.
134.	Araucariaceae; <i>Araucaria bidwilli</i> Hook		Least concern (IUCN)														4(Arboretum Gaja)	4	Edible	South east Queensland Australia.
135.	Araucariaceae: <i>Araucaia cunninghami</i>																2(Arboretum Gaja)	2	Furniture making	Dry rainforests of New South Wales and Queensland and in New Guinea
136.	Mimosaceae; <i>Acacia lenticularis</i> Buch. Ham. ex Benth																1 (Arboretum Gaja)	1	Medicinal	E. Asia. India, Pakistan, Nepal.
137.	Pinaceae; <i>Cedrus atlantica</i> (Endl.) Manetti ex Carriere		Endangered (IUCN)														1(Arboretum Gaja)	1	Timber	Native to the Atlas Mountains of Morocco
138.	Mimosaceae; <i>Acacia confusa</i> Merr		Least concern (IUCN)														1(Arboretum Gaja)	1	Medicinal	Native to South East Asia
139.	Sapindaceae; <i>Koelreuteria paniculata</i> Laxm.																3(Arboretum Gaja)	3	Ornamental	Native to Eastern Asia, in China and Korea

140.	Fabaceae; <i>Derris robusta</i> (Roxb.ex DC.) Benth	 Kathiyakoroi														1(Arboretum Gaja)		1		Native to East Himalayas	
141.	Fabaceae; <i>Ougeinia oojeinense</i> (Roxb.) Hochreut	 Sadan		Lalkuan	48	Kalsi	350									398	1(Arboretum Gaja); 1 (Arboretum Haldwani); 64 (Sal associate plot, Lalkuan)		464	Fodder and Farming tool	Native to western Himalayas
142.	Cupressaceae; <i>Cupressus torulosa</i> D. Don ex Lamb	Surai 	Least concern (IUCN)	Patalthod	200											200			200	Medicinal.	Near Endemic
143.	Cupressaceae; <i>Juniperus recurva</i> Buch. Ham. ex D. Don	Dhoop 	Least concern (IUCN)	Patalthod	145											145	105(RET demonstration plot, Harkot, Munsyari)		295	Timber and Ornamental	Indian Himalayan Region.
144.	Malvaceae; <i>Kydia calycina</i> Roxb.	Pula 	Least Concern (IUCN)	Shyampur	400	Lalkuan	9									409	200 (Riparian plot); 104 Chakferi block (Seed Orchard); 1(Miyawaki, Haldwani); 5(Sal associate site, Lalkuan)		719	Medicinal and Timber	E. Asia southern China, Indian subcontinent, Myanmar.
145.	Myrtaceae; <i>Eucalyptus clonol</i> (K 25)	Eucalyptus 		Shyampur	12959											12959			12959	Timber	Native to Australia.
146.	Anacardiaceae; <i>Spondias mangifera</i> Willd.	Aamra 		Shyampur	80	Lalkuan	32									112	200 (Riparian plot) ; 2 (Arboretum, Haldwani); 99(Gum & dye plot), 15 (Mixed biodiversity plot, Lalkuan); 80 lantana plot, kalsi)		508	Medicinal	Sub Himalayan tract and outer valleys upto Chenab region.






147.	Bixaceae <i>Flacourtia cataphracta</i> Roxb. ex Willdenow	Pachnala 		Shyampur	29										29	100 (RET Plot, Shyampur); 107 Chakferi block (Seed Orchard)		236	Agricultural implements, Fruit and Edible	Tropical regions of Asia
148.	Cornaceae; <i>Alangium lamarckii</i> Thwaites	Ankola 	Rare (ENVIS)	Shyampur	1100	Lalkuan	63								1163	1(Arboretum Haldwani); 16(Mixed biodiversity plot, Lalkuan)		1180	Timber	W.Africa, E.Asia and Tropical Australia.
149.	Combretaceae; <i>Anogeissus latifolia</i> Wall.ex Guill & Perr.	Bakali 		Shyampur	595	Lalkuan	4								599	200 (Riparian plot); 100 (Gum species plot), 13(mixed biodiversity plot, Lalkuan)		912	Medicinal	India, Nepal, Myanmar and Sri Lanka.
150.	Fabaceae; <i>Pterocarpus marsupium</i> Roxb.	Bijasal 	Vulnerable (IUCN)	Shyampur	110	Lalkuan	5								115	100 (RET plot, Shyampur); 8 Pipalparao (Mixed Biodiversity Plot); 14 (Miyawaki, Haldwani); 3 (Arboretum, Haldwani); 14 (Mixed biodiversity plot, Lalkuan)		254	Medicinal	Central and south India , South east Corner of Kumaon.
151.	Sapotaceae; <i>Madhuca longifolia</i> (Koenig) MacBride.	Mahua 		Shyampur	141	Lalkuan	75								216	100 (RET plot, Shyampur); 1 (Arboretum, Haldwani); 1 (NakshtraVaatika, Haldwani); 8 Pipalparao (Mixed Biodiversity Plot) 70(Color&tanning experimental plot, Lalkuan)		386	Medicinal	Himalayan foothills from the river Ravi to Kumaon, and southwards to Central India.







152.	Rhizophoraceae; <i>Carallia integerrima</i> DC.	Varangu 														414 (RET plot, Shyampur); 15 Pipalparao (Mixed Biodiversity Plot); 1 (Arboretum, Haldwani)	430	Medicinal and Fodder	Australia, Malaysia, Indochina ; Western Ghats.		
153.	Burseraceae; <i>Boswellia serrata</i> Roxb.	Salaai guggal 		Lalkuan	102											102	100 (RET plot, Shyampur); 106 (Gum species plot), 8 (Mixed biodiversity plot, Lalkuan)	316	Medicinal and Gum	Sub Himalayan tract.	
154.	Annonaceae; <i>Miliusa velutina</i> H.f. & Thoum.	Domsal 	Not Evaluated (Indian Biodiversity Board)														150 (RET plot, Shyampur); 12 Pipalparao (Mixed Biodiversity Plot); 8 (Miyawaki, Haldwani);7 (Sal associate site, Lalkuan)	167	Medicinal	Sub Himalayan tract, Central India.	
155.	Lauraceae; <i>Litsea chinensis</i> Lam.	Maida lakdi 															20 (RET plot, Shyampur); 1(Arboretum, Haldwani)	21	Medicinal	Sub Himalayan tract, Bengal, Mynamar and South India	
156.	Ebenaceae; <i>Diospyros cordofolia</i> Roxb.	Vish tendu 		Lalkuan	20												20	100 (RET plot, Shyampur); 16 (Miyawaki); 1(Arboretum, Haldwani);31 (Sal associate site, Lalkuan);	168	Medicinal	Sub Himalayan tract, from the Ravi Eastwards
157.	Anacardiaceae; <i>Semecarpus anacardium</i> L.f.	Bhilawa 	Not evaluated (Indian Biodiversity board)	Lalkuan	129												129	20 (RET plot, Shyampur); 9 (Miyawaki, Haldwani); 4 (Pipalparao Mixed	256	Medicinal	Sub Himalayan tracts, Assam, Khasi hills.







																	Biodiversity Plot); 82 (Color&tannin plot Lalkuan), 12 (Sal associate site, Lalkuan)					
158.	Loganiaceae; <i>Strychnos nuxvomica</i> L.	Kulicha 		Lalkuan	9												9	20 (RET plot, Shyampur); 1 (NakshtraVaatika, Haldwani); 1(Arboretum, Haldwani); 8(Mixed biodiversity plot, Lalkuan)		39	Medicinal	Western peninsula, lower and upper Myanmar
159.	Rubiaceae; <i>Mitrangyna parvifolia</i> (Roxb.)Korth	Faldu 		Lalkuan	75												75	150(RET plot, Shyampur); 1(Arboretum Haldwani); 16(Sal associate experimental site, Lalkuan)		242	Medicinal	India and Sri lanka
160.	Caesalpiniaceae; <i>Bauhinia malabarica</i> Roxb.	Mallbar bauhinia 																200 (Riparian plot); 16(Sal associate experimental site, Lalkuan)		216	Medicinal	Sub Himalayan tracts and southern parts of India.
161.	Oxalidaceae; <i>Averrhoa carambola</i> L.	 Karmal																1 (Arboretum, Haldwani)		1	Edible and Medicinal	Native to Southeast Asia
162.	Anacardiaceae; <i>Buchanania lanzan</i> Spreng.	 Chironji		Lalkuan	1												1	2 (Arboretum, Haldwani); 12(Mixed biodiversity plot, Lalkuan)		15	Edible	Northwest India

163.	Capparaceae; <i>Crateva nurvala</i> Buch. Ham.	 Barna														1 (Arboretum, Haldwani)		1	Medicinal	Sub Himalayan tracts; Tamil Nadu, Kerala.
164.	Rutaceae; <i>Citrus medica L.</i>	 Nimboo														1 (Arboretum, Haldwani)		1	Edible	China
165.	Ebenaceae; <i>Diospyros malabarica</i> (Desr.)Kostel	 Gaub														1 (Arboretum, Haldwani)		1	Medicinal	Indian Subcontinent and SW.Asia
166.	Ebenaceae; <i>Diospyros melanoxylon</i> Roxb.	 Tendu														15(Miyawaki, Haldwani); 1(Arboretum, Haldwani)		16	Medicinal	Central India and Western Peninsula
167.	Tiliaceae; <i>Elaeocarpus serratus L.</i>	Bhadraksh 	Lalkuan	3												3	1(Arboretum, Haldwani)	4	Medicinal	Western ghats
168.	Rubiaceae; <i>Gardenia turgida</i> Roxb.	Thanela 	Shyampur	470	Lalkuan	4										474	23 (Pipalparao (Mixed Biodiversity Plot); 3 (Arboretum, Haldwani); 16(Mixed biodiversity plot, Lalkuan)	516	Medicinal	Sub Himalayan tracts
169.	Bignoniaceae; <i>Kigelia africana (Lam.) Benth</i>	 Balamkheera	Lalkuan	6												6	2(Arboretum, Haldwani)	8	Medicinal	Tropical Africa ; Eritrea and India


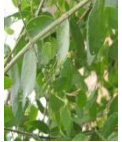







170.	Lythraceae; <i>Lagerstroemia speciosa</i> L.	 Jarul														1 (Arboretum, Haldwani); 6 (Palmetum)		7	Timber and Medicinal.	South Asia	
171.	Lauraceae; <i>Litsea glutinosa</i> (Lour.)C.B.Rob.	 Maida		Lalkuan	34											34	96 (Chakferi block Seed Orchard, Haldwani); 8 (Miyawaki, Haldwani); 70(Color& tanning experimental plot, Lalkuan) 16(mixed biodiversity plot, Lalkuan)		224	Timber and Medicinal	India; South China, Malaysia.
172.	Fabaceae; <i>Pterocarpus santalinus</i> L.	 Raktchandan	Near threatened (IUCN)														1 (Arboretum, Haldwani); 2(Mix biodiversity plot, Lalkuan)		3	Musical Instruments, Medicinal and Food colouring agent	Dry hills of the eastern Deccan from the Godawari to the Palar river
173.	Lauraceae; <i>Persea americana</i> Mill.	 Avocado															1 (Arboretum, Haldwani)		1	Edible	South central Mexico
174.	Malvaceae; <i>Thespesia populnea</i> Correa.	 Bhendi tree															1 (Arboretum, Haldwani)		1	Medicinal	Western Ghats; Myanmar
175.	Verbenaceae; <i>Vitex pinnata</i> L.	 Ahoi	Least concern (IUCN)														1 (Arboretum, Haldwani)		1	Medicinal, Fuel wood and Timber	South east asia








176.	Dipterocarpaceae; <i>Shorea robusta</i> Roth	 Sal	Least concern (IUCN)													1 (Nakshtra Vaatika, Haldwani); 2 (Arboretum, Haldwani); 1(Buddha vaatika)	4	Timber and Medicinal	Indian Subcontinent		
177.	Ulmaceae; <i>Holoptelea integrifolia</i> (Roxb.)Planch	 Kanju														13 (Arboretum, Haldwani) ; 2 (Miyawaki, Haldwani)	15	Medicinal	Indian subcontinent, Indo China and Myanmar.		
178.	Meliaceae; <i>Melia composita</i> Wall.		Least Concern (IUCN)	Lalkuan	544											544	1050 PipalParao (Progeny Trial); 300 Pipalparao (Spacing trial); 300 Chakferi block (Progeny trial); 1000 Tanda block (Progeny Trial); 106(Sal associate experimental plot, Lalkuan)	3324	Fuel wood, Timber Insecticide and Land reclamation	Tropical regions of Asia and India.	
179.	Fabaceae; <i>Dalbergia latifolia</i> Roxb,	 Kala Shisam	Vulnerable (IUCN)															594 Pipalparao (Suitability trial); 1 Arboretum, Haldwani; 940 (Kala Shishamexperimental plot, Lalkuan)	1535	Timber	Southeast India
180.	Bombacaceae; <i>Bombax ceiba</i> L.	 Semal		Lalkuan	3													96 Chakferi block (Seed Orchard); 11 (Miyawaki, Haldwani); 10 (Arboretum, Haldwani)	120	Edible Medicinal and Timber	India, Myanmar and Sri Lanka.








181.	Verbenaceae; <i>Premna</i> <i>latifolia</i> Roxb.	 Agnimantha		Haldwani	6	Lalkuan	100								106	3(Miyawaki, Haldwani); 1(Dashmool Demo Plot, Haldwani); 41(Dashmool species experimental plot, Lalkuan)		151	Medicinal	West Bengal and Northeast India.
182.	Tiliaceae; <i>Grewia</i> <i>tiliaefolia</i> Vahl.	 Dhaman														22 Pipalparao (Mixed Biodiversity Plot); 1 (Arboretum, Haldwani); 16(Sal associate experimental site, Lalkuan)		39	Medicinal and Timber	Peninsula r India; Sri Lanka; Northwest India.
183.	Rutaceae; <i>Limonia</i> <i>acidissima</i> L.	 Kaith		Lalkuan	5										5	25 Pipalparao (Mixed Biodiversity Plot); 16 (Sal associate site, Lalkuan)		46	Edible, Medicinal, Timber and Fuelwood	Bangladesh, India and Sri Lanka.
184.	Oleaceae; <i>Schrebera</i> <i>swietenioides</i> Roxb.	 Van Palas	Threatened (State Biodiversity Board)	Lalkuan	12										12	3 Pipalparao (Mixed Biodiversity Plot); 650 (VanPalas Conservation Plot, Haldwani); 7(Sal Associate Experimental plot, Lalkuan)		672	Medicinal and Timber	Near endemic to Indian sub continent.
185.	Mimosaceae; <i>Prosopis</i> <i>cineraria</i> (L.)Druce	 Shami		Lalkuan	107										107	1 (Nav GrahaVaatika); 1 (Sarv Dharmvaatika); 4 (Miyawaki, Haldwani); 3(Sal associate experimental site, Haldwani)		116	Religious, Medicinal, Fuelwood and Timber	Western Asia and Indian Subcontinent.
186.	Sapotaceae; <i>Mimusops</i> <i>elengi</i> L.	 Maulshree	Least concern (IUCN)													1 (Nakshtra Vaatika); 1(Sarv DharmVaatika)		2	Religious Medicinal Fuelwood and Timber	South Asia, SE.Asia.






187.	Anacardiaceae; <i>Mangifera indica</i> L.	 Aam	Data deficient (IUCN)	Lalkuan	11										11	1 (Nakshtra Vaatika); 1 (Sarv Dharm Vaatika); 1 (Buddha Vaatika) 1 (Arboretum, Haldwani)		15	Edible, Medicinal, Timber and Fuelwood	Indian subcontinent.
188.	Musaceae; <i>Musa paradisiaca</i> L.	 Banana														1 (Sarv Dharm Vaatika)		1	Edible Mythological and Medicinal.	
189.	Mimosaceae; <i>Albizia lebeck</i> Benth.	 Siras														1 (Arboretum Haldwani)		1	Fodder and Fuelwood	Indian subcontinent.
190.	Myrsinaceae; <i>Ardisia solanacea</i> Roxb.	 Makhmal		Lalkuan	5										5	8 (Miyawaki, Haldwani); 17 (Sal associate experimental plot, Lalkuan)		30	Edible and Medicinal	Sub Himalayan tracts from Jammu upto eastwards in Assam, Khasi hills.
191.	Apocynaceae; <i>Wrightia tinctoria</i> R.Br	 Dudhi		Lalkuan	13										13	20 (Miyawaki, Haldwani); 16 (Mixed biodiversity plot, Lalkuan)		49	Edible Medicinal and Timber	Central India and Western peninsula.
192.	Lythraceae; <i>Lagerstroemia parviflora</i> Roxb.	 Dhodi		Lalkuan	88										88	1 (Arboretum Haldwani); 69 (Color & tanning experimental plot, Lalkuan)		158	Timber	Sub Himalayan tracts, Assam and lower Bengal.
193.	Bignoniaceae; <i>Tabebuia rosea</i> DC.	 Basant Rani	Least Concern (IUCN)													16 (Mixed biodiversity plot, Lalkuan)		16	Medicinal	Native to S. America from Argentina north through Central America to Mexico.

194.	Apocynaceae; <i>Alstonia scholaris</i> (L.)R. Br.	 Chitvan	Least Concern (IUCN)													1(Arboretum Haldwani)		1	Medicinal	Native to India
195.	Euphorbiaceae; <i>Mallotus philippensis</i> Muell.Arg.	 Rohini		Lalkuan	9	Shyampur	80	Kalsi	500						589	1(Arboretum Haldwani)		590	Timber and Medicinal	Indian subcontinent.
196.	Capparaceae; <i>Crataeva religiosa</i> Forst.	 Veruna		Lalkuan	225										225	16(Mixed biodiversity plot, Lalkuan)		241	Medicinal	Peninsular India, Western India, Gangetic Plains and Eastern India up to Tripura and Manipur.
197.	Euphorbiaceae; <i>Croton tiglium</i> L.	 Jamal gota	Least Concern (IUCN)													1 (Arboratum, Haldwani) 4 (Mix biodiversity plot, Lalkuan)		5	Medicinal	Indian subcontinent.
198.	Salicaceae; <i>Xylosma longifolium</i> Clos.	 Dandal		Kalsi	200											15(Sal associate experimental site, Lalkuan)		215	Medicinal and Edible	India and Pakistan.
199.	Bombacaceae; <i>Ceiba pentandra</i> (L.) Gaertn.	 Safed semal	Least Concern (IUCN)													16(Mixed biodiversity plot, Lalkuan)		16	Medicinal	Native to South America
200.	Meliaceae; <i>Swietenia mahagoni</i>	 American mahogany	Near threatened (IUCN)													1(Sal associate experimental site, Lalkuan)		1	Medicinal	Native to Southern Mexico to Peru and Brazil.







201.	Sterculiaceae; <i>Sterculia alata</i> Roxb.	 Buddha coconut															8(Mixed biodiversity plot, Lalkuan)		8	Medicin al and Orname ntal	Tista Valley, Sikkim and lower Myanmar.	
202.	Salvadoraceae; <i>Salvadora persica</i> L.	 Meswak	Least Concern (IUCN)	Lalkuan	7												7	12(Sal associate experimental site)		19	Medicin al	India (Aravali hills)
203.	Burseraceae; <i>Garuga pinnata</i> Roxb.	 Kharpat															102	93(Sal associate experimental plot, Lalkuan)		195	Medicin al	Indian subcontin ent.
204.	Moraceae; <i>Artocarpus lacucha</i> Roxb.	 Badhal		Lalkuan	3												3	8 (Sal associate experimental site, Lalkuan)		11	Medicin al and Edible	Indian subcontin ent.
205.	Bignoniaceae; <i>Tecomella undulata</i> G. Don	 Kumantha																1(Sal associate experimental site, Lalkuan)		1	Medicin al	Shivalik tracts and Baluchist an
206.	Bignoniaceae; <i>Radermachera xylocarpa</i> K.Schum.	 Padri tree																4 (Sal associate experimental site, Lalkuan)		4	Orname ntal	Endemic (India)
207.	Caesalpiaceae; <i>Peltophorum pterocarpum</i> (D.C) K.Heyne																	2(Sal associate experimental site, Lalkuan)		2	Orname ntal	Indian subcontin ent
208.	Tiliaceae; <i>Grewia tenax</i> Fiori	 Gondni		Lalkuan	42												42	4(Sal associate experimental site, Lalkuan)		46	Medicinal	Indian subcontin ent
209.	Burseraceae; <i>Bursera microphylla</i> Gray	 Barsera	Least Concern (IUCN)															4(Sal associate experimental plot, Lalkuan)		4	Medicinal	Mexico








210.	Sapotaceae; <i>Manilkara hexandra</i> (Roxb.)Dubard	 Khirmi														3(Sal associate experimental site)		3	Medicinal	Indian subcontinent.
211.	Combretaceae; <i>Terminalia arjuna</i> Wight et Arn.	 Arjun		Lalkuan	60										60	1 (Buddha vaatika)		61	Medicinal	Central, North and South India, Sri Lanka.
212.	Apocynaceae; <i>Holarrhena anrtidysenterica</i> (L.)R.Br.	 Kutuj		Lalkuan	40										40			40	Medicinal	Indian subcontinent.
213.	Meliaceae; <i>Toona ciliata</i> M. Roem.	 Tun	Least Concern (IUCN)	Lalkuan	10	Kalika	50	Tangsa	500	Kalsi	80				640			640	Timber and Host to Orchid species	Sub Himalaya tracts, Western and Eastern Ghats, Nepal and Myanmar.
214.	Mimosaceae; <i>Leucaena leucocephala</i> (Lam.)de Wit	 Subabul		Lalkuan	6										6			6	Fodder and Timber	Tropical and subtropical North America.
215.	Caesalpiniaee; <i>Cassia siamea</i> (Lam.) Irwin et Barneby	 Kassod	Least Concern (IUCN)	Lalkuan	1										1			1	Fodder	South and Southeast Asia.
216.	Fabaceae; <i>Pithecellobium dulce</i> (Roxb.) Benth.	 Jungle jalebi	Least Concern (IUCN)	Lalkuan	22										22			22	Medicinal	Native to Mexico







217.	Myrtaceae; <i>Eucalyptus citriodora</i> K.D.Hill & L.A.S. John.	 Lemon eucalyptus	Least Concern (IUCN)	Lalkuan	39										39			39	Medicinal and Perfumery	Temperate and tropical north eastern Australia.
218.	Mimosaceae; <i>Acacia senegal</i> (L.)Br.			Lalkuan	18										18	102 Gum species experimental plot		120	Gum	West coast of India; Pakistan.
219.	Anacardiaceae; <i>Lannea coromandalica</i> (Houtt.)Merr.	 Indian Ash tree		Lalkuan	59										59	99 (Gum & dye experimental plot, Lalkuan); 15 (Mixed biodiversity plot)		173	Gum and Dye	South and Southeast Asia, Sri Lanka and Southern China.
220.	Myrtaceae; <i>Syzygium aromaticum</i> (L.)Merr.& L.M.Perry	 Laung														2(Aromatic species project site, Lalkuan)		2	Spice and Medicinal	Native to the Maluku Islands (Moluccas) in Indonesia.
221.	Ulmaceae; <i>Trema politoria</i> (Planch.) Blume	 Indian charcoal		Lalkuan	35										35			35	Medicinal and Charcoal	Nepal, Bhutan, China, Myanmar and Vietnam
222.	Dipterocarpaceae; <i>Dipterocarpus retusus</i> Blume	Hollong 	Endangered (IUCN)													1 (Bharat Vatika, Haldwani)		1	Plywood Industries	Assam and Arunchal Pradesh; China, Vietnam, Indonesia, Myanmar
223.	Pinaceae; <i>Abies spectabilis</i> (D.Don) Mirb.		Near Threatened (IUCN)													Natural Regeneration study, Munsyari			Medicinal	India Pakistan and Nepal









224.	Salicaceae; <i>Poplar sp.</i>															Numerous (Lalkuan)			Timber	
225.	Myrtaceae; <i>Eucalyptus sp</i>															Numerous (Lalkuan, Haldwani)			Timber and Paper	
226.	Boraginaceae; <i>Ehretia laevis Roxb.</i>	 Chamror	Kalsi	195	Shyampur	50	Lalkuan	15							260	50(River range Kalsi); 100 (Riparian plot); 53 (Miyawaki Haldwani); 1 (Arboretum, Haldwani); 400 approx. (Mixed biodiversity plot, Lalkuan); 195(lantana plot kalsi); 20 (riparian plot, Haridwar)	1079 approx	Medicinal	China, Bhutan, India, Pakistan and Vietnam.	
227.	Salicaceae; <i>Flacourtia ramontchi</i> L'Herit	 Indian plum	Kalsi	05											05	5 Pipalparao (Mixed Biodiversity Plot); 2 (Arboretum, Haldwani); 16 (Mixed biodiversity plot, Lalkuan)	28	Edible	Asian continent.	
228.	Moraceae; <i>Streblus asper</i> Laur.	 Dahiya	Least concern (IUCN)	Kalsi	35	Lalkuan	3								38	50(Riparian plot); 9 (Miyawaki, Haldwani) 1 (Arboretum, Haldwani); 16 (Mixed biodiversity plot, Lalkuan); 50 (Riparian plot)	164	Medicinal	India, Sri Lanka, Thailand, Malaysia and Indonesia.	

229.	Rhamnaceae; <i>Zizyphus jujuba</i> Lam.	 Red date		Kalsi	750										750			750	Edible	India and Myanmar
230.	Bixaceae; <i>Bixa orellana</i> L.	Sindoori 	Least Concern (IUCN)	Shyampur	50	Lalkuan	44	Shyampur	40						134	2(Arboretum, Haldwani); 69 (Color and tannin experimental plot, Lalkuan);50 lantana plot kalsi, 20 RET plot		305	Dyeing agent	Native to a region between northern South America and Mexico.
231.	Rutaceae; <i>Acronychia pedunculata</i> (L.) Miq.	Asper 		Shyampur	50										50			50	Edible and medicinal	Tropical regions of Asia.
232.	Fabaceae; <i>Hardwickia binata</i> Roxb.	 Anjan														40 approx (Sal associate experimental site, Lalkuan)		40	Making agricultural equipment	E. Asia and southern India.
233.	Pandanaceae; <i>Pandanus fascicularis</i>	 Kewada	Least Concern (IUCN)													4(Aromatic species project site, Lalkuan); 3 (Haldwani range)		7	Medicinal and food flavoring.	South Asia, southern India and Myanmar.
234.	Fabaceae; <i>Pterocarpus dalbergioides</i>	 Padauk	Data Deficient (IUCN)				3									1 (State trees of India)		4	Medicinal	Native range is Andaman Islands
235.	Moraceae; <i>Artocarpus incisa</i>	 Breadfruit														1 (State trees of India)		1	Edible and Medicinal	Native to the Pacific islands
236.	Thymelaceae; <i>Aquillaria agallocha</i>		Critically endangered (IUCN)													1 (State trees of India)		1	Medicinal	Native to southeast Asia

237.	Styracaceae; <i>Styrax benzoin</i> Dryand.	 Loban tree														4 (Other trees, Lalkuan)		4	Medicinal and resin	Sumatra in Indonesia
238.	Euphorbiaceae; <i>Sapium sebiferum L.</i>	Makhan charbi 		Dwarson	50											1(Arboretum Gaja);43 (Miyawaki Experiment)		94	Used in Manufacturing candles and making soaps	Native to China
239.	Pinaceae <i>Picea smithiana</i> (Wall.)Boiss	Spruce 	Least Concern (Population decreasing)	Patalthod	100									100			100	Medicinal	Western Himalayas From Afganistan to Nepal and Bhutan	
240.	Burseraceae; <i>Guggal commiphora</i>	 Indian bdellium tree																	Aromatic and Medicinal	Native to India
241.	Annonaceae; <i>Annona reticulata</i>	 Bullock's Heart		Haldwani	5											1 Ramayan Vaaatika		6	Edible and Medicinal	Native to Mexico, Central America, and South America
242.	Annonaceae; <i>Annona muricata</i>	 Soursop		Haldwani	5											1 Ramayan Vaaatika		6	Edible and Medicinal	Native to Central and tropical South America

243.	Bignoniaceae; <i>Millingtonia hortensis</i>	 Indian cork tree	Haldwani	6		Lalkuan	5								11			11	Ornamental	Native to South Asia & South East Asia
244.	Apocynaceae; <i>Calotropis gigantea</i>	 Crown Flower	Lalkuan	5											5			5	Medicinal	Native to Indian Sub Continent
245.	Simaroubaceae; <i>Ailanthus excelsa</i>	 Tree of Heaven	Haldwani	5											5			5	Medicinal	Found in India and Sri Lanka
246.	Euphorbiaceae; <i>Jatropha curcas</i>	 Barbados nut	Haldwani	6											6			6	Medicinal	Native to Mexico and Central America
247.	Fabaceae; <i>Acacia leucophloea</i>	 Reonja	Haldwani	6											6			6	Edible and Medicinal	Native to Southeast Asia
248.	Fabaceae; <i>Acacia auriculiformis</i>	 Northern black wattle														8 (Pollinator Park)		8	Ornamental and Furniture making	Native to Australia, Indonesia, and Papua New Guinea.
249.	Sapindaceae; <i>Aesculus assamica</i>	 East Himalayan Horse Chestnut	Haldwani	6														6	Ornamental	Native to India

250.	Lecythidaceae; <i>Barringtonia acutangula</i>	 Freshwater Mangrove	Haldwani	10														10	Edible and Medicinal	Native to Southern Asia
251.	Fabaceae; <i>Cassia javanica</i>	 Pink shower	Haldwani	10														10	Medicinal and Timber	Native to Southeast Asia
252.	Myrtaceae; <i>Corymbia citriodora</i>	 Spotted gum	Haldwani	10														10	Armatic and Medicinal	Endemic to north eastern Australia.
253.	Fabaceae; <i>Erythrina crista galli</i>	 Cockspur coral tree	Haldwani	10														10	Medicinal	Native to Argentina, Uruguay, southern Brazil and Paraguay.
254.	Podocarpaceae; <i>Podocarpus macrophyllus</i>	 Buddhist pine	Haldwani	10														10	Ornamental	Native to Southern Japan
255.	Sterculiaceae; <i>Pterygota alata</i>	 Buddha Coconut	Haldwani	10														10	Medicinal	Native to Indian Subcontinent


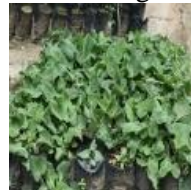

256.	Cupressaceae; <i>Taxodium distichum</i>	 Bald cypress		Haldwani	10													10	Timber and Medicinal	Native to Southeastern United States
257.	Salicaceae; <i>Populus deltoides</i>	 Eastern cottonwood		Haldwani	10													10	Timber	Native to North America
258.	Caesalpiniaceae; <i>Peltophorum ferrugineum</i>	 Copperpod		Haldwani	10													10	Ornamental and Fodder	Native to tropical southeastern Asia
259.	Euphorbiaceae; <i>Trewia nudiflora</i>	 False White Teak		Haldwani	10													10	Ornamental	Native to Indian Subcontinent
260.	Calophyllaceae; <i>Mammea suriga</i>	 Surangi		Haldwani	10													10	Aromatic	Endemic to Western Ghats
261.	Dipterocarpaceae; <i>Vateria indica</i>	 White dammar	Vulnerable (IUCN); Critically Endangered (Indian Biodiversity Portal)	Haldwani	10													10	Medicinal, Furniture making and Source of resin	Endemic to Western Ghats
262.	Clusiaceae; <i>Garcinia indica</i>	 Kokum		Haldwani	10													10	Ornamental and Edible	Native to India
263.	Dipterocarpaceae; <i>Hopea wightiana</i>	 Pav	Endangered (IUCN)	Haldwani	10													10	Timber and Fuelwood	Endemic to the Western Ghats









264.	Myrtaceae; <i>Syzygium samarangense</i>	 Chambakka		Haldwani	10													10	Edible and Aromatic	Natuveto Malay Peninsula.	
265.	Myrtaceae; <i>Syzygium hemisphericum</i>	 Bhedas		Haldwani	10													10	Medicinal	Native to India	
266.	Rutaceae; <i>Citrus limetta</i>	 Mosami		Haldwani	10													10	Edible	Native to southern regions of Iran	
267.	Cupressaceae; <i>Cunninghamia lanceolata</i> (Lamb) Hook		Least concern (as per IUCN)	Kalika	2	Dwarson	4										6	6	Ornamental	Native to China	
268.	Sapindaceae; <i>Aesculus indica</i>	 Pangar		Kalika	100	Dwarson	800											900	Medicinal	Near Endemic	
269.	Myricaceae; <i>Myrica sapida</i>	 Shillong kaphal																363 (Dwarson block)	363	Fuelwood and fodder	Near Endemic
270.	Euphorbiaceae <i>Mallotus nudiflorus</i>	 Gutel																30 (Riparian plot)	30	Medicinal	Indian Subcontinent, SE Asia
271.	Anacardiaceae; <i>Anacardium occidentale</i>	 Kaju		Haldwani	4													4	4	Edible	Tropical America









II .Herb Species









Herb species are being conserved across all the Research Ranges with Aromatic Herbs specifically being conserved at Gaja and Haldwani Range:





I. Aromatic:









S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery										Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name															Total
				1		2		3		4		5							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Valerianaceae; <i>Nardostachys jatamansi</i> DC.	 Jatamansi	Threatened (State Biodiversity Board); Critically endangered (IUCN) ;Collection from wild Closed for the time being by Uttarakhand Government	Mandal	100	Tangsa	20	Devvan	05					125	1400 (RET demonstration plot , Mana vanpanchayat); 200(RET demonstration plot, Harkot, Munsyari)	23	1548	Medicinal and Aromatic	Endemic to Indian Himalayan region.
2.	Valerianaceae; <i>Valeriana Jatamansi</i> Jones	Sameva/tagar 	Collection from wild Closed for the time being by Uttarakhand Government	Mandal	100	Dwars on	80	Patalthod	1950	Devvan	02	Kalika	50	2182	50 (RET demonstration plot, Harkot, Munsyari)		2232	Medicinal and Aromatic	Indian Himalayan Region
3.	Amaryllidaceae; <i>Allium stracheyi</i> Baker	Faran 	Vulnerable (ENVIS endemic and threatened Taxa) and Vulnerable (Indian Biodiversity Portal)	Mandal	150	Patalhod	500	Devvan	03					653	5 pars (Mana vanpanchayat); 150 (RET demonstration plot, Harkot, Munsyari); 50 Bhujiyaghat(Aromatic plants); 36 (Aromatic species project site, Lalkuan)		883	Spice and Aromatic	Endemic to Himalaya







4.	Zingiberaceae; <i>Hedychium spicatum</i> Han. ex Sm.	Kapur Kachri 		Mandal	3600	Tangsa	250	Patalthod	1900	Devvan	03			5753	100 Bhujiyaghat (Aromatic plants); 100 (RET demonstration plot, Harkot, Munsyari); 50 (Riparian plot, Shyampur)		6003	Medicinal and Aromatic	Near Endemic
5.	Amaryllidaceae; <i>Allium wallichii</i> Kunth	Duna 		Mandal	33	Kalika	25	Devvan	02					60			65	Spice and Aromatic	India, Nepal, Bhutan and Myanmar.
6.	Apiaceae; <i>Selinum Wallichianum</i> (DC.) Raizada & H.O. Saxena	Bhootkeshi 		Mandal	15	Dwarson	5							20			20	Aromatic	Himalayas
7.	Asteraceae; <i>Spilanthes oleracea</i> L.		Vulnerable (As per Indian biodiversity portal)	Mandal	1600	Kalsi	90	Devvan	420	Dwarson	20			2130	25(Aromatic species project site, Lalkuan) 20(R.E.T Devvan)		2155	Medicinal and Aromatic	Native to the tropics
8.	Asteraceae; <i>Artemisia maritima</i> L.exHook.f.	Kudza 		Dwarson	258									258	Mana Nursery 20		305	Medicinal and Aromatic	France, Italy, Russia and India.
9.	Zingiberaceae; <i>Elettaria cardamomum</i> (L.) Maton	 Chhotiilaychi													36(Aromatic species project site, Lalkuan), 2 (Gaja) Wild spices		38	Spices and Medicinal	Southern India
10.	Zingiberaceae; <i>Amomum subulatum</i> Roxb.	 Badi ilaechi		Kalsi	50									50	19(Aromatic species project site, Lalkuan)		69	Spices and Medicinal	Eastern Himalaya
11.	Lamiaceae; <i>Mentha piperata</i> L.	 Pipermint		Kalsi	150	Patalthod	590	Dwarson	70	Devvan	06			816	20(Aromatic species project site, Lalkuan)		836	Medicinal and Aromatic	Indigenous to Europe and the middle East.

12.	Lamiaceae; <i>Mentha spicata</i> L.	 Pudhina		Kalsi	80									80	40(Aromatic species project site, Lalkuan) 23(Aromatic species project site, Lalkuan)		142	Medicinal and Aromatic	Europe and Southern Asia.
13.	Lamiaceae; <i>Mentha citrata</i> var. <i>Kiran</i>														7(Aromatic species project site)		7	Tea and perfumery	
14.	Acoraceae; <i>Acorus calamus</i> L.	 Bach	Least concern (IUCN) ; Collection from wild closed for the time being by Uttarakhand Government	Kalsi	120	Patalhod	450	Tangsa	80	Kalika	50	Devvan	06	626	500 (Medicinal conservatory, Haldwani); 100 (RET plot and Riparian plot, Shyampur); 55 (Aromatic species project site, Lalkuan)		1926	Medicinal	India, Japan, China, Pakistan and Europe.
15.	Zingiberaceae; <i>Curcuma aromatic</i> Salisb.	Van haldi 		Dwarsan	50	Kalika	15							65	80(Aromatic species project site, Lalkuan)		145	Medicinal and Aromatic	Eastern Himalayas and Western Ghats.
16.	Apiaceae; <i>Angelica glauca</i>	Choru 	Endangered (Threatened Plants of India, BSI)	Patalhod	12	Dwarsan	5	Devvan	02	Mandal	50			19	20(RET demonstration plot, Harkot, Munsyari); 20 (Mana nursery, Gopeshwar)		109	Medicinal and Aromatic	Endemic to Himalaya (IHR)
17.	Amaryllidaceae; <i>Allium ursinum</i> L.	 Van lehsun		Kalsi	40	Lalkuan	10							50			50	Medicinal and Edible	Europe and Northern Asia.
18.	Asteraceae; <i>Jurinea macrocephala</i> (Royle)C.B.Clarke	 Dhoop	Critically Endangered BSI (Flora Of Uttarakhand Vol, 1)	Devvan	400									400	4 (Mana vanpanchayat); 6 (Mana Nursery)		410	Aromatic	Indian Himalayan region.
19.	Zingiberaceae; <i>Alpinia galangal</i> (L.)Willd.	Kulinj 		Lalkuan	10									10	100 (Bhujiyaghat Aromatic plants); 100 (RET plot, Shyampur)		210	Medicinal	Indonesia.





20.	Lamiaceae; <i>Melissa officinalis</i> L.	Lemon balm 												25 Bhujiyaghat(Aromatic plants); 10(Aromatic species project site, Lalkuan)		35	Medicina, Flavouring agent	Native to south central Europe, the Mediterranean Basin, Iran, and Central Asia.	
21.	Lamiaceae; <i>Pogostemon patchouli</i> Benth.	Patchouli 												50Bhujiyaghat(Aromatic plants); 25(Aromatic species project site, Lalkuan)		75	Medicinal and Perfumery	Pakistan, India, China, Japan and Myanmar.	
22.	Lamiaceae; <i>Coleus barbatus</i> Andrews	Patharchur 												20 Bhujiyaghat (Aromatic plants)		20	Medicinal	Indian Himalayan Region	
23.	Geraniaceae; <i>Geranium robertianum</i> L.	Geranium 												10 Bhujiyaghat(Aromatic plants); 5 (Aromatic species project site, Lalkuan)		15	Aromatic	Europ and part of Asia.	
24.	Lamiaceae; <i>Coleus amboinicus</i> Lour.	Van ajwain 	Lalkuan	8									8	10 Bhujiyaghat(Aromatic plants) 100 (RET plot, Shyampur); 24 (Aromatic species project site, Lalkuan)		142	Medicinal and spice	India; and Africa	
25.	Saururaceae; <i>Houttuynia cordata</i> Thunb.	 Fishmint	Mandal	15										15	30(Aromatic species project site, Lalkuan)		45	Medicinal and Cooking	Southeast Asia
26.	Lamiaceae; <i>Origanum majorana</i> L.	 Sweet marjoram	Lalkuan	10										10	32(Aromatic species project site, Lalkuan)		42	Aromatic	Mediterranean regions and Indian Himalayan Region.
27.	Asteraceae; <i>Artemisia annua</i> L.	 Sweet wormwood													13(Aromatic species project site, Lalkuan)		13	Aromatic	Temperate Asia.






28.	Piperaceae; <i>Piper logum</i> L.	 Pipli		Kalsi	150									150			150	Medicinal and Spice	Indo Malaya region and India.
29.	Apiaceae; <i>Heracleum candicans</i> Lindl.	 Patrala		Patalthod	550									550			550	Medicinal and Spice	Near Endemic
30.	Lamiaceae; <i>Mentha arvensis</i> L.	 Pudina		Patalthod	250									250	65 (Aromatic species project site, Lalkuan)		315	Medicinal and Edible	Central Asia, Himalaya, Europe and N America.
31.	Zingiberaceae; <i>Curcuma amada</i> Roxb.	 Aamahaldi													100 (Riparian plot, Shyampur); 50 Bhujiyaghat (Aromatic plants); 20 (Medicinal conservatory, Haldwani); 10(Aromatic species project site, Lalkuan)		180	Medicinal and Aromatic	East Indian Distribution
32.	Zingiberaceae; <i>Zingiber zerumbet</i> (L.)Roscoe ex Sm.	 Shampoo ginger	Data deficient (IUCN)												20 (RET plot, Shyampur)		20	Medicinal	Asia
33.	Rutaceae; <i>Boenninghausenia albiflora</i> (Hooker) Reich. ex Meisn.	 Dampate				Tangsa	15							15			15	Aromatic	Nepal, Bhutan, China, and Myanmar
34.	Lamiaceae; <i>Plectranthus rugosus</i> Wall. ex Benth.	 Kurkha		Saritalaal	76									76			76	Medicinal	Indian Himalayan Region, Southern Ghats, and Nilgiri region.

35.	Lamaceae; <i>Thymus serpyllum</i> L.			Dwars on	1									1	25 Bhujiyaghat (Aromatic plants); 5 (Medicinal conservatory, Haldwani)		31	Spice	Native to most of Europe and North Africa.
36.	Agavaceae; <i>Polianthes tuberosa</i> L.	 Rajanigandha													25 (Aromatic species project site, Lalkuan)		25	Medicinal and Perfumery	Mexico
37.	Asteraceae; <i>Tanacetum dolichophyllum</i> (Kitam.)Kitam.	 Dhup gugul		Mandal	20	Patalhod	20							40			40	Medicinal and Aromatic	Pakistan , Nepal and India
38.	Lamiaceae <i>Lavandula angustifolia</i>	 Lavander		Patalhod	20									20			20	Medicinal	Mediterranean region
39.	Iridiaceae; <i>Crocus sativus</i>	 Kesar		Kalika	7									07			07	Medicinal and Spice	Iran, India, Greece, Morocco, Spain, Italy, Turkey, Pakistan, Azerbaijan, China, and Egypt.
40.	Asteraceae; <i>Matricaria chamomilla</i>	 Chamomile													10 (Aromatic species project site, Lalkuan)		10	Medicinal and Aromatic	Exotic
41.	Zingiberaceae; <i>Etilingera elatior</i>	 Torch ginger													10 (Aromatic Project Site)		10	Medicinal	Native to Indonesia.
42.	Costaceae; <i>Costus stenophyllus</i>	 Bamboo Ginger													10 (Aromatic Project Site)		10	Ornamental	Native to Costa Rica

43.	Zingiberaceae; <i>Hedychium flavescens</i>	 Yellow Ginger Lily												2 (Aromatic Project Site)		2	Medicinal and Aromatic	Native to the Himalayas, Sichuan, and northern Vietnam
44.	Amaryllidaceae ; <i>Allium moly</i>	 Yellow garlic	Lakulan	9									9			9	Medicinal and Ornamental	Found in Spain and Southern France
45.	Apiaceae; <i>Trachyspermum ammi</i>	 Ajwain	Lakulan	10									10			10	Medicinal	Native to Egypt Afghanistan, Pakistan, and India.
46.	Apiaceae; <i>Foeniculum vulgare</i> Mill.	 Fennel												2 Wild spices (Gaja)		2	Spice	Indigenous to the Mediterranean
47.	Apiaceae; <i>Carum carvi</i> L.	 Kala jeera	Mandal	6	Patalhod	900	Dwarson	5					906	100(RET demonstration plot, Harkot, Munsyari)		1011	Medicinal and Aromatic	Western Asia, Europe and N Africa.
48.	Plantaginaceae. <i>Thymus linearis Benth.</i>	Van ajwain 					Devvan	45				45		45		45	Aromatic and Medicinal	Widespread in Asia






II. Other Herbs

S.No.	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery														Total	Experiment Site	Preserv ation Plot	Grand Total	Use	Native Region
				Nursery Name																			
				1		2		3		4		5		6		7							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant								
1.	Ranunculaceae; <i>Aconitum hetrophyllum</i> Wall. ex Royle	 Atees	Endangered (IUCN); Threatened (State Biodiversity Board), Collection from wild closed for time being by Uttarakhand Government)	Mandal	152	Tangsa	30	Devvan	3157	Kalika	15							197	150 (Mana vanpanchayat); 400 (RET demonstration plot, Harkot, Munsyari); 21 (RET Devan)		732	Medicin al	Endemi c to Indian Himala yan Region
2.	Ranunculaceae; <i>Aconitum balfouri</i> Stapf	Meetha 	Vulnerable (IUCN); Threatened(State Biodiversity Board); Collection from wild closed for time being by Uttarakhand Government																50 (Mana vanpanchayat); 20 (RET demonstration plot, Harkot, Munsyari)		70	Medicin al	Broadly Endemi c to Uttarak hand
3.	Podophyllaceae; <i>Podophyllum hexandrum</i> Royle	Ban kakri 	Endangered (Research paper)	Mandal	1	Devva n	10	Dwar son	10									111	4 (Mana vanpanchayat); 20(RET demonstration plot, Harkot, Munsyari)		135	Medicin al	Indian Himala yan Region.
4.	Geraniaceae; <i>Geranium wallichiana</i> D. Don ex Sweet			Mandal	20	Patal hod	50											20			70	Medicin al	Near Endemi c



5.	Liliaceae; <i>Lilium polyphyllum</i> Don	 Kshira Kakoli	Critically endangered (IUCN); Collection absolutely Prohibited by Uttarakhand Government	Mandal	1														1	Medicinal	Near Endemic	
6.	Rosaceae; <i>Potentilla fulgens</i> Wall.ex Hook	Bajradanti 		Mandal	200	Kalika	104	Dwarsor	150	Devvar	250	Patalhod	3700					4404	300 (Mana vanpanchayat); 73 (R.E.T Plot, Devvan); 2 (Bhujiyaghat Aromatic plants)	4479	Medicinal	Nepal, Pakistan, China
7.	Saxifragaceae; <i>Bergenia ciliata</i> (How.) Sterb.	Pashanbedh 	Vulnerable International Journal of Biodiversity Science and Management; Limited collection allowed by Uttarakhand Government	Mandal	200	Kalsi	150	Patalthod	1410	Devvan	05							1765	100 (Mana vanpanchayat)	1865	Medicinal	Near endemic
8.	Saxifragaceae; <i>Bergenia stracheyi</i> (Hook.f. & Thoms.) Engl	 Pashanbedh		Mandal	20													20		20	Medicinal	Near Endemic
9.	Scrophulariaceae; <i>Picrorhiza kurrooa</i> Royle ex Benth.	Kutaki 	Endangered IUCN CITES Appendix II	Mandal	3000	Patalhod	3450	Devvan	1300	Dwarson	5							7750	250 (Mana vanpanchayat); 50 (RET demonstration plot, 65 (R.E.T Devvan)	8015	Medicinal	East Asia; Himalayas







10.	Polygonaceae; <i>Rheum moorcroftianum</i> Royle	 Dolu	Vulnerable (ENVIS); Collection from wild closed for the time being by Uttarakhand Government	Mandal	86	Patalhod	24										110	80 (Mana vanpanchayat); 50 (RET demonstration plot, Harkot, Munsyari)		240	Medicinal	Eastern Europe; temperate regions of Asia.	
11.	Zingiberaceae; <i>Roscoeia purpurea</i> Sm,	 Kakoli		Mandal	30	Patalhod	400	Devvan	05									435	50 (RET demonstration plot, Harkot, Munsyari); 4 (Gaja) Wild flowers		489	Medicinal	Indian Himalayan Region and Nepal.
12.	Iridaceae; <i>Iris kemaonensis</i> Wall. ex D. Don																		Multiple (Mana vanpanchayat)			Medicinal	China, Bhutan and India.
13.	Liliaceae; <i>Paris polyphylla</i> Sm.	 Ban Satuwa	Endangered (The International Journal of Biodiversity Science and Management); Collection from wild closed for the time being by Uttarakhand Government	Mandal	65	Kalika	10											75	Medicinal		75	Medicinal	China, Taiwan and Indian subcontinent.
14.	Liliaceae; <i>Polygonatum cirrhifolium</i> (Wall.) Royle	 Maha Meda	Collection from wild closed for the time being by the Uttarakhand Government	Mandal	20	Tangsa	40	Patalhod	700	Dwarson	20							780	50 (RET demonstration plot, Harkot, Munsyari)		810	Medicinal	Indian Himalayan Region

15.	Liliaceae; <i>Polygonatum verticillatum</i> (L.)All.	 Meda	Collection closed for the time being by Uttarakhand Government	Mandal	60	Tangsa	45	Patalhod	700	Dwarson	20	Saritaal	5					830	50 (RET demonstration plot, Harkot, Munsyari)		608	Medicinal	Indian Himalayan Region
16.	Liliaceae; <i>Trillium govanianum</i> Wall. ex Royle	 Nagchatri	Endangered IUCN	Mandal	50	Kalika		10										60			60	Medicinal	Endemic to Indian Himalayan Region
17.	Asteraceae; <i>Inula racemosa</i> Hook.f.	 Pushkermool		Tagsa	12	Dwarson	2											14			14	Medicinal	Western Himalayas of Afghanistan, Kashmir, Nepal and Pakistan
18.	Asteraceae; <i>Cichorium intybus</i> L.	 Kasani	Least concern (IUCN)	Tangsa	130	Dwarson	439	Kalsi	85	Patalhod	250	Haldwani	128	Lalkuan	10	Kalika	10	1052	300 (Medicinal conservatory, Haldwani); 500 (Kaasni Gene bank, Haldwani)		1852	Medicinal	Africa, Asia and Europe
19.	Amaranthaceae; <i>Achyranthus aspera</i> L.	 Apamarg		Tangsa	35	Gaja nursery beds	2											37	1 (Nav GrahaVaatika)		38	Medicinal	Indigenous to South East Asia and Africa
20.	Solaniaceae; <i>Withania somnifera</i> (L.) Dunal	 Aswgandha		Kalika	8	Tangsa	300	Lalkuan	11	Dwarson	10							329	50 (Medicinal conservatory, Haldwani)		379	Medicinal	Drier parts of India

21.	Euphorbiaceae; <i>Phyllanthus niruri</i> L.					Tangsa	35	Patalthod	50								85			85	Medicinal	Tropical & Subtropical America
22.	Asparagaceae; <i>Urginia indica</i> (Roxb.) Benth	Ban Pyaj 		Mandal	30	Dwarson	100	Kalika	20								150	100 (RET plot, Shyampur); 2(Gaja) wild spices		402	Medicinal	Indian subcontinent, India, Nepal, Indo China and Myanmar.
23.	Asteraceae; <i>Sassurea costus</i> (Falc.) Lipsch.	Koot/Kushta 	Critically endangered (IUCN); Endangered (BSI); Endangered (Indian Biodiversity Portal) included in CITES Appendix I	Mandal	15	Tangsa	350	Patalthod	650	Devvan	05	Kalika	853	Dwarson	15		1304	50 (Manavanpanchayat); 50 RET demonstration plot, Harkot, Munsyari); 2 Bhujiyaghat(Aromatic plants)		1406	Medicinal	Endemic to Himalaya (IHR)
24.	Gentianaceae; <i>Gentiana kurroo</i> Royle	Trayman 	Critically endangered (IUCN); Threatened (State Biodiversity Board) ; Collection from wild closed for time being by Uttarakhand Government	Devvan	957	Tangsa	14	Patalthod	15	Mandal	15	Kalika	10	Dwarson	20		1031	23 (R.E.T Devvan); 15 (Manavanpanchayat); 15 (RET plot Munsyari)		1084	Medicinal	Native to Indian subcontinent,
25.	Asparagaceae; <i>Chlorophytum borvivilianum</i>	Safed musli 	Critically endangered (IUCN)	Kalika	857	Dwarson	100										957	45(Aromatic species project site, Lalkuan)		1002	Medicinal	Native of South Africa
26.	Nyctaginaceae; <i>Boerhavia diffusa</i> L. Nom. Cons.			Kalsi	40												40	80 Medicinal conservatory, Haldwani)		120	Medicinal	India, South American and African continents.
		Punarnva																				

27.	Plantaginaceae; <i>Bacopa monnieri</i> (L.)Pennell	 Brahmi	Least concern (IUCN)	Kalsi	420	Shya mpur	50									470	15000 (Medicinal conservatory, Haldwani)		15470	Medicinal	India, Nepal, China, Taiwan and Vietnam.
28.	Asteraceae; <i>Eclepta alba</i> (L.) Hassk.	 Bhrangraaj	Least concern (IUCN)	Kalsi	200											200			200	Medicinal	India, Nepal, China, Thailand, and Brazil.
29.	Plantaginaceae; <i>Plantago major</i> L.	 Isabgol	Least concern (IUCN)	Kalsi	80	Kalika	25									105	200 (Medicinal conservatory, Haldwani)		305	Medicinal	India, Afghanistan, Australia, Canada, China
30.	Zingiberaceae; <i>Curcuma caesia</i> Roxb.	 Kali haldi		Kalsi	55	Devvan										55	50 (RET plot, Shyampur); 50Bhujiyaghat(Aromatic plants); 2 (Aromatic species site, Lalkuan)		157	Medicinal	Northeast India
31.	Lamiaceae; <i>Plectranthus rotundifolius</i> Spreng.	 Chinese potato		Kalsi	140	Devvan										140			140	Medicinal	Tropical Africa and Asia, India, Sri Lanka
32.	Asparagaceae; <i>Chlorophytum tuberosum</i> (Roxb.) Bake	Hari musli 	Least concern (IUCN)	Kalsi	540											540			540	Medicinal	India, Nepal, Myanmar, Sri Lanka and Uganda.







33.	Liliaceae; <i>Cardiocrinm giganteum</i> (Wall.) Makino	Himalayan lily 		Mandal	15											15	2(RET demonstration plot, Harkot, Munsyari)		2	Orname ntal	India, China, Nepal, Pakista n.
34.	Plantaginaceae; <i>Digitalis purpurea</i> L.	Tiluspi 		Patalth od	170	Dwars on	5									175	50(RET demonstration plot, Harkot, Munsyari)		225	Medicin al	Europe, parts of North Americ a.
35.	Asteraceae; <i>Echinacea purpurea</i> L.	 Echinacea															50(Medicinal conservatory)		50	Medicin al	North Americ a
36.	Gentianaceae; <i>Swertia chirayita</i> (Roxb. ex Fleming) Karsten	Chirayta 	Restricted from collection in wild (State Medicinal Plant Board, Uttarakhand) ; Collection from wild closed for time being by Uttarakhand Government	Patalth od	2800	Mand al	60									2860	50(RET demonstration plot, Harkot, Munsyari); 4Bhujiyaghat (Aromatic plants)		2914	Medicin al	India, Nepal and Bhutan.
37.	Crassulaceae; <i>Bryophyllum pinnatum</i> (Lam.)O ken	Patharchatta 		Shyam pur	200											200	50 (RET plot, Shyampur)		250	Medicin al	Native to Madaga scar.
38.	Costaceae; <i>Costus pictus</i> D. Don	Insulin plant 															20 (RET plot, Shyampur)		20	Medicin al	Native to Mexico.
39.	Colchicaceae; <i>Gloriosa superb</i> L.	Kalihari 	Least concern (IUCN); Collection from wild closed for the time being by Uttarakhand Government.	Kalika	10	Patal hod	3									20	20 (RET plot, Shyampur); 20(Medicinal conservatory, Haldwani)		43	Medicin al	Indian Sub continent

40.	Lamiaceae; <i>Eremostachys superba</i> Royle ex Benth.	Moonch 	Threatened (State Biodiversity Board)														20 (RET plot, Shyampur); 6 (Medicinal conservatory, Haldwani)		26	Medicin al	Near Endemi c to Shiwali ks or NW India.	
41.	Zygophyllaceae; <i>Tribulus terrestris</i> L.	 Gokharu															1100(Dashmoo l species experimental plot, Lalkuan)		1100 (appro x.)	Medicin al	Native of the Mediter ranean region	
42.	Asteraceae; <i>Arctium lappa</i> L.	 Beggar's buttons		Devvan	663											663	40 (R.E.T Devvan)		703	Medicin al	Native to norther n Europe	
43.	Acanthaceae; <i>Andographs paniculata</i> (Burm.f.)Nees	 Kalmegh		Kalsi	80											80	36 (Medicinal conservatory, Haldwani)		116	Medicin al	India and Sri Lanka.	
44.	Asphodelaceae; <i>Aloe barbadensis</i> Mill.	 Ghratkumari		Kalsi	50														60	Medicin al	Arabian Peninsu la	
45.	Solanaceae; <i>Solanum nigrum</i> L.			Shyam pur	20												20	2 (Wild berries and fruits Gaja)		22	Medicin al	Native to Eurasia and introduc ed in the Americ as, Austral asia, and South Africa





46.	Solanaceae; <i>Solanum xanthocarpum</i> Schrad.& H. Wendl.	 Kantkari															50 (Medicinal conservatory, Haldwani); 800 approx.(Dashmool species experimental plot,Lalkuan)		850	Medicinal	Central Himalaya	
47.	Urticaceae; <i>Urtica dioca</i>	Bicchu Ghas 	Dwarson	108	Devvan	15											123		123	Medicinal	Native to Europe, Asia, northern Africa, and North America	
48.	Europhobeaceae ; <i>Euphorbia hirta</i>	 Dudhi Ghas	Dwarson	60	Patalhod	100											60		160	Medicinal	Native to America	
49.	Fabaceae; <i>Trifolium alexandrinum</i>	 Barsim Ghas	Dwarson	500													500			Fodder	Native to western Asia.	
50.	Asparagaceae; <i>Ophiopogon japonicas</i> (L.f.) Ker Gawl.	Kali ghas 	Dwarson	70														5 (Grass Demonstration Plot, Shyampur)		75	Medicinal	China, Japan, India and Vietnam.
51.	Ranunculaceae; <i>Aconitum leave</i> Royle		Mandal	10													10		10	Medicinal	India, Pakistan and Nepal	

52.	Violaceae; <i>Viola pilosa</i> L.			Mandal	50	Kalika	25										75			75	Medicinal	Nepal, China and Pakistan	
		Vanpsa																					
53.	Rubiaceae; <i>Rubia cordifolia</i> L.			Mandal	20	Patalhod	100	Devvan	04									124			124	Medicinal	Widespread in northern hemisphere
		Manjith																					
54.	Ephedraceae; <i>Ephedra gerardiana</i> Wall. ex Stapf		Critically endangered Research Paper	Mandal	30	Gaja	2											32			32	Medicinal	Tajikistan, Nepal, China and India
		Somlata																					
55.	Plantaginaceae; <i>Digitalis purpurea</i> L.			Tangsa	40													40			40	Medicinal	Temperate Europe.
		Tilpushpi																					
56.	Lamiaceae; <i>Ajuga parviflora</i> Benth.			Kalika	50													50			50	Medicinal	Near Endemic
		Ratpatiya																					
57.	Liliaceae <i>Clintonia udensis</i>			Patalhod	30													50			50	Edible	East Asia – Himalayas to S.W. China
58.	Genetianaceae <i>Gentiana argentea</i>			Patlthod	50													50			50	Beverages	Himalayas

59.	Asteraceae; <i>Taraxacum officinale</i>		Patalthod	50	Devvan	03										53			53	Medicinal	Nepal, Chiana, India
60.	Lamiaceae <i>Ajuga brachystemon</i>		Patalthod	50	Mandal	20										70			70	Medicinal	Endemic to Himalaya
61.	Violaceae <i>Viola spp.</i>		Patalthod	100												100			100	Medicinal	Asia and Europe
62.	Zingiberaceae; <i>Roscoea alpina</i>		Patalthod	100	Mandal	30										130	4(Wild flowers Gaja)		134	Medicinal	Native to the Himalaya
63.	Genetianaceae; <i>Gentiana membranulifera</i>		Patalthod	50												50			50	Beverages	E. Afganistan to Himalaya
64.	Scrophulariaceae; <i>Verbascum thaspus</i>		Patalthod	30	Devvan	02										32			32	Medicinal	Europe, Africa and Asia.
65.	Urticaceae; <i>Pouzolzia zyelanica</i>		Patalthod	100												100			100	Edible and Medicinal	E. Asia to SouthEast Asia

66.	Polygonaceae <i>Oxyria digyna</i>	 Chaktali	Patalthod	10														10			10	Medicinal	Native to Arctic region and Mountainous part of Northern Hemisphere
67.	Rosaceae; <i>Potentilla polyphylla</i>	 Many leaf Cinquefoil	Patalthod	100																	100	Medicinal	Himalayas from Uttarakhand to Bhutan
68.	Asphodelaceae; <i>Aloe nyeriensis</i>		Shyam pur	05																	05	Medicinal	East tropical Africa central Kenya.
69.	Begoniaceae; <i>Begonia dioica</i>		Devvan	05																	05	Ornamental	Himalayas, from Pakistan to Sikkim
70.	Hypericaceae; <i>Hypericum elodeoides</i>		Devvan	05																	05	Medicinal	Kashmir to Southwest China and Burma.
71.	Urticaceae; <i>Girardinia diversifolia</i>	 Himalayan nettle	Devvan	05																	05	Medicinal	Uttarakhand, Himachal Pradesh and Jammu & Kashmir and also in vast part of China.





72.	Boraginaceae; <i>Cynoglossum lanceolatum</i>	 Lanceleaf forget me not		Devvan	03														03	Medicinal	Africa, Western. Asia and Himalayas.
73.	Ranunculaceae; <i>Thalictrum foliolosum</i>	 Mamiraa		Devvan	03	Mandal	5												08	Medicinal	Himalayan range across India, Nepal, bhutan, SE Tibet and Burma .
74.	Lamiaceae ; <i>Ajuga bracteosa</i>	 Nilkanthi		Devvan	02														02	Medicinal	Kashmir to Nepal
75.	Caesalpinioideae ; <i>Cassia tora</i>	 Panwar		Haldwani	10														10	Medicinal	Native to Central America
76.	Araceae; <i>Aglaonema commutatum</i>	 Chinese Evergreen		Haldwani	10														10	Ornamental	Native to Philippines
77.	Asparagaceae; <i>Aspidistro elatior</i>	 Cast iron plant		Haldwani	10														10	Ornamental	Native to Japan
78.	Cleomaceae; <i>Cleome viscosa</i> Linn.	 Asian spider flower																2(Gaja) wild spices	2	Spice	Native to Indian Ocean Islans








79.	Lamiaceae; <i>Perilla frutescens</i> (L.)	 Perilla																2(Gaja) wild spices		2	Edible	Native to India
80.	Malvaceae; <i>Pavonia odorata</i> Willd.																	2(Gaja) nursery beds		2	Medicinal	Native to Asia
81.	Ranunculaceae; <i>Aquilegia pubiflora</i> Wall.		Mandal	4														4		4	Medicinal	Pakistan, Nepal and India
82.	Dioscoreaceae; <i>Dioscorea deltoidea</i> Wall. ex Griseb.		Endangered Research Paper JBES Vol.9 No.6,p.13 24,2016	Tangsa	9	Devan	4											13		13	Medicinal and Edible	Nepal, China, Bhutan

III. Shrub Species





Shrubs Species are conserved across all the Research Ranges with Tulsi species being specifically conserved at Haldwani and Dehradun Range.

I. Tulsi





S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery										Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name															Total
				1		2		3		4		5							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Lamiaceae; <i>Ocimum gratisimum</i> Linn.	LaungaTulsi 		Patalhod	1880									1880	36 (Tulsi experimental block Lalkuan); 10(Tulsi Vatika Shyampur); 10 (Tulsi vatika Haldwani); 15 (Bhujiyaghat (Aromatic plants))		1951	Medicinal	Africa, E. Asia India, Sri Lanka, Nepal and Vietnam.
2	Lamiaceae; <i>Origanum vulgare</i> Linn.	 Van Tulsi		Mandal	50	Tangsa	10	Dwarso	30					60	1500 (Mana vanpanchayat) ; 38 (Tulsi experimental block Lalkuan); 10 (Tulsi Vatika Shyampur); 4 (Tulsivatika Haldwani); 12 (Bhujiyaghat (Aromatic plants))		1654	Medicinal	Southern Europe, North Africa, and Western Asia.
3	Lamiaceae; <i>Ocimum tenuiflorum</i> Linn.	 Tulsi		Kalsi	10	Dwarson	50							60	30 (Tulsi experimental block); 10 (Tulsi Vatika Shyampur); 20 (Tulsivatika Haldwani); 44 (Tulsi block Lalkuan); 10 (Tulsi Vatika Shyampur); 12 (Bhujiyaghat (Aromatic plants))		180	Medicinal and religious	Native (Indian subcontinent).
3A	Lamiaceae; <i>Ocimum tenuiflorum</i>	 Shyama Tulsi													30 (Tulsi experimental block Lalkuan); 10 (Tulsi Vatika Shyampur); 21 (Tulsi vatika Haldwani)		61	Medicinal	Indian subcontinent






3B	Lamiaceae; <i>Ocimum tenuiflorum</i> <i>var. Angana</i>	 Angana Tulsi												2 (Tulsi experimental block)		2	Medicinal	Developed by SIR CIMAP, Lucknow
3C	Lamiaceae; <i>Ocimum tenuiflorum</i> <i>var. Kanchan</i>	 Kanchan Tulsi												7(Tulsi experimental block)		7	Medicinal	Developed by CSIR CIMAP, Lucknow
3D	Lamiaceae; <i>Ocimum tenuiflorum</i> <i>var. Amrita</i>	Amrita tulsi 												10 (Tulsi Vatika Shyampur)		10	Medicinal	
4	Lamiaceae; <i>Ocimum kilimandscharicum</i> Gurke	 Kapur Tulsi	Dwarson	10										10 (Tulsi block Lalkuan); 10 (Tulsi Vatika Shyampur); 15 (Bhujiyaghat (Aromatic plants))		45	Medicinal and Religious	Native to Kenya, Tanzania, Uganda, Sudan, and Ethiopia
5	Lamiaceae; <i>Ocimum basilicum</i> L.inn.	 Babui tulsi	Kalsi	990									990	36 (Tulsi block Lalkuan); 10 (Tulsi Vatika Shyampur); 11 (Tulsi vatika Haldwani); 15 Bhujiyaghat (Aromatic plants)		1062	Medicinal and Religious	India, Pakistan and Thailand.
5A	Lamiaceae; <i>Ocimum basilicum</i>	 Sabja Tulsi	Dwarson	5										34 (Tulsi experimental block Lalkuan); 10 (Tulsi Vatika Shyampur); 5 (Tulsi vatika Haldwani)		54	Medicinal and Religious	India, Pakistan and Thailand
5B	Lamiaceae; <i>Ocimum basilicum</i> <i>var. Saumya</i>	 Saumya Tulsi												32 (Tulsi experimental block lalkuan); 10 (Tulsi Vatika Shyampur);		42	Medicinal	Developed by CSIR CIMAP, Lucknow

5C	Lamiaceae; <i>Ocimum basilicum</i> 'Genovese'													14 (Tulsi experimental block Lalkuan); 10 (Tulsi Vatika Shyampur)		24	Medicinal	Native of Africa and Asia	
5D	Lamiaceae; <i>Ocimum basilicum</i>	Thai tulsi 		Lalkuan	5									5	10 (Tulsi Vatika Shyampur)		15	Medicinal	India, Pakistan and Thailand
6	Lamiaceae; <i>Ocimum americanum</i> Linn.	 Kali Tulsi		Kalsi	10									10	40 (Tulsi block Lalkuan); 15 (Tulsi Vatika Shyampur); 12 Bhujiyaghat (Aromatic plants)		67	Medicinal and Religious	Native to Africa, the Indian Subcontinent, China, and Southeast Asia
7	Lamiaceae; <i>Salvia officinalis</i> Linn.														30 (Tulsi block Lalkuan); 10 (Tulsi Vatika Shyampur)		40	Medicinal and Religious	Native to the Mediterranean region
8	Lamiaceae; <i>Ocimum X citriodorum</i> Vis.	 Nimbu Tulsi													30 (Tulsi block Lalkuan); 10 (Tulsi Vatika Shyampur); 16 (Tulsi vatika Haldwani)		56	Medicinal	Africa and Asia
9	Asteraceae; <i>Stevia rebaudiana</i>	Mithi tulsi 		Kalsi	10	Kalika	10							20	10 (Tulsi Vatika Shyampur); 5 (Tulsi vatika Haldwani)		15	Medicinal	Native to Paraguay
10	Lamiaceae; <i>Ocimum viride</i> Willd.	Ajwain tulsi 													10 (Tulsi Vatika Shyampur)		10	Medicinal	Native to Africa
11	Lamiaceae; <i>Ocimum vekiamdeem</i>	Deepam tulsi 													10 (Tulsi Vatika Shyampur)		10	Medicinal	







12	Lamiaceae; <i>Ocimum basilicum</i> L.			Lalkuan	5									5			5	Medicinal	Native of Africa and Asia
13	Lamiaceae; <i>Ocimum basilicum</i>	 Italian Basil		Lalkuan	5									5			5	Medicinal	Native of Africa and Asia
14	Lamiaceae; <i>Ocimum sanctum</i>	 Amrita Tulsi		Lalkuan	5									5			5	Medicinal	Native to the Indian subcontinent
15	Lamiaceae; <i>Ocimum kilimandschaticum</i> × <i>basilicum</i> 'Dark Opal'	 African blue basil		Lalkuan	5									5			5	Medicinal	-


II. Other Shrub




S.No.	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery													Experiment Site	Preservation Plot	Grand Total	Use	Native Region		
				Nursery Name												Total							
				1		2		3		4		5		6								7	
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery Name	No. Of Plant							Nursery Name	No. Of Plant
1.	Fabaceae; <i>Indigofera heterantha</i> Wall. ex Brandis	 Sakina		Mandal	60													60		60	Dye	Northwest ern Himalayas of Tibet.	
2.	Rosaceae; <i>Cotoneaster bacillaris</i> Wall. ex Lind.	Ruis 		Mandal	300	Tangsa	500	Shrikot	500	Dwars on	276	Saritat aal	958					2534	1340 (Trishula comp.1 K.W.L.D); 18 (Miyawaki Experiment, Gaja) 22 (R.E.T Devvan); 1(Arboretum, Haldwani)	3916	Fodder and Agric ultura l imple ments	Near endemic Uttarakhan d,Western Himalayan region	
3.	Rosaceae; <i>Pyracantha crenulata</i> Wall. ex Lind.	 Ghigaru		Mandal	895	Tangsa	6581	Shrikot	600	Kalika	357	Dwars on	200	Devvan	205			8718	2Gaja(wild berries and fruits); 2(Arboretum, Haldwani)	8722	Edible	Temperate Himalayas	
4.	Rosaceae; <i>Rosa macrophylaa</i> Lind.	 Ban Gulab		Tangsa	1250	Shrikot	4194											5444		5444	Oil and Orna menta l	Western Himalayas	

5.	Rosaceae; <i>Rubus ellipticus</i> Sm.	 Hisalu		Mandal	1181	Tangsa	165	Kalika	357	Dwarson	200							1703	541 (Miyawaki Experiment); 2Gaja(wild berries and fruits); 2(Arboretum, Haldwani)	2248	Edible, Medicinal and to control soil erosion	China, Nepal, Indian Subcontinent and Philippines
6.	Urticaceae; <i>Debregeasia salicifolia</i> (D. Don) Rendle	 Tushshaare		Mandal		Tangsa	1200											1200	100 (RET plot, Shyampur)	1300	Fodder	NE India; Tropical Africa; Central Himalaya.
7.	Lauraceae; <i>Lindera pulcherrima</i> (Nees) Benth. ex Hook.f.	Cher 		Mandal	50	Devvan	400											450	35 (R.E.T Devvan)	485	Fodder	Eastern Asia
8.	Elaeagnaceae; <i>Hippophae salicifolia</i> (D. Don) Serv.	Amesh 	Least concern (IUCN)	Mandal	260	Devvan	217	Patalhod	100									567	50 (R.E.T Plot, Devvan); 60 (Miyawaki Experiment)	677	Medicinal	Indian Himalayan region
9.	Lythraceae; <i>Woodfordia fruticosa</i> (L.) Kurz	Dhola 	Least concern (IUCN)	Mandal	400	Shrikot	140	Kalika	121	Dwarson	80			Lalkuan	28			769	200 (Riparian plot) 2 (Arboretum, Haldwani); 61 (Color& tanning experimental plot, Lalkuan); 470 lantana plot kalsi; 1(Arboretum Gaja);	1503	Fodder, Tannin and Dye.	India

10.	Berberidaceae; <i>Berberis aristata</i> DC.	 Kilmora	Least concern. (IUCN)	Mandal	30	Shrikot	500	Kalika	863	Dwarson	1550	Kalsi	873	Devvan	400	Patalhod	25	4241	892 plants in Miyawaki Experiment ; 70(RET demonstration plot, Harkot, Munsyari); 2 Gaja(wild berries and fruits); 2(Arboretum, Haldwani);100 Lantana Plot Kalsi	5602	Medicinal	Near endemic
11.	Rutaceae; <i>Zanthoxylum armatum</i> DC.	Timaru 	Collection from wild closed for the time being by Uttarakhand goverment	Mandal	800	Tangsa	1350	Dwarson	586	Patalthod	180							2916	903(Trishula comp.1 K.W.L.D): 318 (Miyawaki Experiment, Kalika); 1(Arboretum, Haldwani) 2(Arboretum Gaja);	4141	Spice and Medicinal	Nepal, China, Japan and Pakistan
12.	Rutaceae; <i>Skimmia laureola</i> (DC) Zucc	 Kedarpati		Mandal	2500	Devvan	2000	Sarital	83									4583	5256 (R.E.T Devvan Kanaser range); 2 (Arboretum Gaja)	9841	Incense sticks	Near endemic
13.	Oleaceae; <i>Fraxinus xanthoxyloides</i> (G. Don) DC.		Least Concern (IUCN)	Mandal	900	Tangsa	230											1130	60 (Tangsa nursery)	1190	Walking sticks	Afghanistan, China and Pakistan.
14.	Lamiaceae; <i>Rosemarinus officinalis</i> L.	Rosemary 		Kalika	243	Dwarson	50											293	5Bhujiyaghat (Aromatic plants); 30(Aromatic species project site, Lalkuan)	328	Ornamental and Flavoring agent	Native to the Mediterranean region.





15.	Elaeagnaceae; <i>Elaeagnus umbellata</i> Thunb.	Ginroye 		Kalika	10	Dwarson	280	Gaja	29								319	339 (Miyawaki Experiment); 1(Arboretum Gaja)		659	Medicinal	Indian Himalayan Region
16.	Coriariaceae; <i>Coriaria nepalensis</i> Wall.	Makol 		Kalika	69	Patalthod	50										119	424 (Miyawaki Experiment); 1(Arboretum, Haldwani) 1(Arboretum Gaja)		545	Soil binder	Indian Himalayan Region
17.	Primulaceae; <i>Myrsine africana</i> L.	Rikhdalmi 		Dwarson	24	Gaja, Wild flowers	2										791	765(R.E.T Devvan + kanaser range);78 (Miyawaki, Haldwani); 135 (Miyawaki Experiment)		1002	Control soil erosion and Medicinal	Nepal, Bhutan, China
18.	Rosaceae; <i>Principia utilis</i> Royle	Jhitalu 		Dwarson	276	Devvan	346	Saritatal	50								672	360 (Miyawaki Experiment) 26 (R.E.T Devvan)		1058	Control of soil erosion	Native of Himalayas
19.	Fabaceae; <i>Desmodium elegans</i> DC.	Chamlai 																84 (Miyawaki Experiment); 58 (R.E.T Devvan)		142	Medicinal	Nepal, Bhutan, China and Pakistan
20.	Apocynaceae; <i>Carissa opaca</i> Stapf.	Karonda 																102 (River range Kalsi); 3(Arboretum, Haldwani); 16 (Sal associate experimental site, Lalkuan); 104 Lantana Plot Kalsi		225	Edible	Tropical and subtropical Asia, Africa and Australia.




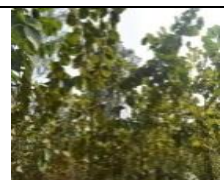


21.	Apocynaceae; <i>Rauvolfia</i> <i>serpentina</i> (L.) Benth. ex Kurz	 Sarp Gandha	Endangered (IUCN) ; Collection from wild closed for the time being by Uttarakhand Government	Kalsi	155											155	50 (RET plot, Shyampur); 200 (Medicinal conservatory, Haldwani)	405	Medi cinal	East Asia, India to Indonesia.
22.	Mimosaceae; <i>Mimosa pudica</i> L.	 Chhuimui	Least concern (IUCN)	Kalsi	250											250	(Medicinal conservatory, Haldwani)	250	Medi cinal	Native to South and Central America
23.	Moraceae; <i>Maclura</i> <i>cochinchinensis</i> (Laur.) Corner	 Damaru/ Cockspur thorn															177 (Lantana Plot Kalsi)	177	Medi cinal and Dye	Asia; Indian Subcontine nt
24.	Asteraceae; <i>Artimisa</i> <i>nilagirica</i> (C.B.Clarke)Pa mp.	 Paati		Kalsi	100											100	44 (Aromatic species project site, Lalkuan)	144	Medi cinal and Arom atic	Europe, Asia, Northern Africa.
25.	Acanthaceae; <i>Adhat oda</i> <i>vasica</i> Nees	 Vasa/Vasaka		Kalsi	50	Tangsa	30									80	50 (RET plot,) 49 (Medicinal conservatory, Haldwani)	149	Medi cinal	India , and Myanmar
26.	Thymelaeaceae; <i>Daphne</i> <i>papyracea</i> Wall.	Satpura 		Devvan	750											750	20(R.E.T Devvan)	770	Medi cinal	Near endemic
27.	Berberidaceae; <i>Berberis</i> <i>lambertii</i> Parker		Vulnerable (India Biodiversity Portal)	Patalhod	20											20	5(RET demonstratio n plot, Harkot, Munsyari)	25	Medi cinal	Endemic

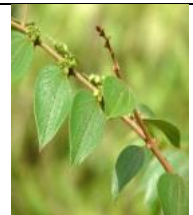



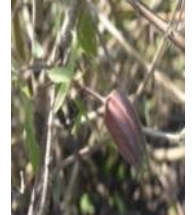

28.	Phyllanthaceae; <i>Antidesma diandrum</i> Roth.	Khatai 		Lalkuan	7											7	100 (RET plot); 22 Pipalparao (Mixed Biodiversity Plot); 2 Arboretum, Haldwani; 17 (Mixed biodiversity plot, lalkuan); 30 (Shyampur RET Plot)	171	Food	Sub – Himalayan tracts and Myanmar.
29.	Mimosaceae; <i>Acacia concinna</i>	Shikakai 															1 (Arboretum, Haldwani)	1	Dyeing	Asia, Warm plains of central and south India.
30.	Rubiaceae; <i>Randia dumetorum</i> Lam.	Mainfal 		Shyampur	15	Lalkuan	10									25	200 (Riparian plot); 20 Pipalparao (Mixed Biodiversity Plot); 6 (Miyawaki, Haldwani); 15 (Mixed biodiversity plot, Lalkuan)	266	Medicinal	Sub – Himalayan tracts & outer hills from the Beas eastwards.
31.	Fabaceae; <i>Sophora mollis</i> Graham.	Peeli sakina 															10 (Shyampur RET plot)	10	Medicinal	North Western Himalayas, China and Nepal.
32.	Fabaceae; <i>Desmodium gangeticum</i> (L.) DC.	Salprani 	Collection from wild closed for the time being by Uttarakhand Government.														150 (RET plot); 200 (Medicinal conservatory, Haldwani); 1100 approx. (Dashmool species plot, Lalkuan)	1450	Medicinal	Tropical and Sub tropical (Africa and South Asia) regions of India and Gangetic plains.

33.	Plumbaginaceae; <i>Plumbago zeylanica</i> L.	Chitrak 		Kalsi	20											20	150 (RET plot) 36 (Medicinal conservatory, Haldwani)		206	Medicinal	South Asia
34.	Tiliaceae; <i>Grewia hirsuta</i> Vahl.	Gurbeli 		Lalkuan	140												50 (RET plot);10 (Miyawaki, Haldwani);1 Arboretum, Haldwani; 16 (Sal associate experimental site, Lalkuan)		217	Medicinal	Western Peninsula and Myanmar
35.	Phyllanthaceae; <i>Flueggea microcarpa</i> Blum.	Rithola 		Lalkuan	6											6	200(Riparian plot); 14 (Miyawaki, Haldwani); 78 approx. (Mixed biodiversity plot, Lalkuan)		298	Medicinal	India , Myanmar
36.	Malvaceae; <i>Helicteres isora</i> L.	Marorfali 															150 (Riparian plot); 28 (Medicinal conservator, Haldwani)		178	Medicinal	India , Pakistan, Nepal and Myanmar
37.	Rhamnaceae; <i>Ziziphus mauritiana</i> Lam.	Ber 															100(Riparian plot); 2 (Arboretum, Haldwani); 16,(Sal associate experimental site, Lalkuan)		118	Edible	Indo Malaysian region of SE. Asia.
38.	Viburnaceae; <i>Viburnum cotinifolium</i> Don.	Guiya 		Saritatal	235	Patalthod	100										2(Arboretum Gaja)		337	Medicinal	Near endemic




39.	Fabaceae ; <i>Meizotropis pellita</i> (Hook.f. ex Prain) sanjappa	Patwa 	Threatened State Biodiversity Board) Endangered (Research Paper)	Saritatal	100											100	2(Arboretum Gaja)	102	Anti microbial	Endemic to Patwadangar (Nainital)
40.	Fabaceae ; <i>Desmodium gyrans</i> (L.) DC.	 Dancing Plant															5 (Bhujiyaghat Aromatic plants); 1 (Arboretum, Haldwani); 6 (Conservatory plot, Haldwani)	12	Ornamental	Tropical Asia
41.	Rutaceae; <i>Murraya koenigii</i> Spreng.	Kadhipatta 		Lalkuan	6											6	2(Bhujiyaghat Aromatic plants); 1 (Arboretum, Haldwani); 13 Miyawaki experiment	22	Spice	Native to India
42.	Theaceae ; <i>Camellia sinensis</i> (L.) Kuntze	Chai 	Data deficient (IUCN)	Lalkuan	2											2	1 Bhujiyaghat (Aromatic plants); 1 (Arboretum, Haldwani); 2 (Mixed biodiversity plot, Lalkuan)	6	Beverage	Northeast India, Assam, Upper Myanmar, China, Sikkim
43.	Apocynaceae; <i>Tabernaemontana divaricata</i> R.Br.ex Roem. & Schult.	Chandni 															5 Bhujiyaghat (Aromatic plants)	5	Ornamental	Native to India
44.	Verbenaceae; <i>Lippia alba</i> (Mill.) N.E.Br. ex Britton & P.Wilson	Lippia 															10 Bhujiyaghat (Aromatic plants); 6 (Aromatic zone Lalkuan)	16	Medicinal and ornamental	Native to southern Texas in the United States, Mexico







45.	Malvaceae. <i>Hibiscus rosa sinensis</i> L.	 Gurhal																20 (Gurhal vaatika, Haldwani);1 (Arboretum Gaja);	21	Edible and Medicinal	East Asia
46.	Primulaceae; <i>Embelia robusta</i> Roxb.	 Waiwiding																8 (Miyawaki, Haldwani); 16 (Mixed biodiversity plot, Lalkuan)	24	Medicinal	East Asia, Sri Lanka, India and Malaysia
47.	Sterculiaceae; <i>Abroma augusta</i> (L.) L.f.	 UlatKambal		Lalkuan	24													8 (Miyawaki, Haldwani); 1 (Medicinal conservatory, Haldwani)	33	Medicinal	Sikkim, Khasia hills and Assam.
48.	Solanaceae; <i>Solanum indicum</i> L.	 Brahti																100 (Medicinal conservatory, Haldwani); 2000 approx. (Dashmool species experimental plot, Lalkuan)	2100	Medicinal	Tropical and Subtropical India.
49.	Fabaceae; <i>Tephrosia purpurea</i> (L.) Pers.	 Sarpunkha																150 (Medicinal conservatory, Haldwani)	150	Medicinal	India and Sri Lanka.
50.	Fabaceae; <i>Uraria picta</i> (Jacq.) Desv. ex DC.	 Prastparni	Collection from wild closed for the time being by Uttarakhand Government.															80 (Medicinal conservatory, Haldwani); 700 (approx.) (Dashmool species, Lalkuan)	780	Medicinal	Tropical Africa, India, China and Indonesia.
51.	Apocynaceae; <i>Calotropis procera</i> (Aiton) W.T. Aiton	 Aakh																1 (Nav Graha Vaatika); 1 (Nakshtra Vaatika)	2	Medicinal	N. Africa, W. Asia South Asia and Indochina.

52.	Oleaceae; <i>Jasminum sambac</i> (L.) Aiton	 Bela / Mogra																4 (Aromatic zone, Haldwani); 30 (Aromatic species project site, Lalkuan)	34	Aromatic	Tropic Asia from the Indian subcontinent to Southeast Asia.
53.	Oleaceae; <i>Jasminum officinalis</i> L.	 Chameli																4 (Aromatic block, Haldwani); 1 (Aromatic species project site, Lalkuan)	5	Aromatic	India, Nepal, Pakistan and Himalayas.
54.	Rutaceae; <i>Murraya paniculata</i> (L.) Jack	 Mano Kamini																4 (Aromatic block, Haldwani); 4 (Aromatic species project site, Lalkuan)	8	Aromatic	Southeast Asia and China
55.	Tiliaceae; <i>Grewia sapida</i> Roxb.	 Falsa		Lalkuan	52												52	1 (Arboretum, Haldwani); 150 approx. (Lalkuan research range, Lalkuan)	153	Edible	Indian subcontinent
56.	Liliaceae; <i>Asparagus racemosus</i> Willd.	 Satavar	Limited collection allowed by Uttarakhand Government	Kalika	10	Dwarson	15										25	18 (Arboretum, Haldwani)	43	Medicinal	India
57.	Moraceae; <i>Cudrania javanensis</i> Trec.	 Dammar		Lalkuan	8													1 (Arboretum, Haldwani)	1	Edible	Asia, Africa and Australia

58.	Rhamnaceae; <i>Ziziphus oenoplia</i> (L.)Mill.	 Makoh ber		Lalkuan	6											6	16 (Sal associate experimental site)	22	Edible and Medicinal	Tropical and subtropical Asia and Australasia
59.	Caesalpiniaceae; <i>Caesalpinia bonduc</i> L.	 Latakaranj	Endangered (IUCN) Environment Protection and Biodiversity Conservation Act 1999	Lalkuan	2											2	8 (Sal Associate Experimental plot, Lalkuan)	10	Medicinal	India (Nicobar Islands) and Sri Lanka.
60.	Rosaceae; <i>Rosa damascena</i> var. Ranisahiba	 Gulab rani sahiba															2 (Aromatic species project site, Lalkuan)	2	Perfumery	
61.	Asteraceae; <i>Artemisia absinthium</i> L.	 Common wormwood															44 (Aromatic species project site, Lalkuan)	44	Medicinal	Native to temperate regions of Eurasia and Northern Africa.
62.	Malvaceae; <i>Abelmoschus moschatus</i> Medik	 Kasturi bhindi															30 (Aromatic species project site, Lalkuan)	30	Medicinal and Perfumery	Asia and Australia.
63.	Oleaceae; <i>Jasminum auriculatum</i> Vahl	 Juhi															2 (Aromatic species project site, Lalkuan); 2 (Aromatic zone Haldwani)	4	Medicinal and Religious	Indian subcontinent



64.	Rubiaceae; <i>Gardenia jasminoides</i> J.Ellis	 Gandhraj																3 (Aromatic species project site, Lalkuan)	3	Medicinal	Asia, India, Myanmar, Vietnam, Japan and Bangladesh		
65.	Mimosaceae; <i>Acacia benthamii</i> Meisn.																	2(Arboretum at Gaja)			Native to Western Australia		
66.	Verbenaceae; <i>Vitex negundo</i> L.	Nirgundi 	Least concern (IUCN)	Lalkuan	141	Tangsa	100	Kalika	100									341		1(Arboretum Gaja); 100 (Riparian plot); 5 Bhujiyaghat (Aromatic plants); 1 (Arboretum, Haldwani); 28 (Medicinal conservatory, Haldwani); 200 Approx. (Mixed biodiversity plot, Lalkuan)	676	Medicinal	Native to India
67.	Liliaceae; <i>Asparagus curillus</i> Buch. Ham. ex Roxb.	Satawar 		Tangsa	27	Kalsi	290											317		50 (Riparian plot)	367	Medicinal	Near Endemic
68.	Rhamnaceae; <i>Rhamnus virgatus</i> Roxb.	Chaduel 		Saritatal	1215	Lalkuan	5											1220		1 (Arboretum Gaja); 1(Arboretum Gaja)	1222	Edible and Medicine	Pakistan, Nepal, Bhutan.
69.	Anacardiaceae; <i>Rhus parviflora</i> Roxb.	 Tungla																		1(Arboretum Gaja)	1	Edible	Himalayas

70.	Fabaceae; <i>Indigofera pulchella</i> Roxb.	Sakina 		Dwarson	150											150	1 (Arboretum Gaja)		151	Medicinal and Edible	Near Endemic
71.	Rhamnaceae; <i>Ziziphus xylopyrus</i> Wall.	 Kathber															16 (Sal associate experimental site, Lalkuan)		16	Medicinal and edible	Indian Subcontinent
72.	Rubiaceae; <i>Coffea arabica</i>	Coffee 	Endangered (IUCN)	Lalkuan	1	Haldwani	1									2				Edible	Southern Africa and tropical Asia.
73.	Lythraceae; <i>Lawsonia inermis</i> L.	 Mehendi															1 (Arboretum, Haldwani)		1	Dye	South Africa, and Sudan
74.	Apocynaceae <i>Gomphocarpus phycocarpus</i>			Patalthod	60											60			60	Medicinal	Exotic
75.	Buxaceae <i>Buxus wallichiana</i>	Papdi 		Patalthod	200											200			200	Medicinal and Toy making	Native to Eurasia
76.	Eleagnaceae <i>Elaeagnus parvifolia</i> D. don	Gwen 		Patalthod	100											100			100	Medicinal and Food	Native to Asia

77.	Caprifoliaceae <i>Leycesteria formosa</i>	Bhekan 		Patalthod	30												30			30	Food purpose	China to the Himalaya
78.	Rubiaceae; <i>Rubus paniculatus Sm.</i>	Kala hisalu 		Dwarson	20												20			20	Medicinal	Indian Subcontinent
79.	Apocynaceae; <i>Gymnema sylvestre</i>	 Gurmar		Haldwani	2												2			2	Medicinal	Native to tropical Asia
80.	Malvaceae; <i>Sida cordifolia</i>	 Bala		Haldwani	2												2				Medicinal	Native to India
81.	Goodeniaceae; <i>Scaevola taccada</i>	 Beach cabbage		Haldwani	1												1				Edible and Medicinal	Native to Indian and Pacific Ocean region
82.	Caprifoliaceae ; <i>Abelia grandiflora</i>	 Glossy abelia		Haldwani	4												4			4	Aromatic	Native to eastern Asia
83.	Acanthaceae; <i>Beloperone guttata</i>	 Shrimp plant		Haldwani														10 (Pollinator Park)		10	Ornamental	Native to Mexico




84.	Fabaceae; <i>Calliandra brevipes</i>	 Pink powder puff	Haldwani	6												6			6	Orna menta 1	Native to South America
85.	Hydrangeaceae; <i>Hydrangea macrophylla</i>		Haldwani	12	Kalika	5	Dwars on	5	Gaja	40						62			62	Orna menta 1	Native to Japan
86.	Euphorbiaceae; <i>Euphorbia cotinifolia</i>		Haldwani	12												12			12	Orna menta 1	Native to Mexico
87.	Theaceae; <i>Camellia japonica</i>	 Japanese camellia	Haldwani	8	Lalkua n	4										12			12	Orna menta 1	Native to China and Japan
88.	Euphorbiaceae; <i>Acalypha wilkesiana</i>	 Copperleaf	Haldwani	3												3			3	Medi cinal	Native to Fiji
89.	Rosaceae; <i>Spiraea thunbergii</i>	 Thunberg spiraea	Haldwani														2 (Arboretum Haldwani)		2	Edibl e	Native to East China and Japan
90.	Fabaceae; <i>Indigofera tinctoria</i>	 True indigo	Haldwani	6												6			6	Sourc e of Indig o Dye	Naturalize d in tropical and temperate Asia







91.	Plumbaginaceae, <i>Plumbago indica</i>	 Red Chitrak		Haldwani	10														10			10	Medicinal	Native to Southeast Asia, Indonesia, the Philippines, and Yunnan in southern China.
92.	Apocynaceae; <i>Carissa carandas</i>	 Karunda		Haldwani															10			10	Edible and Medicinal	Native to India
93.	Magnoliaceae; <i>Magnolia liliiflora</i>	 lily magnolia																		10 (Aromatic Project Site)		10	Ornamental	Native to southwest China
94.	Verbenaceae; <i>Clerodendrum chinense</i>	 Chinese Glory Bower		Lalkuan	9														9			9	Medicinal	Native to Nepal, the eastern Himalayas, Andaman and Nicobar Islands, southeast China, Southeast Asia, and Malesia.
95.	Burseraceae; <i>Commiphora wightii</i>	 Guggal		Lalkuan	2														2			2	Medicinal	Found in Pakistan and India.
96.	Fabaceae ; <i>Cassia tora</i>	 Panwar		Lalkuan	6														6			6	Medicinal	Native range is in Central America.
97.	Myrtaceae; <i>Pimenta dioica</i>	 Jamaica pepper		Lalkuan	9														9			9	Medicinal	Native to the Greater Antilles, southern Mexico, and Central America.







98.	Solanaceae; <i>Cestrum diurnum</i>	 Din Ka Raja		Lalkuan	9											9			9	Medi cinal	Native to the West Indies.
99.	Verbenaceae; <i>Clerodendrum wallichii</i>	 Bridal Veil		Haldwani	10											10			10	Orna menta l	Native to North East India







IV. Bamboo / Ringal Species








Bamboo species are being conserved at Research Range Haldwani and Gopeshwar.






S. No.	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery										Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name															Total
				1		2		3		4		5							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Bambusoideae; <i>Dendrocalamus hamiltonii</i>	 Hamiltonii Bans		Lalkuan	420	Shyampur	06						426	10 (Trishula comp.1 K.W.L.D); 131 (River range Kalsi); 900 (Bambusetum, Haldwani); 1080 (Bambusetum, Lalkuan)		2548	House frames	Native to Northeast Himalayas.	
2.	Bambusoideae; <i>Dendrocalamus strictus</i>	 Laathi bans		Shyampur	08	Shrikot	47696	Kalika	91	Dwarson	20	Kalika	80	47895	228 (Trishula comp. 1 K.W.L.D); 91 (River range Kalsi); 104 (Arboretum Haldwani) 1300 (Bambusetum, Haldwani); 1075 (Bambusetum, Lalkuan)		50611	House frames	Native to Southeast Asia
3.	Bambusoideae; <i>Phyllostachys edulis</i>	 Chinese Bans												153 (Trishula comp. 1 K.W.L.D); 46 (River range Kalsi)		200	Textile industry	Native to China and Taiwan	





4.	Bambusoideae; <i>Thyrsostachys siamensis</i>	 Siamensis Bans		Shyampur	08									08	9(Trishula comp.1 K.W.L.D); 450 (Bambusetum, Haldwani), 276 (Bambusetum, Lalkuan)		744	Shelter and basket making.	Native to Yunnan, Myanmar, Laos, Thailand and Vietnam.
5.	Bambusoideae; <i>Dendrocalamus membranaceus</i>	 Membranaceus Bans	Least Concern (IUCN)	Shyampur	03										9 (Trishula comp. 1 K.W.L.D); 590 (Bambusetum, Haldwani); 958 (Bambusetum, Lalkuan)		1558	To control soil erosion.	Native to Northeastern Thailand
6.	Bambusoideae; <i>Thamnocalamus falconeri</i>	 Dev Ringal													25 (Trishula comp. 1 K.W.L.D); 10 (Bambusetum, Haldwani)		36	Basket making	Himalayan Region.
7.	Bambusoideae; <i>Thamnocalamus spathiflorus</i>	 Tham Ringal		Patalhod	50									50	25 (Trishula comp. 1 K.W.L.D)		76	Agricultural use	Native to Himalayan Region.
8.	Bambusoideae; <i>Arundinaria falcata</i>	 Gol Ringal		Mandal	57271	Tangsa	5834	Devvan	1007					64112	24 (Trishula comp.1 K.W.L.D)		64137	Basket making	Native to Northwest Himalaya.
9.	Bambusoideae; <i>Chimonobambusa jaunsarensis</i>	 Sarur Ringal													19 (Trishula comp. 1 K.W.L.D)		20	Broom making	Native to China, Japan, Vietnam and Himalayas.

10.	Bambusoideae; <i>Bambusa bambos</i>	 Kanta baans		Lalkuan	210									127 (River range Kalsi); 10 (Bambusetum, Lalkuan)		347	Making bridges and for ladders	Native to Southeast Asia
11.	Bambusoideae; <i>Bambusa vulgaris</i>	 Baans	Least Concern (IUCN)	Shyampur	08								08	47 (River range Kalsi); 250 (Bambusetum, Haldwani); 480 (Bambusetum, Lalkuan)		785	Huts, Boats, Fences and Musical Instruments.	Native to Indochina and to the province of Yunnan in Southern China
12.	Bambusoideae; <i>Arundinaria falcata</i>	Gud ringal 		Patalthod	50								50			50	Basket and Handicraft	Native of the Northwest Himalaya
13.	Bambusoideae; <i>Bambusa multiplex</i>	 Hedge bamboo		Lalkuan	360	Shyampur	05						365	450 (Bambusetum, Haldwani); 125 (Bambusetum, Lalkuan)		940	Fence	Native to China.
14.	Bambusoideae; <i>Dendrocalamus longispathus</i>			Shyampur	02								02	600 (Bambusetum, Haldwani); 564 (Bambusetum, Lalkuan)		1166	Handicrafts and Timber	Native to Bangladesh, Myanmar, and Thailand.
15.	Bambusoideae; <i>Dendrocalamus asper</i>	 Giant Bamboo												450 (Bambusetum, Haldwani); 1253 (Bambusetum, Lalkuan)		1703	Construction and Edible	Native to Southeast Asia.

16.	Bambusoideae; <i>Melocanna beccifera</i>	 Berry Bamboo		Shyampur	02								2	180 (Bambusetum, Haldwani); 1099 (Bambusetum, Lalkuan)		1279	Edible and Medicinal	Indian subcontinent
17.	Bambusoideae; <i>Dendrocalamus giganteus</i>	 Dragon bamboo	Least concern (IUCN)	Lalkuan	359								359	650 (Bambusetum, Haldwani); 670 (Bambusetum, Lalkuan)		1679	Construction	Native to Southeast Asia
18.	Bambusoideae; <i>Bambusa balcooa</i>	 Female bamboo												300 (Bambusetum, Haldwani); 235 (Bambusetum, Lalkuan)		535	Edible	Native to Northeast India and the Indian subcontinent.
19.	Bambusoideae; <i>Phyllostachys reticulata</i>			Lalkuan	135								135	750 (Bambusetum, Haldwani); 25 (Bambusetum, Lalkuan)		910	Medicinal	Native to China
20.	Bambusoideae; <i>Bambusa wamin</i>	 Buddha Bamboo		Lalkuan	240	Shyampur	04						244	650 (Bambusetum, Haldwani); 495 (Bambusetum, Lalkuan)		1389	Ornamental	Native to South China.
21.	Bambusoideae; <i>Bambusa nutans</i>													1050 (Bambusetum, Haldwani); 478 (Bambusetum, Lalkuan)		1528	Ornamental	Northeast India, Bangladesh, Myanmar nad Thailand.







22.	Bambusoideae; <i>Bambusa tulda</i>	 Indian timber bamboo													1100 (Bambusetum, Haldwani); 15 (Bambusetum, Lalkuan)		1115	Edible	Native to the Indian subcontinent, Indo china, Tibet, and Yunnan.
23.	Bambusoideae; <i>Phyllostachys nigra</i>														800 (Bambusetum, Haldwani); 126 (Bambusetum, Lalkuan)		926	Musical instrument	Native to Hunan Province of China.
24.	Bambusoideae; <i>Thyrsostachys oliveri</i>	 Oliveri													250 (Bambusetum, Haldwani)		250	Construction and Edible	Native of Myanmar
25.	Bambusoideae; <i>Bambusa polymorpha</i>														380 (Bambusetum, Haldwani)		380	Pulp, Paper and Construction	Native to Bangladesh, Laos, Myanmar, Thailand, Sri Lanka.
26.	Bambusoideae; <i>Bambusa pallida</i>	 Bakhal													560 (Bambusetum, Haldwani)		560	Basketry and Edible	Indian subcontinent
27.	Bambusoideae; <i>Bambusa chungii</i>	 White bamboo													90 (Bambusetum, Haldwani)		90	Construction and Ornamental	Found in Hong Kong, and distribution in Southern China and Vietnam.
28.	Bambusoideae; <i>Dendrocalamus brandisii</i>	 Velvet Leaf Bamboo													184 (Bambusetum)		184	Building material	Endemic to India (Bamboo Diversity of India: An update M.L. Sharma and Nirmala C. Department of Botany, Panjab University Chandigarh




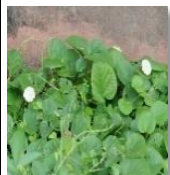



																			160014)
29.	Bambusoideae; <i>Dinochloa andamanica</i>													95 (Bambusetum)		95	Ropes	Endemic to India (Bamboo Diversity of India: An update M.L. Sharma and Nirmala C. Department of Botany, Panjab University Chandigarh 160014)	
30.	Bambusoideae; <i>Bambusa nigra</i>													25 (Bambusetum, Lalkuan)		25	Musical instruments	Native to China	
31.	Bambusoideae; <i>Bambusa glaucophylla</i>	 Malay Dwarf												75 (Bambusetum, Lalkuan)		75	Ornamental	Native to Jawa	
32.	Bambusoideae; <i>Dendrocalamus stocksii</i>													5 (Bambusetum, Lalkuan)		5	Furniture, Handicraft and Edible	Indian subcontinent	
33.	Bambusoideae; <i>Bambusa sasa</i>													25 (Bambusetum, Lalkuan)		25	Medicinal	Native to Japan	

34.	Bambusoideae; <i>Bambusa cacharensis</i>														3 (Bambusetum, Lalkuan)		3	Medicinal and Edible	Native ro India
35.	Bambusoideae; <i>Oxytenanthera nigrociliata</i>	 Guada Bamboo													10 (Bambusetum, Lalkuan)		10	Edible and Constructi on	Natuve to Asia
36.	Bambusoideae; <i>Bambusa salarkhanii</i>			Lalkuan	10										10			Basketry	Himalaya to Indo China
37.	Bambusoideae; <i>Schizostachyum dullooa</i>			Lalkuan	9										9			Flute making	Native to Southeast Asia

V. Wild Climber Species







Wild Climber Species are being conserved at Research Range, Haldwani and Dehradun.

S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery								Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name													
				1		2		3		4							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Fabaceae; <i>Pueraria tuberosa</i>	Vidari kand 										100 (RET plot and Riparian plot); 2 (Lata Pergola, Haldwani)		102	Medicinal	Native to India, Pakistan and Nepal.	
2.	Fabaceae; <i>Spatholobus parviflorus</i>	Malan latta 	Least concern(IUCN)									100 (RET plot); 2 (Lata Pergola, Haldwani)		102	Medicinal	Native to Sri Lanka	
3.	Celastraceae; <i>Celastrus paniculatus</i>	Maalkangni 		Lalkuan	7							50 (RET plot); 9 (Sal Associate Experimental plot, Lalkuan); 1 (Arboretum, Haldwani); 45 (Lantana Plot Kalsi)		105	Medicinal	Native to India	
4	Convolvulaceae; <i>Argyrea nervosa</i>	 Vidara										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to India	
5	Menispermaceae; <i>Tinospora cordifolia</i>	 Giloy	Collection closed for the time being by Uttarakhand Government	Haldwani	400	Lalkuan	5	Tangsa	20	Kalika	5	410	2 (Lata Pergola, Haldwani)		427	Medicinal	Throughout the tropical region of India.
6	Caesalpinaceae; <i>Bauhinia vahlii</i>	 Maalu											2 (Lata Pergola, Haldwani); 2 (Sal Associate Experimental plot)/ 1(Arboretum Gaja)		5	Medicinal and Fodder	India, Nepal and Bhutan.








7	Menispermaceae; <i>Stephania glabra</i>	 Ganjaru										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to India	
8	Asclepiadaceae; <i>Tylophora indica</i>	 Antamul	Lalkuan	6								6	2 (Lata Pergola, Haldwani), 50 (RET plot, Shyampur)		58	Medicinal	Indigenous to India.
9	Asclepiadaceae; <i>Leptadenia reticulata</i>	 Jivanti											2 (Lata Pergola, Haldwani)		2	Medicinal	Distributed throughout Madagascar, Mauritius, Myanmar, and Sri Lanka.
10	Convolvulaceae; <i>Ipomoea turpethum</i>	 Nisoth											2 (Lata Pergola, Haldwani)		2	Medicinal	Native to Asia
11	Rubiaceae; <i>Paederia foetida</i>	 Gandhprasarni											2 (Lata Pergola, Haldwani)		2	Medicinal	Native to both temperate and tropical Asia, from India to Japan and South East Asia.
12	Dioscoreaceae; <i>Dioscorea belophylla</i>	 Turar											2 (Lata Pergola, Haldwani)		2	Medicinal and Edible	Native to Africa, Asia and northern Australia.
13	Menispermaceae; <i>Cissampelos pareira</i>	 Akanadi/ laghupatha											2 (Lata Pergola, Haldwani)		2	Medicinal	Native to India and Africa.


14	Apocynaceae; <i>Ichnocarpus frutescens</i>	 Dudhlata										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to China, India, Southeast Asia, and northern Australia.
15	Smilacaceae; <i>Smilax aspera</i>	 Chopachini										2 (Lata Pergola, Haldwani)		2	Medicinal	Himalayas, from Pakistan to Bhutan.
16	Fabaceae; <i>Mucuna pruriens</i>	 Kiwach										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to Africa and tropical Asia.
17	Apocynaceae; <i>Hemidesmus indicus</i>	 Anantamul										2 (Lata Pergola, Haldwani)		2	Medicinal	It occurs over the greater part of India, from the upper Gangetic plain eastward to Assam
18	Asclepiadaceae; <i>Holostemma annulare</i>	 Chirvel										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to southern Asia (China, Nepal, Pakistan, Kashmir, India, Sri Lanka, Myanmar, Thailand).
19	Asclepiadaceae; <i>Aristolochia indica</i>	 Hooka bel/ Dug bel										2 (Lata Pergola, Haldwani)		2	Medicinal	Southern India and also Sri Lanka.
20	Capparidaceae; <i>Capparis horrida</i>	 Aradanda										2 (Lata Pergola, Haldwani)		2	Medicinal	Indian subcontinent, Indo China, China and Malaysia.

21	Fabaceae; <i>Abrus precatorius</i>	 Ratti										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to Asia and Australia.
22	Moraceae; <i>Ficus hederacea</i>	 Creeping Ficus										2 (Lata Pergola, Haldwani)		2	Medicinal	Native range is Himalaya to S. China and Indo China
23	Araliaceae; <i>Hedera helix</i>	 Common ivy										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to Europe
24	Asclepiadaceae; <i>Cryptolepis buchananii</i>	 Kala bel										2 (Lata Pergola, Haldwani)		2	Medicinal	Native range is Indian Subcontinent to S. China and Indo China
25	Smilacaceae; <i>Smilax zeylanica</i>	 Kumarika										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to parts of the Indian Subcontinent as well as in Myanmar, Malaysia, Java and Solomon Islands.
26	Araceae; <i>Rhaphidophora sp.</i>											2 (Lata Pergola, Haldwani)		2	Medicinal	

27	Passifloraceae; <i>Passiflora incarnata</i>	 Wild passion vine/ Rakhi bel										2 (Lata Pergola, Haldwani)/ 2 (Wild edible Plants Gaja)	4	Medicinal	Native to the Southeastern United States.
28	Ranunculaceae; <i>Clematis virginiana</i>											2 (Lata Pergola, Haldwani)	2	Medicinal	Native to North America.
29	Fabaceae; <i>Desmodium rotundifolium</i>											2 (Lata Pergola, Haldwani)	2	Medicinal	Native to North America
30	Actinidiaceae; <i>Actinidia deliciosa</i>	 Kiwi										2 (Lata Pergola, Haldwani)	2	Edible	Native to Southern China.
31	Vitaceae; <i>Cissus quadrangularis</i>	 Hadjod										30 (Aromatic Zone Lalkuan)	30	Medicinal	Native to tropical Asia, Arabia and much of Africa.
32	Dioscoreaceae; <i>Dioscorea alata</i>	 Water yam										478 (Patalthod)	478	Edible	Native to India.

33	Araceae; <i>Scindapsus officinalis</i>	 Gajapippali		Kalsi	6							6		6	Medicinal	Native to Southeast Asia and Java.
34	Rosaceae; <i>Rosa setigera</i>	 Jungli gulab											2 (Lata Pergola, Haldwani)	2	Medicinal	Native to Central and Eastern North America.
35	Apocynaceae; <i>Telosma cordata</i>	 Cowslip Creeper											2 (Lata Pergola, Haldwani)	2	Aromatic	Native to China and Indo China
36	Vitaceae; <i>Ampelopsis cantoniensis</i>	 Ampelopsis cantoniensis											2 (Lata Pergola, Haldwani)	2	Medicinal	Native to China, Japan, Malaysia, Thailand, and Vietnam
38	Caprifoliaceae; <i>Lonicera periclymenum</i>	 Honeysuckle											2 (Lata Pergola, Haldwani)	2	Medicinal	Europe, North Africa and Turkey
39	Asteraceae; <i>Tarlmounia elliptica</i>	 Curtain Creeper											2 (Lata Pergola, Haldwani)	2	Medicinal	Native to India, Burma and Thailand
40	Solanaceae; <i>Lycium barbarum</i>	 Goji berry											2 (Lata Pergola, Haldwani)	2	Medicinal	Native to China

41	Fabaceae; <i>Wisteria frutescens</i>											2 (Lata Pergola, Haldwani)		2	Medicinal	Native to North America
42	Combretaceae; <i>Combretum indicum</i>											2 (Lata Pergola, Haldwani)		2	Medicinal	Native to Asia
43	Apocynaceae; <i>Marsdenia floribunda</i>											2 (Lata Pergola, Haldwani)		2	Aromatic	Native to Madagascar
44	Acanthaceae; <i>Thunbergia mysorensis</i>											2 (Lata Pergola, Haldwani)			Ornamental	Native to Southern tropical India
45	Bignoniaceae; <i>Campsis radicans</i>											2 (Lata Pergola, Haldwani)			Ornamental	Native in eastern and southern United States
46	Vitaceae; <i>Parthinocissus semicordata</i>			Patalhod	10									10	Ornamental	Himalayas
47	Apocynaceae <i>Hoya longifolia</i>												1(orchidarium at Gaja)	1	Ornamental	India (Asia nations)

48	Manispermaceae <i>Stephania elegans</i>	 Ghindhadu		Patalhod	10						10			10	Medicinal	Native to Eastern and Southern Asia and Australia
49	Gesneriaceae <i>Aeschynanthus parviflorus</i>	 SikkimBlushwort		Patalhod	10						10			10	Ornamental	Himalayas
50	Smilacaceae <i>Smilax elegans</i>	 Elegant Smilax		Patalhod	10						10			10	Ornamental	Himalayas
51	Haemodaceae <i>Hedera nepalensis</i>	 Elegant Smilax		Patalhod	10						10			10	Ornamental	Himalayas
52	Bignoniaceae; <i>Begonia venusta</i>	 Flamevine										2 (Lata Pergola, Haldwani)		2	Medicinal	Native of Brazil
53	Bignoniaceae; <i>Dolichandra unguis cati</i>	 Cat's claw										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to the tropical dry forest of Central America, South America and the Caribbean
54	Fabaceae; <i>Amphicarpaea bracteata</i>	 American Hog Peanut										2 (Lata Pergola, Haldwani)		2	Edible	Native to North America.
55	Basellaceae; <i>Basella alba</i>	 Bharatiye Palak										2 (Lata Pergola, Haldwani)		2	Medicinal	Native to Africa and Asia

56	Apocynaceae; <i>Strophanthus gratus</i> (Wall. & Hook.)	 Climbing Oleander		Lalkuan	9									9	Medicinal	Native to tropical Africa
57	Verbenaceae; <i>Petrea volubilis</i> var. <i>albiflora</i> (Standl.)	 White Queen's Wreath Vine		Lalkuan	9									9	Ornamental	Native to Tropical America
58	Apocynaceae; <i>Trachelospermum jasminoides</i> (Lindl.) Lem.	 Star jasmine		Lalkuan	5									5	Medicinal	Native to eastern and southeastern Asia
59	Convolvulaceae; <i>Porana volubilis</i> Burm. Fil.	 Horse Tail Creeper		Lalkuan	5									5	Aromatic	Indo China to Malesia
60	Fabaceae; <i>Clitoria fragrans</i> Small.	 Pigeon wings		Lalkuan	1									1	Aromatic	Endemic to Central Florida
61	Apocynaceae; <i>Vallaris solanaceae</i> (Roth) Kuntze	 Bread flower		Lalkuan	10									10	Medicinal	Native to India and Burma
62	Acanthaceae; <i>Thunbergia alata</i>	 Black eyed Susan vine		Lalkuan	10									10	Medicinal	Native to Eastern Africa








63	Asteraceae; <i>Senecio confusus</i>	 Mexican Flame Vine		Lalkuan	10									10	Ornament al	Native to Mexico, Central America and the West Indies
64	Apocynaceae; <i>Chonemorpha fragrans</i>	 Frangipani Vine		Lalkuan	10									10	Medicinal	Native to China, India, Indonesia, Malaysia, Myanmar, Sri Lanka and Thailand.
65	Bignoniaceae; <i>Mansoa alliacea</i>	 Garlic Vine		Lalkuan	10									10	Medicinal	Native to Northern South America, and has spread to Central America and Brazil.
66	Fabaceae; <i>Abrus precatorius</i>	 Ratti		Lalkuan	10						10			10	Medicinal	Native to Asia and Australia
67	Oleaceae; <i>Jasminum dispermum</i>	 Pink Jasmine		Lalkuan	5						5			5	Medicinal	Native to West China and the Himalaya.
68	Cactaceae; <i>Pereskia aculeata</i>	 Barbados Gooseberry		Lalkuan	5						5			5	Medicinal	Native to tropical America.
69	Piperaceae; <i>Piper betle</i>	 Paan		Lalkuan	10						10			10	Medicinal	Originated in Southern and Southea st Asia.
70	Piperaceae; <i>Piper nigrum</i>	 Kali mirch		Lalkuan	10						10			10	Medicinal	Native to present day South India,



71	Combretaceae; <i>Combretum indicum</i>	 Madhu Malati		Lalkuan	7						7			7	Medicinal	Native to tropical Asia.
72	Annonaceae; <i>Artabotrys hexapetalus</i>	 Hari champa		Lalkuan	5						5			5	Medicinal	Found in India through to Burma, southern China and Taiwan.
73	Malpighiaceae; <i>Hiptage benghalensis</i>	 Madhavi lata		Lalkuan	7						7			7	Medicinal	Native to India, Southeast Asia, Taiwan, and the Philippines.
74	Oleaceae; <i>Jasminum polyanthum</i>	 Pink Jasmine		Lalkuan	5						5			5	Aromatic	Native to China and Myanmar.
75	Passifloraceae : <i>Passiflora edulis</i>	 Passion fruit(krishna kamal)		Shyam pur	05						05			05	Edible and Medicinal	Native to southern Brazil through Paraguay and northern Argentina.
76	Menispermaceae; <i>Stephania rotundifolia</i>	 Genjadu							Devvan	03				03	Medicinal	Tropical to temperate Himalaya. India, China

*1 Species is yet to be identified.

VI. Cane species




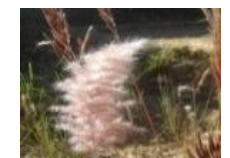

Cane species are being conserved in Forest Research Range Haldwani:

S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt./ Indian Biodiversity Portal)	Nursery								Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name													Total
				1		2		3		4							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1	Areaceae; <i>Calamus tenuis</i>		Least Concern (IUCN); Lower risk (Renuka, 2001).									4 (Canetum, Haldwani)		4	Handicrafts and Edible	Native to India, Assam, Bangladesh, Bhutan, Cambodia, Laos, Myanmar, Thailand, Vietnam, Java and Sumatra	
2	Areaceae; <i>Calamus viminalis</i>		Lower risk (Renuka, 2001).									4 (Canetum, Haldwani)		4	Timber	Native to India	
3	Areaceae; <i>Calamus pseudotenuis</i>		Lower risk (Renuka, 2001).									4 (Canetum, Haldwani)		4	Timber and Edible	Native to India & Sri lanka	
4	Areaceae; <i>Calamus longisetus</i>		Vulnerable (Renuka, 2001).									4 (Canetum, Haldwani)		4	Timber and Edible	Native to India	
5	Areaceae; <i>Calamus erectus</i>											4 (Canetum, Haldwani)		4	Timber	Native to India	
6	Areaceae; <i>Calamus inermis</i>		Critically endangered (Renuka, 2001).									4 (Canetum, Haldwani)		4	Timber	Native to India	
7	Areaceae; <i>Calamus floribundus</i>											10 (Canetum) Haldwani		10	Timber	Native to India	

8	Arecaceae; <i>Daemonorops jenkinsiana</i>												10 (Canetum) Haldwani		10	Timber and Edible	Native to India
9	Arecaceae; <i>Calamus rotang</i>												10 (Canetum) Haldwani		10	Timber and Medicinal	Native to India









VII. Grass species









Grass species are being conserved at Forest Research Range Kalika.







S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery								Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name													
				1		2		3		4							
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant						
1.	Poaceae; <i>Cymbopogon winterianus</i> Jowitt ex Bor	Java Ghas 										50 (Dwarson); 50 Bhujiyaghat (Aromatic plants); 8 (Aromatic species project site, Lalkuan)		108	Medicinal	Native to India.	
2.	Poaceae; <i>Cymbopogon martini</i> (Roxb.) W. Watson	Rosa Ghas 										25 (Dwarson); 50 Bhujiyaghat(Aromatic plants)		75	Medicinal	India and Indochina.	
3.	Poaceae; <i>Vetiver zizanoides</i> (L.) Nash	Khas Ghas 		Patalhod	50							60 (Dwarson): 5(Grass Demonstration Plot Shyampur); 50 Bhujiyaghat (Aromatic plants); 30 (Aromatic species project site, Lalkuan)		195	Medicinal and Aromatic	Native to India, Pakistan, Bangladesh and Sri Lanka.	
4	Poaceae; <i>Saccharum spontaneum</i> L.	Kans Ghas 										605 (Dwarson); 5 (Grass demonstration plot, Haldwani); 5 (Grass Demonstration Plot, Shyampur)		615	Soil Conservation and Ornamental	Native to the Indian Subcontinent.	
5	Poaceae; <i>Festuca arundinacea</i> (Schreb.)	Dolani Ghas 										368 (Dwarson)		368	Soil Conservation	Native to Europe.	








6	Poaceae; <i>Lolium perrene</i> L.	 Rye Ghas											220 (Dwarson)		220	Soil Conservation	Europe, Asia and northern Africa.	
7	Poaceae; <i>Bromus inermis</i> Leys	 Brom Ghas											220 (Dwarson)		220	Soil Conservation and Fodder	Native to Europe.	
8	Poaceae; <i>Pennisetum purpureum</i> Schumach.	 Napiner Ghas											719 (Dwarson)		719	Soil Conservation and fodder.	Native to the African grasslands.	
9	Poaceae; <i>Megathyrsus maximus</i> (Jacq.) B.K. Simon & S.W.L.Jacobs	 Ginni Ghas		Dwarson	234	Kalsi	150						384	234 (Dwarson)	618		Soil Conservation and fodder.	Africa, Palestine and Yemen.
10	Poaceae; <i>Desmostachya bipinnata</i> (L.) Stapf	 Durva Ghas												335 (Dwarson); 5 (Grass Demonstration Plot, Shyampur)		341	Soil Conservation	Northern Africa, Tropical Asia, Myanmar, Nepal and Pakistan.
11	Poaceae; <i>Pennisetum clandestinum</i> Hochst. ex Chiov.	 Kikuyi Ghas												300 (Dwarson Nursery)		300	Soil Conservation and Fodder.	East Africa.
12	Poaceae; <i>Cynodon dactylon</i> (L.) Pers.	 Doob Ghas												264 (Dwarson)		264	Soil Conservatio, Fodder and Religious purpose	Eastern hemisphere.









13	Poaceae; <i>Dactylis glomerata</i> L.	 Gucchi Ghas											575 (Dwarson)		575	Soil Conservation and Fodder.	Native to Europe, Temperate Asia, and northern Africa.
14	Poaceae; <i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schilt.	 Kumaria ghas											457 (Dwarson)		457	Soil Conservation and Fodder.	Southern Africa, southern Asia, Northern Australia and North America.
15	Poaceae; <i>Chrysopogon fulvus</i> (Spreng.) Chiov.	 Godiya Ghas											330 (Dwarson)		330	Soil Conservation and Fodder.	Tropical Asia and East Africa.
16	Poaceae; <i>Arundinella nepalensis</i> Trin.	 Nalika Ghas											237 (Dwarson)		237	Soil Conservation	Africa, E. Asia India, Nepal, S China.
17	Poaceae; <i>Setaria sphacelata</i> (Schum.)Stapf &C.E. Hubb.ex M.b.Moss	 Sita Ghas											200 (Dwarson)		200	Soil Conservation and Fodder.	Tropical and subtropical Africa.
18	Poaceae; <i>Cymbopogon citrates</i> (DC.)Saapf,	 Lemon Ghas	Rare (as per ENVIS center on floral diversity)	Kalsi	150	Shyampur	50	Kalika	120				320	264 (Dwarson); 100 (RET plot, Shyampur); 41 (Aromatic Grass zone, Haldwani); 19 (Aromatic species project site, Haldwani)	744	Medicinal and Beverages.	Maritime Southeast Asia.
18A	Poaceae; <i>Cymbopogon citratus</i> var. Krishana	 Krishana grass												20(Aromatic species project site, Lalkuan)	20	Essential Oil	









19	Poaceae; <i>Thysanoleana maxima</i> (Roxb.) Kuntze	 Oass ghas											287 (Dwarson); 4(Grass demonstation plot, Haldwani); 10 (Grass Demostration Plot, Shyampur	301	Soil Conservation	China, India, Myanmar, Nepal and Sri Lanka.
20	Poaceae; <i>Agrostis stolonifera</i> L.	 Babila ghas	Least Concern (as per IUCN Red list of Threatened species)										280 (DwarsonNursery); 6 (Grass demonstation plot, Haldwani)	286	Soil Conservation and Biofiltration	Eurasia and Nort Africa.
21	Poaceae; <i>Eragrotis polsia</i> (L.)P. Beauv.	 Love Ghas											735 (Dwarson Nursery)	735	Soil conservation.	Eurasia and Africa.
22	Poaceae; <i>Cortaderia selloana</i> (Schult. & Schult. f.) Asch. & Graebn.	 Pampas Ghas											15 (Dwarson Nursery)	15	Soil Conservation and Ornamental.	Southern America and Pampas region.
23	Cyperaceae; <i>Cyperus rotundus</i> L.	 Motha Ghas	Least Concern (as per IUCN Red list of Threatened species)										50 (Dwarson Nursery)	50	Medicinal	Africa, Southern and Central Europe and Southern Asia.
24	Poaceae; <i>Spartina pectinate</i> Bosc ex Link	 Piary ghas											50 (Dwarson Nursery)	50	Soil Conservation	North America, including Central and Eastern Canada.
25	Cyperaceae <i>Carex cruciata</i> Wahl.	 Kans Ghas											30 (Dwarson Nursery)	30	Soil Conservation	India, China, Nepal, Japan, Tibet and Myanmar.
26	Poaceae; <i>Miscanthus nepalensis</i> (Trinius) Hackel	 Fairy Ghas		Patalhod	100								35 (Dwarson Nursery)	135	Soil Conservation and Ornamental	Himalayas








27	Poaceae; <i>Muhlenbergia lindhmeri</i> Hitchc.	 Muhali Ghas										45 (Dwarson Nursery)		45	Soil Conservation and Ornamental	North America, northern Mexico and Texas.
28	Poaceae; <i>Setaria pumila</i> (Poir.) Roem. & Schult.	 Pigeon Ghas										60 (Dwarson Nursery)		60	Soil Conservation	Native to Europe, but it is known throughout the world as a common weed.
29	Poaceae; <i>Paspalum dilatatum</i> Poir.	 Dalis Ghas										55 (Dwarson Nursery)		55	Soil Conservation	Native to Brazil and Argentina.
30	Poaceae; <i>Panicum virgatum</i> L.	 Panic Ghas										18 (Dwarson)		18	Soil Conservation	Native to North America.
31	Poaceae; <i>Cymbopogon flexuosus</i> (Nees ex Steud.) W. Watson	 Lemon Krishna Ghas										50 (Dwarson); 50 Bhujiyaghat (Aromatic plants); 66 (Aromatic species project site, Lalkuan)		166	Medicinal, Beverages and Perfumery	India, Sri Lanka, Myanmar and Thailand.
32	Poaceae; <i>Cymbopogon flexuosus</i> var. <i>kaveri</i>	 Kaveri nimbu grass										6(Aromatic species project site, Lalkuan)		6	Cooking	Developed by (CSIR CIMAP, Lucknow).
33	Poaceae; <i>Pennisetum orientale</i> L. C. Rich	 Bimausiya Ghas										60 (Dwarson); 6 (Grass demonstration plot, Haldwani)		66	Soil Conservation	North West Asia and North Africa.
34	Cyperaceae; <i>Cyperus eragrostis</i> Lam.	 Sage Ghas										50 (Dwarson)		50	Soil Conservation	Europe, South Africa, North America and Himalaya.

35	Poaceae; <i>Saccharum arundinaceum</i> Retz	 Kans Ghas											8 (Dwarson)		8	Soil Conservation	India, Myanmar, Sri Lanka and Thailand.
36	Poaceae; <i>Elucine indica</i> (L.) Gaertn	 Piraliya Ghas											45 (Dwarson) 10(Grass demonstration plot, Haldwani)		55	Soil Conservation and Edible	Distributed throughout the warmer areas of the world.
37	Poaceae; <i>Paspalum vaginatum</i> Sm.	 Salam ghas											60 (Dwarson)		60	Soil Conservation	Native to the Americas.
38	Cyperaceae; <i>Cyperus esculentus</i> L.	 Nut Ghas											40 (Dwarson)		40	Soil Conservation	Indian Subcontinent
39	Poaceae; <i>Agrostis idahoensis</i> Nash Syn. <i>A. tenuis</i> Sibth.	 Brant Ghas											30 (Dwarson)		30	Soil Conservation	Europe and parts of Western and Central Asia
40	Poaceae; <i>Erianthus giganteum</i> (Walter) P.Beauv	 Plum Ghas											20 (Dwarson)		20	Soil Conservation and Ornamental	New York, Kentucky, Florida.
41	Poaceae; <i>Tripsacum dactyloides</i> (L.) L.	 Fakachi Ghas											60 (Dwarso)		60	Soil Conservation	Eastern United States to northern South America








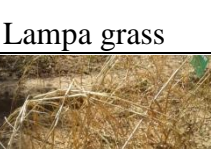
42	Poaceae; <i>Sorgham sp.</i>	 Chari Ghas											500 (Dwarson)		500	Fodder and Biofuels	
43	Cyperaceae; <i>Eriophorum comosum (Wall.) Nees.</i>												70 (Dwarson)		70	Soil Conservation	India, Nepal, China, Vietnam and Pakistan
44	Poaceae; <i>Spartina cynosuroides (L.)Roth</i>	 Big cordgrass		Kalsi	70								70		70	Forage	East Coast and Gulf Coast of the United States of America
45	Poaceae; <i>Phalaris arundinacea L.</i>	 Reed canary grass	Least Concern (IUCN)										5 (Grass Demostration Plot, Shyampur)		5	Ornamental and medicinal	Europe, Asia and Africa
46	Poaceae; <i>Saccharum bengalense Retz.</i>	 Sarkanda											5 (Grass Demostration Plot, Shyampur)		5	Fodder	Northern India, Afghanistan, Pakistan and Iran
47	Cyperaceae; <i>Cyperus scarious R. Br.</i>	 Nagar Motha											5 (Grass Demostration Plot, Shyampur)		5	Medicinal	Native to India's Madhya Pradesh. One of the most invasive weeds, world wide distribution
48	Poaceae; <i>Coix lacryma jobi L.</i>	Vajanti 											5 (Grass Demostration Plot, Shyampur)		5	Medicinal	Southeast Asia



49	Poaceae; <i>Eulaliopsis binata</i> (Retz.) C.E.Hubb.	Bhabar grass 										5 (Grass Demonstration Plot, Shyampur)		5	Ornamental and Paper Pulp	China, Nepal, India, Bhutan and Myanmar.
50	Poaceae; <i>Danthonia cachemyriana</i> Jaub. & Spac			Mandal	50							50		50	Soil conservation	India, Nepal China and Pakistan.
51	Poaceae; <i>Dactylis glomerata</i> L.											20 (Grass demonstration plot, Haldwani)		20	Soil Conservation and Fodder	Europe, temperate Asia and Northern Africa.
52	Poaceae; <i>Cymbopogon nardus</i> (L.) Rendle	 Citrolenna Ghas										22 (Aromatic grass zone, Haldwani)		22	Aromatic	Tropical Asia
53	Poaceae; <i>Cymbopogon schoenanthus</i> Spreng.	Rosa grass 										50(Aromatic species project site, Lalkuan)		50	Medicinal	Southern Asia and Northern Africa.
54	Poaceae; <i>Apluda mutica</i>	Bhangura grass 													Fodder	Native to Asia
55	Unidentified			Dwarson	75									75		
56	Unidentified			Dwarson	20									20		

57	Unidentified			Dwarson	70										70		
58	Poaceae; <i>Danthonia cachemyriana</i> Jaub. & Spac		–	Mandal	50							50			50	Soil Conservation	India, Nepal China and Pakist
59	Poaceae; <i>Crysopogon gryllus</i>	Salam Ghass 		Patalhod	250							250			250	Fodder and House making	Native to India
60	Poaceae; <i>Thysanolaena maxima</i>	Ons ghass 		Patalhod	13							13			13	For broom making	Native to Asia
61	Poaceae; <i>Eragrostis unioniloides</i>	Love grass 		Patalhod	100							100			100	Fodder	Native to Asia
62	Poaceae; <i>Erinthus rufipilus</i>			Patalhod	100							100			100	Fodder	Native to Asia
63	Poaceae; <i>Typha elephantina</i>												5 (Grass Demostration Plot, Shyampur); 2 Aquatic Demonstraruin Area (Haldwani)		7	Medicinal	Native range is Sahara to China
64	Cyperaceae; <i>Schoenoplectus lateralis</i> Roxb. (Sedge)		–										20 (Dwarson)		20	Soil Conservation	Europe to Central Siberia

65	Poaceae ; <i>Miscanthus sinensis</i> (Andersson)	 Zebra grass											5 (Dwarson)		5	Ornamental	Native to eastern Asia throughout most of China, Japan, Taiwan and Korea
66	Poaceae; <i>Phalaris arundinacea</i> (L.)												10 (Dwarson)		10	Pollution control	Native to North America
67	Aspargaceae; <i>Ophiopogon planiscarpus</i> (Nakai)	 Mondo grass											10 (Dwarson)		10	Ornamental	Native to Japan.
68	Poaceae; <i>Imperata cylindrical</i> L.	 Cogon grass											20 (Dwarson)		20	Medicinal	Native to Asia, cogon grass (<i>Imperata cylindrical</i>) is common in the humid tropics and has spread to the warmer temperate zones worldwide.
69	Poaceae; <i>Pogonatherum crinitum</i> (Thunb)	 Komalromi											20 (Dwarson)		20	Soil Conservation	Native range is Madagascar, Tropical & Subtropical Asia to Marianas
70	Cyperaceae; <i>Fimbristylis dichotoma</i> (L)	 Ghuen											20 (Dwarson)		20	Soil Conservation	It is found in temperate to tropical regions worldwide
71	Cyperaceae; <i>Cyperus iria</i> (L)	 Motha											10 (Dwarson)		10	Medicinal	It is native of tropical Asia and later widespread in subtropical Asia.

72	Poaceae; <i>Dichanthium annulatum</i> (Forssk)	 Marvel grass											20 (Dwarson)		20	Soil Conservation	It is a tropical grass originally from North Africa and India.
73	Cyperaceae; <i>Carex orthinopoda</i> Willd.												15 (Dwarson)		15	Ornamental	Its native range is Europe to Turkey
74	Cyperaceae; <i>Isolepis cernua</i> (Vahl) Roem & Schult	Iso lapes grass 											4 (Dwarson)		4	Ornamental	Native to many regions of the world, including parts of Australasia, Eurasia, Africa, and North and South America
75	Cyperaceae; <i>Cyperus compressus</i> L.												10 (Dwarson)		10	Medicinal	It is native of tropical Asia and later widespread in subtropical Asia.
76.	Poaceae; <i>Echinola colona</i> L.												8 (Dwarson)		8	Soil Conservation	It is Native to Tropical and Subtropical Asia
77	Poaceae; <i>Alloteropsis cimicina</i> C.presl	 Summer grass											20 (Dwarson)		20	Soil Conservation	It is Native to Tropical and Subtropical Asia
78.	Unidentified												20 (Dwarson)		20		
79.	Poaceae; <i>Cymbopogon distans</i> Spreng.												20 (Dwarson)		20	Soil Conservation	It is native to Warm Temperate and subtropical Asia.







80.	Unidentified												10 (Dwarson)		10		
81.	Poaceae; <i>Sporobolus indicus</i> (L)	 Smut grass											20 (Dwarson)		20	Soil Conservation	Native from Columbia.
82.	Poaceae; <i>Eulaliopsis binata</i> (Retz.) C.E Hubb												25 (Dwarson)		25	Soil Conservation	Native range is Afghanistan to China.
83.	Poaceae; <i>Panicum grande</i>	 Panicum											10 (Dwarson)		10	Soil Conservation	Native from tropical Regions
84.	Poaceae; <i>Bromus arvensis</i> L.	 Brome grass											10 (Dwarson)		10	Soil Conservation	Native to Southern and Central Europe.
85.	Poaceae; <i>Eleusine aegyptiaca</i> L.	 Crowfoot grass		Haldwan i	10								10		10	Medicinal	Native to Africa
86.	Poaceae; <i>Aristida cyanantha</i> Steud.	 Lampa grass											10 (Dwarson)		10	Soil Conservation	Native Afghanistan to Nepal.
87.	Poaceae; <i>Sorghum halepense</i> (L)	 Jhonsan grass											12 (Dwarson)		12	Soil Conservation and Fooder	Native to Mediterranean Region.

88.	Poaceae; <i>Neyraudia arundinacea</i> (L)												10 (Dwarson)		10	Soil Conservation	Native to Subtropical Asia.
89.	Poaceae; <i>Chrysopogon gryllus</i> (L)												20 (Dwarson)		20	Soil Conservation	Native to Europe and Tropical, Temperate Asia.

- **6 Species are yet to be indentified**

VIII. Orchid Species








Orchid Species are being conserved at Lumti (Pithoragarh Range), Gaja (Jeolikote Range) and Mandal (Gopeshwar Range).









S.No.	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt./ Indian Biodiversity Portal)	Nursery								Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name													Total
				1		2		3		4							
Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant										
1.	Orchidaceae ; <i>Calanthe plantaginea</i> Lind			Mandal	20							20			20	Ornamental	Western and Eastern Himalayas (India), Pakistan, Nepal and China.
2.	Orchidaceae; <i>Bulbophyllum cariniflorum</i> Reichb.f.		Least concern (IUCN Red List)	Mandal	2							2			2	Ornamental	Western Himalayas (India), Pakistan, Nepal, China and Japan
3.	Orchidaceae; <i>Calanthe tricarinata</i> Lindl.	Syuru 	Comes under Appendix II of CITES.	Mandal	10	Patalhod	30	Devvan	03			43	50 (Trishula comp.19 B K.W.L.D)		93	Medicinal	Western Himalayas (India), Pakistan, Nepal and China
4.	Orchidaceae; <i>Coelogyne cristata</i> Lindl	Gongya 	Comes under Appendix II of CITES, Threatened(ENVIS)	Mandal	25							25	200 (Orchid In situ Conservation cum demo plot Pithoragrah)		225	Medicinal	Western and Eastern Himalayas (India), Nepal, Bhutan and China
5.	Orchidaceae; <i>Coelogyne stricta</i> (D. Don) Schltr.		Comes under Appendix II of CITES	Mandal	20							20	Multiple (Khalla van panchayat); 250(Orchid In situ Conservation cum demo plot Pithoragrah)		270	Ornamental	Western and Eastern Himalayas (India), Nepal and Myanmar.
6.	Orchidaceae ; <i>Cymbidium iridioides</i> D.Don	Iris Orchid 	Comes under Appendix II of CITES	Mandal	20	Tangsa	10					30	Multiple (Khalla van panchayat) 50 (Orchid In sit Conservation cum demo Plot ,Pithoragrah); 4 (Orchidarium, Haldwani)		84	Ornamental	Western Himalayas (India), Bhutan, Nepal, and Eastern Himalayas.

7.	Orchidaceae; <i>Dendrobium amoenum</i> Wall. ex Lindl.		Comes under Appendix II of CITES	Mandal	30	Dwarson	5	Shyampur	05		40	50(Orchid In situ Conservation cum demonstration plot, Pithoragrah); 2 (Orchidium, Shyampur)	92	Ornamental	Western Himalayas (India), Bhutan, Nepal and Bangladesh.
8.	Orchidaceae; <i>Dendrobium fimbriatum</i> Hook. Syn. <i>D. normale</i> Falc.		Indeterminate (ENVIS Endemic and Threatened plant Taxa of India); Comes under Appendix II of CITES	Mandal	30						30	Multiple (Khalla van panchayat) 50(Orchid In situ Conservation cum demonstration plot Pithoragrah)	80	Ornamental	Endemic Flowernig Plants of Uttarakhand (A Checklist) B.P. Uniyal.
9.	Orchidaceae; <i>Eria alba</i> Lindl.		Comes under Appendix II of CITES	Mandal	20						20	100 (Orchid In situ Conservation cum demonstration plot, Pithoragarh)	120	Ornamental	Western Himalayas (India), Nepal and Bhutan.
10.	Orchidaceae; <i>Eria spicata</i> (D. Don) Hand. Mazz.			Mandal	15	Tangsa	4	Dwarson	5		24	Multiple (Khalla van panchayat)	24	Ornamental	Western Himalayas (India), Vietnam, Laos, Nepal and China.
11.	Orchidaceae; <i>Goodyera repens</i> (L.) R. Br.	Girwara 		Mandal	6	Patalhod	30	Devvan	05		41		41	Medicinal	Western and Eastern Himalayas (India), Nepal, Pakistan and China.
12.	Orchidaceae; <i>Habenaria intermedia</i> D. Don	 Ridhi	Comes under Appendix II of CITES ; Collection absolutely Prohibited by Uttarakhand Government	Mandal	4						4	50(Ashtwarga species demo plot, Harkot, Munsyari)	54	Medicinal	Western Himalayas (India), Nepal and China.

13.	Orchidaceae; <i>Kingidium taenialis</i> (Lindl.) P.F.Hunt			Mandal	1						1			1	Ornamental	Western Himalayas (India), Nepal and Myanmar.
14.	Orchidaceae; <i>Malaxis acuminata</i> D. Don	Jeevak 	Comes under Appendix II of CITES ; Collection absolutely Prohibited by Uttarakhand Government	Mandal	35						35	50(Ashtwarga spcies demo plot, Harkot, Munsyari)		85	Medicinal	Western and Eastern Himalayas (India), Nepal, China, Thailand and Myanmar.
15.	Orchidaceae; <i>Malaxis muscifera</i> (Lindl.) Kuntze	 Rishbhak	Vulnearable (IUCN) ; Comes under Appendix II of CITES; Collection absolutely Prohibited by Uttarakhand Government	Mandal	2	Dwarson	5	Devvan	03		10	50(Ashtwarga spcies demo plot, Harkot, Munsyari)		55	Medicinal	Western and Eastern Himalayas (India), Nepal and Pakistan.
16.	Orchidaceae; <i>Neottia listeroides</i> Lindl.			Mandal	3						3			3	Ornamental	Western and Eastern Himalayas (India).
17.	Orchidaceae; <i>Pholidota articulata</i> Lindl.	 Jeevanti	Comes under Appendix II of CITES	Mandal	40	Tangsa	20				60	100(Orchid In situ Conservation cum demonstration plot, Munsyari); 5(Gaja) Orchidarium; 4 (Orchidarium, Haldwani)		169	Medicinal	Western and Eastern Himalayas (India), China, Myanmar and Malayasia.
18.	Orchidaceae; <i>Habenaria edgeworthii</i> (Hook.f. ex Collett) R.K.Gupta	Viriddhi 	Collection absolutely Prohibited by Uttarakhand Government	Mandal	10						10			10	Medicinal	Western Himalayas (India), Nepal and Pakistan.
19.	Orchidaceae; <i>Satyrium nepalense</i> (Lindl.) Hook.f.	Salam mishri 	Comes under Appendix II of CITES ; Collection absolutely Prohibited by Uttarakhand Government	Mandal	25	Patalhod	5	Devvan	02		32			32	Medicinal	Western and Eastern Himalayas (India), China, Myanmar and Nepal.

20.	Orchidaceae; <i>Thunia alba</i> (Lindl.)Rchb. f.		Comes under Appendix II of CITES	Mandal	2						2	50 (Orchid In situ Conservation cum demonstration plot)	52	Ornamental	Western Himalayas (India), Nepal and China.
21.	Orchidaceae; <i>Malaxis purpureum</i> (Lindl)Kuntze			Mandal	15						15		15	Ornamental	Western Himalayas (India).
22.	Orchidaceae; <i>Habenaria stenopetala</i> Lindl.			Mandal	3						3		3	Ornamental	Western Himalayas (India).
23.	Orchidaceae; <i>Platanthera cleavigera</i> Lindl.		Comes under Appendix II of CITES	Mandal	1	Patalhod	5				6		6	Ornamental	Western Himalayas (India).
24.	Orchidaceae; <i>Bulbophyllum umbellatum</i> Lindl.			Mandal	30						30		30	Ornamental	Western Himalayas (India).
25.	Orchidaceae; <i>Oreorchis indica</i> (Lindl.) Hook. f.		Indeterminate (ENVIS Endemic and Threatened plant Taxa of India)	Mandal	3						3		3	Ornamental	Western Himalayas (India), Nepal, China and Taiwan.
26.	Orchidaceae; <i>Luisia trichorhiza</i> (Hook.) Blume		Comes under Appendix II of CITES	Mandal	20						20	50(Orchid In situ Conservation cum demonstration plot)	70	Ornamental	Western Himalayas (India).
27.	Orchidaceae; <i>Vanda cristata</i> Linn.			Mandal	8						8	50 (Orchid In situ Conservation cum demonstration plot); 2 (Orchidarium, Haldwani)	60	Ornamental	Western Himalayas (India)

28.	Orchidaceae; <i>Habenaria aitchisonii</i> Rchb. f.			Mandal	6						6			6	Ornamental	Western and Eastern Himalayas (India), and China.
29.	Orchidaceae; <i>Habenaria marginata</i> Colebr.	 Haldya – Jari		Mandal	4						4			4	Medicinal	Western and Eastern Himalaya (India), China and Yunnan.
30.	Orchidaceae; <i>Acampe rigida</i> (Buch. Ham. ex Sm.) P.F.Hunt		Comes under Appendix II of CITES									50 (Orchid In situ Conservation cum demonstration plot)		50	Ornamental and Medicinal.	Indian subcontinent
31.	Orchidaceae; <i>Aerides odorata</i> Lour.		Endangered (IUCN Red List 3.1); Comes under Appendix II of CITES									50 (Orchid In situ Conservation cum demonstration plot)		50	Ornamental and Aromatic.	Western and Eastern Himalayas (India), Nepal and Bangladesh.
32.	Orchidaceae; <i>Herminium sp</i>		Comes under Appendix II of CITES	Patalthod	5						5			5	Medicinal	Western Himalayas
33.	Orchidaceae; <i>Liparis caespitosa</i> (Lam)Lindl.		Comes under Appendix II of CITES	Mandal	5							10 (Khalla Van Panchayat)		15	Ornamental	Africa, Himalayas and Southeast Asia.
34.	Orchidaceae; <i>Oberonia pachyrachis</i> Reichb.f. ex Hook. f.		Comes under Appendix II of CITES	Mandal	8							25(Orchid In situ Conservation cum demonstration plot, Pithoragarh); 12(Gaja Orchidarium); 2 (Orchidarium, Haldwani);4 (Khalla Van Panchayat)		51	Ornamental	Western Himalayas, Nepal, China Myanmar and Thailand.







35.	Orchidaceae; <i>Pholidota imbricata</i> Hook.		Comes under Appendix II of CITES	Mandal	10								3 Orchidarium (Haldwani); 5 (Khalla Van Panchayat)	18	Ornamental	Tropical and subtropical Asia to the southwest Pacific.
36.	Orchidaceae; <i>Rhynchostylis retusa</i> (L.) Blume		Comes under Appendix II of CITES	Mandal	1	Tangsa	2						4 Orchidarium (Haldwani); 1 (Khalla Van Panchayat)	8	Ornamental	Indian subcontinent.
37.	Orchidaceae; <i>Spiranthes sinensis</i> (Pers.) Ames	Spiranthes 	Comes under Appendix II of CITES	Patalthod	5							5	50(RET demonstration plot, Harkot, Munsyari)	55	Medicinal	Western and Eastern Himalayas (India) Australia.
38.	Orchidaceae; <i>Phaius tankervilleae</i> (Banks) Blume	Red cane orchid 	Threatened Uttarakhand Biodiversity Board										2 (RET plot, Shyampur), 1 (Haldwani) Orchidarium, Haldwani)	3	Medicinal	Asia and islands in the Pacific Ocean.
39.	Orchidaceae; <i>Dendrobium auriculatum</i> Ames & Quisumb												2(Gaja Orchidarium)	2	Ornamental	Native to Philippines.
40.	Orchidaceae; <i>Dendrobium sp.</i>												5 (Orchidarium, Haldwani)	5	Ornamental	
41.	Orchidaceae; <i>Paphiopedilum gratrixianum</i>												2(Orchidarium, Haldwani)	2	Ornamental	Laos and Vietnam.
42.	Orchidaceae; <i>Vanda testacea</i> (Lindl.) Rchb.f.			Mandal	1							1	1 (Khalla van panchayat)	2	Medicinal	India , Myanmar

43.	Orchidaceae; <i>Liparis rostrata</i> Reichb.f.			Mandal	10	Devvan	03	Patalthod	5			18			18	Medicinal	India , Nepal and China
44.	Orchidaceae; <i>Calanthe puberula</i> Lindl.			Mandal	4							4			4	Medicinal	India , Pakistan , Nepal and China
45.	Orchidaceae; <i>Aerides rigida</i>												2 (Orchidarium, Haldwani)		2	Aromatic	Native to China, India, Assam, Bangladesh, Nepal, Sri Lanka, Andaman Islands, Cambodia, Laos, Myanmar, Thailand, Vietnam, Malaya, and the Philippines
46.	Orchidaceae; <i>Vanilla planifolia</i>												1 (Orchidarium, Haldwani)		1	Aromatic	Native to Mexico and Central America
47.	Orchidaceae; <i>Cymbidium erythraeum</i> Lindl.			Mandal	10										10	Ornamental	India , Nepal
48.	Orchidaceae; <i>Pleione hookeriana</i> (Lindl.) Rollisson			Mandal	5										5	Medicinal	India , Nepal and Myanmar
49.	Orchidaceae; <i>Oreorchis micrantha</i> Lindl.			Mandal	3										3	Medicinal	India, Nepal and Bhutan






50.	Orchidaceae; <i>Zeuxine flava</i> (Wall. ex Lindl.) Trimen			Mandal	5									5	Ornamental	India, Nepal and China
51.	Orchidaceae; <i>Goodyera procera</i> (Ker Gawl.) Hook			Mandal	10									10	Ornamental	Indo – Malaya to east Asia
52.	Orchidaceae; <i>Paphiopedilum hirsutissimum</i> (Lindl. ex Hook. f.) Stein			Mandal	2									2	Ornamental	Eastern Himalayas and Bhutan
53.	Orchidaceae; <i>Zygopetalum intermedium</i> Lodd. ex Lindl.			Mandal	2							1 (Orchidarium, Haldwani		3	Aromatic	Peru, Bolivia and Brazil
54.	Orchidaceae; <i>Dienia cylindrostachya</i> Lindl			Mandal	4									4	Ornamental	India , Nepal, China and Myanmar
55.	Orchidaceae; <i>Dendrobium monticola</i> P.F. Hunt & Su.			Mandal	10							10 (Khalla van panchayat)		20	Medicinal	Eastern Himalayas
56.	Orchidaceae; <i>Cypripedium cordigerum</i> D. Don	 Lady slipper orchid	Rare (Indian Biodiversity Portal) Comes under Appendix II of CITES	Mandal	8							4 (Mana van panchayat		12	Ornamental	Near Endemic Himalayan region

57.	Orchidaceae; <i>Peristylus goodyeroides</i> (D. Don) Lindl.			Mandal	4									4	Medicinal	India , Sri – Lanka and Myanmar
58.	Orchidaceae; <i>Dactylorhiza hatageriea</i>	 Salampanja	Comes under Appendix II of CITES	Sariatal	5	Devvan	01	Mandal	3			9		9	Medicinal	Near Endemic Himalayas from Pakistan to SE Tibet .
59.	Orchidaceae; <i>Habenaria edgeworthii</i> (Hook.f. ex Collett) R.K.Gupta	Viriddhi 	Collection absolutely Prohibited by Uttarakhand Government	Mandal	10							10	Mana Experiments 60	70	Medicinal	Western Himalaya(India),Nepal and Pakistan
60.	Orchidaceae; <i>Habenaria pectinata</i>	 Comb Habenaria		Patalthod	20									20	Medicinal	Native range is Pakistan to China
61.	Orchidaceae; <i>Brachycorythis obcordata</i>			Patalthod	20									20	Ornamental	Native range is Central India, Himalaya to Myanmar
62.	Orchidaceae; <i>Luisia tristis</i>	 Velvet orchid											2(Gaja) Orchidarium	2	Ornamental	Native to India.

63.	Orchidiaceae; <i>Habenaria ensifolia</i> Lindl.			Mandal	5						5			5	Ornamental	Himalayas
		Sword Leaf Habenaria														
64.	Orchidiaceae; <i>Peristylus duthiei</i> (Hook.f.) Deva & Naithani.			Mandal	4						4			4	Ornamental	Northwest Himalaya
65.	Orchidiaceae; <i>Herminium monorchis</i> (L.) R. Br.			Mandal	8						8			8	Ornamental	Europe , Asia, France to Japan
66.	Orchidiaceae; <i>Pecteilis gigantean</i> Rafin		Threatened(State Biodiversity Board)	Mandal	2						2			2	Aromatic	Broad endemic to India
		Butterfly orchid														
67.	Orchidaceae; <i>Cymbidium macrorhizon</i>		Comes under Appendix II of CITES	Patalhod	20									20	Ornamental	Western Himalaya(India), Nepal and China
68.	Orchidaceae; <i>Diplomeris hirsuta</i>		Comes under Appendix II of CITES Threatened (State Biodiversity Board); Vulnerable (Indian Biodiversity Portal)											2(Gaja Orchidarium)	Ornamental	Endemic to Uttarakhand
		Snow Orchid														







69.	Orchidiaceae; <i>Pleione praecox</i> (Sm.) D. Don			Mandal	5						5			5	Ornamental	West central Himalaya to China
70.	Orchidiaceae; <i>Bulbophyllum affine</i> Wall. ex Lindl.			Mandal	4						4	3 (Khalla van panchayat		7	Medicinal	West Central Himalaya to Nansei shoto
71.	Orchidiaceae; <i>Oberonia pyrifera</i> Lindl.			Mandal	2						2	3 (Khalla van panchayat		5	Ornamental	Tropical Africa, southern Asia including India, China.
72.	Orchidiaceae; <i>Nervilia mackinnonii</i> Schltr.		Comes under Appendix II of CITES	Mandal	2						2			2	Ornamental	Himalaya to China
73.	Orchidiaceae; <i>Platanthera stenantha</i> (J.D.Hooker) Soo			Mandal	2						2			2	Medicinal	Nepal to China
74.	Orchidiaceae; <i>Oreorachis petans</i> Lindl.		Comes under Appendix II of CITES	Mandal	3						3			3	Ornamental	Eastern Asia
75.	Orchidiaceae; <i>Acampe papillosa</i> Lindl.		Comes under Appendix II of CITES	Mandal	1						1	1 (Khalla van panchayat 50(Orchid In situ Conservation cum demonstration plot)		52	Medicinal	Native to Eastern Himalayas.
76.	Orchidiaceae; <i>Bulbophyllum careyanum</i> (Hook) Spreng.		Comes under Appendix II of CITES	Mandal	5						5	10 (Khalla van panchayat100(Orchid In situ Conservation cum demonstration plot)		115	Ornamental	Himalayas.








77.	Orchidiaceae; <i>Coelogyne ovalis</i> Lindl.		Comes under Appendix II of CITES	Mandal	3						4	4 (Khalla van panchayat200 (Orchid In situ Conservation cum demonstration plot)	207	Ornamental	East Asia
78.	Orchidiaceae; <i>Eria lasiopetala</i> Ormerod		Comes under Appendix II of CITES	Mandal	5						5	5 (Khalla van panchayat 100 (Orchid In situ Conservation cum demonstration plot Pithoragarh)	110	Ornamental	Bangladesh east to Hong kong and Southeast Asia.
79.	Orchidiaceae; <i>Flickingeria fugax</i> Seidenf.		Comes under Appendix II of CITES	Mandal	5						5	6 (Khalla van panchayat 50(Orchid In situ Conservation cum demonstration plot, Pithoragarh)	61	Medicinal	Indian subcontinent.
80.	Orchidiaceae; <i>Liparis viridiflora</i> (Blume) Lindl.		Comes under Appendix II of CITES	Mandal	6						6	10 (Khalla van panchayat	16	Ornamental	Indian subcontinent to S. China.
81.	Orchidiaceae; <i>Oberonia ensiformis</i> (Smith) Lindl.		Comes under Appendix II of CITES	Mandal	1						1	2 (Khalla van panchayat	3	Ornamental	Eastern Himalayas, Nepal .
82.	Orchidiaceae; <i>Aeridis multiflora</i> Roxb.		Comes under Appendix II of CITES	Mandal	5	Dwarson	5				10	10Khalla VP 50(Orchid In situ Conservation cum demonstration plot)	70	Ornamental	Southeast Asia.

83.	Orchidiaceae; <i>Gastrochilus calceolaris</i> (Buch. Ham. ex Sm.) D. Don		Critically endangered (IUCN)	Mandal	5						5	2 (Khalla Van Panchayat)		7	Ornamental	Nepal, Bhutan, and China
84.	Orchidiaceae; <i>Cypripedium himalicum</i> Rolfe.	 Himalayan Venus	Endangered (IUCN); Rare (ENVIS Endemic and Threatened plant Taxa of India) ; Rare (Indian Biodiversity Portal)	Mandal	4						4	12 Mana Van Panchayat		16	Ornamental	Indian Himalayan region
85.	Orchidiaceae; <i>Dendrobium Sonia</i>											3 Orchidarium (Haldwami)		3	Ornamental	Native to Java, Sumatra, Thailand and Vietnam.
86.	Orchidiaceae; <i>Phalaenopsis amphitrite</i>											3 Orchidarium (Haldwami)		3	Ornamental	Native to Philippines
87.	Orchidiaceae; <i>Phalaenopsis</i> hybrid											3 Orchidarium (Haldwami)		3	Ornamental	








IX. Fern species:

Fern species are being conserved mainly in Forest research ranges, Kalika, Gaja and Gopeshwar.

S. No	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakh and Govt. / Indian Biodiversity Portal)	Nursery										Experiment Site	Preservati on Plot	Grand Total	Use	Native Region	
				Nursery Name															Total
				1		2		3		4		5							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Cytheaceae; <i>Cyathea spinolosa</i> Wall. ex Hook.	 Flying spider monkey tree fern	Threatened species (as per ENVIS centre on Floral Diversity Hosted by Botanical Survey of India/ Threatened (State Biodiversity Board)	Mandal	10	Tangsa	15							25	4 (Kaligarh block – 17)		29	Ornamental	Pan endemic
2	Blechnaceae; <i>Woodwardia unigemmata</i> (Makino) Nakai			Mandal	1									1	2 (Kaligarh block – 17)		3	Soil and Moisture Conservation	Nativeto Western North America.
3	Pteridaceae; <i>Pteris cretica</i> Linn.	 Ribbon Fern		Mandal	10									10	10 (Kaligarh block – 17); 8 (Jurassic Park, Haldwani)		18	Medicinal and Manure	Native to Europe, Asia and Africa.
4	Dennstaedtiacea e; <i>Pteridium aquilinum</i> (L.) Kuhn.	 Eagle fern	Least Concern (IUCN)	Mandal	8									8	5 (Fern demonstrati on plot, Shyampur); 5 (Kaligarh block – 17)		18	Soil and Moisture Conservation	Native to India.
5	Pteridaceae; <i>Pteris wallichiana</i> Aghard.			Mandal	15									15			15	Soil and Moisture Conservation	Native to Himalayas.
6	Dryopteridoidea e; <i>Dryopteris wallichiana</i> (Spreng. L.) Hayland	 Basket fern		Mandal	6									6			6	Soil and Moisture Conservation	Native to Himalayas.









7	Osmundaceae; <i>Osmunda japonica</i> Thunb.	 Royal Fern	Least Concern(IUCN)	Mandal	2								2			2	Soil and Moisture Conservation	Endemic to central and southern India.
8	Osmundaceae; <i>Osmunda claytoniana</i> (L.) Metz. & Rouhan	 Avrudh fern		Mandal	2								2			2	Soil and Moisture Conservation	Native to Eastern Asia and eastern North America, in the Eastern United States and Eastern Canada
9	Pteridaceae; <i>Pteris vittata</i> Linn.	 Ladder brake fern	Least Concern (IUCN) Least concern (as per Indian Biodiversity Portal)	Mandal	2	Tangsa	2	Shyampur	05				7	5 (Kaligarh block – 17); 5 (Fern demonstration plot); 5 Gaja (Fernery); 4 (Jurassic Park, Haldwani)	(50)Pangot	78	Ornamental	Indigenous to Asia, southern Europe, tropical Africa and Australia.
10	Dryopterideaceae; <i>Polystichum squarrosum</i> (D.Don) Fe.			Mandal	15								15	25 (Kaligarh block – 17); 4 Gaja (Fernery); 2 (Jurassic Park, Haldwani)	(50)Pangot	96	Medicinal and Ornamental	
11	Athyriaceae; <i>Diplazium esculentum</i> (Retz.) Sw.	 Lingura	Least Concern (IUCN) Least concern (as per Indian biodiversity portal)	Mandal	6								6	100 (Kaligarh block – 17); 4 Gaja(Fernery)	(50)Pangot	160	Edible and Medicinal	Native to Eastern and southeastern Asia.
12	Cryptogrammaeae; <i>Onychium contiguum</i> Wall. ex Hope			Mandal	6								6	25 (Kaligarh block – 17)		31	Fodder and Manure	Native range is Pakistan to China and Indo China.
13	Thelypteridaceae; <i>Pseudocyclosorus</i> spp.			Mandal	8								8			8	Soil and Moisture Conservation	

14	Lycopodiaceae; <i>Huperzia pulcherrima</i> (Wall.ex Hook. & Grev.) T. Sen & U. Sen			Mandal	1											1			1	Soil and Moisture Conservation	Native to India and China.
15	Vittariaceae; <i>Vittaria flexuosa</i> Fee			Mandal	1														1	Soil and Moisture Conservation	
16	Lindsaeaceae; <i>Lindsaea spp.</i>			Mandal	8														8	Soil and Moisture Conservation	
17	Aspleniaceae; <i>Asplenium dalhousiae</i> Hook.	 Vishkanya												25 (Kaligarh block – 17); 10 Gaja (Fernery)	(25) Pangot				60	Medicinal	Native to northern Mexico and disjunction to the Himalaya
18	Adiantaceae; <i>Adiantum venustum</i> D.Don	Himalayan Maidenhair Fern 		Shyampur	05									10 (Kaligarh block – 17); 15 Gaja (Fernery); 5 (Jurassic Park, Haldwani)	(25) Pangot				60	Medicinal	Native to China and the Himalayas
19	Hemionitidaceae ; <i>Anogramma leptophylla</i> (Linn.) Link.	Annual fern 												10 (Kaligarh block – 17)					10	Medicinal	Native to India, South America, Europe, Russia, Iran and Mediterranean region
20	Sinopteridaceae; <i>Cheliantus dubia</i> Hope	Rock fern 												20 (Kaligarh block – 17); 2Gaja(Fernery)					22	Ornamental	Native to India (East Himalayas), Nepal, Sri Lanka, China and Taiwan
21	Thelypteridaceae; <i>Christella arida</i> (D.Don) Holtt.													5 (Kaligarh block – 17)					5	Ornamental	Native to India (N nd W Himalayas), Nepal, Sri Lanka, China and Taiwan





22	Hemionitidaceae ; <i>Coniogramme indica</i> Fee														25 (Kaligarh block – 17)		25	Ornamental	Native to India
23	Gleicheniaceae; <i>Dicranopteris linearis</i> Holttum														20 (Kaligarh block – 17)		20	Medicinal	Native to Hawaii
24	Dryopterideaceae; <i>Dryopteris edwardsii</i> Fraser – Jenk.	Wood fern 													25 (Kaligarh block – 17)		25	Ornamental	Native range is Pakistan to China (Yunnan), Taiwan.
25	Dryopterideaceae; <i>Dryopteris gamblei</i> (Hope)C.Chr.	Wood fern 													100 (Kaligarh block – 17)		100	Ornamental	
26	Dryopterideaceae; <i>Dryopteris nigropaleacea</i> (Fraser – Jenk.)Fraser – Jenk.	Wood fern 													100 (Kaligarh block – 17); 2Gaja(Ferriery)	(50)Pangot	152	Ornamental	Endemic to parts of Afghanistan, Pakistan, Western Nepal, and Himachal Pradesh
27	Dryopterideaceae; <i>Dryopteris reductopinnata</i> Basu & Panigarhi	Basket fern 													2 (Kaligarh block – 17)		2	Ornamental	
28	Athyriaceae; <i>Gymnocarpium fedtschenkoanum</i> Pojark.	 Western oak fern													100 (Kaligarh block – 17)		100	Ornamental	Native range is Afghanistan to Central Asia and W. Nepal

29	Polypodiaceae; <i>Lepisorus excavatus</i> (Willd.) Ching.														10 (Kaligarh block – 17)		10	Ornamental	South Africa to central Africa
30	Polypodiaceae; <i>Microsorium membranaceum</i> (D. Don) Ching.	Shield fern 													8 (Kaligarh block – 17); 2Gaja(Ferney)	(10)Pangot	20	Medicinal	Native range is Tropical & Subtropical Asia
31	Thelypteridaceae; <i>Phegopteris connectilis</i> (Michx.) Watt.	Long beech fern 													100 (Kaligarh block – 17)		100	Ornamental	Native to Europe, Asia and North America.
32	Dryopterideaceae; <i>Polystichum obliquum</i> (D.Don) Moore														25 (Kaligarh block – 17); 3Gaja(Ferney)	(10)Pangot	38	Ornamental	Native to western North America
33	Dryopterideaceae; <i>Polystichum yunnanense</i> Christ														100 (Kaligarh block – 17)		100	Ornamental	Native range is Yemen, Afghanistan to China.
34	Polypodiaceae; <i>Pyrrosia costata</i> (Presl.ex Bedd.) Tagawa & Iwats														10 (Kaligarh block – 17)		10	Ornamental	
35	Polypodiaceae; <i>Phymatopteris ebenipes</i> (Hook.)Pic. Ser														10 (Kaligarh block – 17)		10	Ornamental	Native to India, Bhutan, China and Tibet.
36	Pteridaceae; <i>Pteris aspericaulis</i> Wall. ex Ag.	Three coloured brake fern 													100 (Kaligarh block – 17); 2Gaja(Ferney)	(50)Pangot	152	Medicinal and Manure	Native to the Himalayas.










37	Tectariaceae; <i>Tectaria</i> <i>coadunata</i> (J. Smith) C. Chr.													10 (Kaligarh block – 17); 2Gaja(Fernery)		12	Medicinal	Native to Africa
38	Adiantaceae; <i>Adiantum</i> <i>philippense</i> Linn.	 Walking maidenhair fern												25 (Kaligarh block – 17); 5 (Fern demonstration plot)		30	Medicinal	Native to Asia and Africa
39	Adiantaceae; <i>Adiantum</i> <i>edgeworthii</i> Hook	Mayurshikha 												5 (Kaligarh block – 17); 15Gaja(Fernery)	(50)Pangot	70	Medicinal	Native to Himalaya and China.
40	Dryopterideaceae; <i>Dryopteris</i> <i>lepidopoda</i> Hayata	Sunset fern 												5 (Kaligarh block – 17)		5	Ornamental	Native to India, Taiwan, and China.
41	Polypodiaceae; <i>Arthromeris</i> <i>himalayensis</i> Ching ex Mehra & Bir													2 (Kaligarh block – 17)		2	Medicinal	
42	Polypodiaceae; <i>Polypodiastrium</i> <i>argutum</i> (Wall. ex HooK.)ching													8 (Kaligarh block – 17)		8	Ornamental	Native range is Himalaya to S. China and Indo China
43	Aspleniaceae; <i>Asplenium</i> <i>nidus</i> Linn.	Bird Nest fern 												2(Kaligarh block – 17)		1	Ornamental	Native to tropical areas from Polynesia and Hawaii west to Southeast Asia, Australia, and Madagascar
44	Polypodiaceae; <i>Microsorium</i> <i>punctatum</i> (L.) Copel.	 Elkhorn fern/ Fish tail fern												10 (Kaligarh block – 17)		10	Medicinal	Native to Asia, Africa, Australia









45	Pteridaceae; <i>Pteris ensiformis</i> Burm.f.	 Silver lace fern												12 (Kaligarh block – 17)		12	Ornamental	Asia and the Pacific.
46	Nephrolepidaceae; <i>Nephrolepis sp.</i>	 Curly fern												10 (Kaligarh block – 17); 5 (Jurassic Park, Haldwani)		15	Ornamental	
47	Polypodiaceae; <i>Platyserium sp.</i>	Staghorn fern 												1 (Kaligarh block – 17)		1	Ornamental	
48	Gleicheniaceae; <i>Gleichenia gigantea</i> Wall. ex Hook.													5 (Kaligarh block – 17)		5	Ornamental	North East, India
49	Asparagaceae; <i>Asparagus setaceus</i> (Kunth) Jessop	 Common asparagus fern												4 (Fern demonstrati on plot, Shyampur); 5 (Kaligarh block – 17)		9	Ornamental	Native to Southern Africa & Asia
50	Ophioglossaceae ; <i>Helmeinthostachy s zeylanica</i> (L.)Hook	 Kamraj	Shyampur	20									20	5 (Fern demonstrati on plot, Shyampur)		25	Ornamental	Native to Southeastern Asia and Australia
51	Dryopterideaceae ; <i>Dryopteris filix mas</i> (L.) Schott	 Male fern	Shyampur	05									05	5 (Fern demonstrati on plot, Shyampur); 2 Gaja (Fernery); 2 Gaja (Fernery)	(25) Pangot	39	Ornamental	Native to Europe, Asia, and North America
52	Dryopteridaceae ; <i>Polystichum longipaleatum</i> Christ													4 Gaja (Fernery)	(50)Pangot	54	Ornamental	Native to Uttarakhnad and Eastern India

53	Pteridaceae; <i>Coniogramme intermedia</i> Shishi														5 Gaja (Fernery)	(50)Pangot	55	Medicinal and edible	Native to India
54	Pteridaceae; <i>Pteris excelsa</i> Gaudich.														3 Gaja (Fernery)	(50)Pangot	53	Ornamental	Native to Kashmir , East India and South India
55	Adiantaceae; <i>Adiantum capillus var. veneris</i> Linn.		Least concern (IUCN)												15 Gaja (Fernery)	(50)Pangot	65	Medicinal	Native to United States
56	Adiantaceae; <i>Adiantum incisum</i> Forssk.	 Hansraj													15Gaja (Fernery)	(50)Pangot	65	Medicinal	Native to India, South America and Mexico
57	Polypodiaceae; <i>Phymatopteris quasidivericata</i> (Hayata)Pic. ser														2Gaja (Fernery)	(12)Pangot	14	Ornamental	Native to India, China and Tibet
58	Athyriaceae; <i>Athyrium tenuiforms</i>														5Gaja (Fernery)	(50)Pangot	55	Ornamental	Native to India, China, Nepal, Myanmar and Africa
59	Equisetaceae; <i>Equisetum sp.</i>	 Horsetail													6(Jurassic Park, Haldwani)		6	Medicinal	
60	Polypodiaceae; <i>Pyrrosia sp.</i>														2 (Jurassic Park, Haldwani)		2	Ornamental	

61	Nephrolepidaceae; <i>Nephrolepis biserrata</i> (Sw.) Schott	 Giant sword fern												2 (Kaligarh block – 17)		2	Medicinal	
62	Nephrolepidaceae; <i>Nephrolepis tuberosa</i>	 fishbone fern												2 (Kaligarh block – 17)		2	Ornamental	Native to Northern Australia and Asia.
63	Athyriaceae; <i>Athyrium pectinatum</i> (Wall.ex Hope) Pres	 Lady fern												100 (Kaligarh block – 17)		100	Medicinal	Native to N. Indian Subcontinent to SE. Tibet
64	Nephrolepidaceae; <i>Nephrolepis exaltata</i> (L.) Scott	 Boston fern		Shyampur	05									2 (Kaligarh block – 17); 5 (Fern demonstration plot, Shyampur)		12	Ornamental	Native to tropical regions throughout the world.
65	Nephrolepidaceae; <i>Nephrolepis exaltata 'Aurea'</i> Cultivar	 Golden fern												2 (Kaligarh block – 17)		2	Ornamental	
66	Aspleniaceae; <i>Asplenium victori</i>	 Victorian bird nest fern												1 (Kaligarh block – 17)		1	Ornamental	Native to the temperate regions of Eastern Asia
67	Davalliaceae; <i>Davallia trichomoides</i> Blume	 Black rabbit foot fern												2 (Kaligarh block – 17)		2	Ornamental	Native to Eastern Asia, Japan.
68	Selaginellaceae; <i>Selaginella kraussiana</i> (Kunze) a. Braun	 Frosty fern												10 (Kaligarh block – 17)		10	Ornamental	Native to Canary Islands, and parts of south and east Africa.

69	Dryopteridaceae; <i>Polytichum</i> sp.														3 (Kaligarh block – 17)		3	Ornamental	
70	Unidentified														4 (Kaligarh block – 17)		4		
71	Unidentified														10 (Kaligarh block – 17)		10		
72	Unidentified														10 (Kaligarh block – 17)		10		
73	Unidentified														5 (Kaligarh block – 17)		5		
74	Unidentified														6 (Kaligarh block – 17)		6		
75	Oleandraceae; <i>Oleandra wallichii</i> (Hook.) Pres														4 (Kaligarh block – 17)		4	Medicinal	–
76	Polypodiaceae; <i>Phlebodium aureum</i> (L.) J. Sm.														2 (Kaligarh block – 17)		2	Ornamental	–
77	Polypodiaceae; <i>Polypodium vulgare</i> L.														10 (Kaligarh block – 17)		10	Ornamental	–
78	Athyriaceae; <i>Deparia petersenii</i> (Kunze)M. Kato														5 (Kaligarh block – 17)		5	Ornamental	–
79	Polypodiaceae ; <i>Drynaria mollis</i> Bedd.			Mandal	2										2		2		Native to India , Nepal, Bhutan, China and Tibet






80	Dryopteridaceae ; <i>Cyrtomium caryotideum</i> (Wall.) Presl.			Mandal	1									1			1		Native to India , Nepal, Pakistan, Bhutan, China and Tibet
81	Aspleniaceae ; <i>Asplenium tenuicaule</i> Hayata			Tangsa	5									5			5		Native to India , Nepal, Bhutan, China and Tibet
82	Aspleniaceae ; <i>Asplenium ensiforme</i> Wall. ex Hook. & Grev.			Mandal	3									3			3	Dye	Native to India , Africa, China and Japan
83	Nephrolepidaceae; <i>Nephrolepis auriculata</i> (L.) Trimen			Mandal	2									2			2	Medicinal	Native to India , Nepal, Bhutan, China and Myanmar
84	Marsileaceae; <i>Marsilea quadrifolia</i> L.			Mandal	10									10			10	Medicinal	Native to India , Nepal and China
85	Davalliaceae; <i>Davallia spp.</i>														10 (Kaligarh block – 17)		10	Ornamental	
86	Athyriaceae; <i>Athyrium filix femina</i> (L.) Roth	 Lady Fern													10 (Kaligarh block – 17)		10	Ornamental	Native to the continental US and Alaska
87	Pteridaceae; <i>Pteris longifolia</i> L.	 Longleaf brake													10 (Kaligarh block – 17)		10	Ornamental	Native ro Central America
88	Polypodiaceae; <i>Polypodium virginianum</i> L.	 Rock rcap fern													5 (Kaligarh block – 17)		5	Ornamental	Native to the Eastern United States and Canada.




89	Unidentified															5 (Kaligarh block – 17)		5		
90	Dryopteridaceae ; <i>Dryopteris cycadina</i> (Franch. & Sav.) C. Chr.	 Wood fern														5 (Kaligarh block – 17)		5	Ornamental	Native to northern India, China, Taiwan and Japan
91	Aspleniaceae ; <i>Asplenium</i> spp.															1 (Kaligarh block – 17)		1	Ornamental	
92	Unidentified															5 (Kaligarh block – 17)		5		
93	Dryopteridaceae ; <i>Polystichum aculeatum</i> (L.) Roth	 Hard shield fern														5 (Kaligarh block – 17)		5	Ornamental	Native to Europe
94	Marsileaceae ; <i>Marsilea minuta</i>	 Dwarf waterclover														15 (Kaligarh block – 17)		15	Medicinal	Native to Southeast Asia
95	Dryopteridaceae ; <i>Polystichum nepalense</i> (Spreng.) C.Chr.															2 Gaja (Fernery)		2	Ornamental	Native to Central Himalayas
96	Dryopteridaceae ; <i>Polystichum stimulans</i> (Kunse ex Mett.)															2 Gaja (Fernery)		2	Ornamental	Found from Himalayas to China



- 15 species are yet to be identified

X. Alpine Flower/ Brahm Kamal Species:

Alpine Flower/ Brahm Kamal Species are being conserved at Mana (Research Range, Gopeshwar).






S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery								Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name													Total
				1		2		3		4							
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant						
1.	Asteraceae ; <i>Saussurea obvallata</i> (DC.) Edgew.	 Brahmakamal	Endangered Saussurea species in Indian Himalayan,Region (as per Research paper-page no. 264)									330 (Mana van panchayat); 10(RET demonstration site, HarkotMunsyari)	-	340	Medicinal	Himalayas to China.	
2.	Asteraceae ; <i>Saussurea simpsoniana</i> (Field. &Gard.) Lipsch.	 Phen Kamal	Endangered Saussurea species in Indian Himalayan,Region (as per Research paper-page no. 264)									58 (Mana van panchayat)	-	58	Medicinal	Indian Himalayan region	
3.	Asteraceae ; <i>Saussurea gossypiphora</i> D. Don	 Kasturi Kamal	Critically endangered Saussurea species in Indian Himalayan,Region (as per Research paper-page no. 264)									12 (Mana van panchayat)	-	12	Medicinal	Indian Himalayan region	
4	Asteraceae ; <i>Cremanthodium arnicoides</i> (DC.ex Royle) Good	 Jarhil										90 (Mana van panchayat)	-	90	Ornamental	Indian Himalayan region	
5	Boraginaceae ; <i>Arnebia benthami</i> (Wall. ex G. Don) Johnston	 Baal chhadi	Endangered (International Journal of Applied, Biology, and Pharmaceutical, Technology). (as per Research paper-page no. 264)	Devvan	24	Patalthod	15					18 (Mana van panchayat)	-	57	Medicinal	Indian Himalayan region	

6	Ranunculaceae; <i>Anemone tetrasepala</i> Royle	 Anemone										90 (Mana van panchayat)	-	90	Orname ntal	Indian Himalayan region	
7	Papavaraceae; <i>Meconopsis aculeata</i> Royle	 Himalyan Blue Poppy	Critically Endangered International Journal of Applied, Biology, and Pharmaceutical, Technology.	Pataltho d	5							5	10 (Mana van panchayat)	-	15	Medicina l	Near Endemic Indian Himalayan region
8	Onagraceae; <i>Epilobium latifolium</i> Linn.	 River beauty											4 (Mana van panchayat)	-	4	Orname ntal	Indian Himalayan region
9	Fabaceae; <i>Thermopsis barbata</i> Benth.	 Black Pea											1 (Mana van panchayat)	-	1	Orname ntal	Himalaya to W.&S. Central China
10	Dipsacaceae; <i>Morina longifolia</i> Wall. ex de Candolle	 Biskanera		Devvan	09							09	18 (Mana van panchayat)	-	27	Medicina l	Indian Himalayan region
11	Asteraceae ; <i>Saussurea graminifolia</i> Wall. ex D. C.	 Neelkamal											250 (Mana van panchayat)		250	Fodder	Indian Himalayan region
12	Ranunculaceae; <i>Trollius acaulis</i> Lindl.												8 (Mana van panchayat)		8	Orname ntal	Indian Himalayan region


13	Ranunculaceae; <i>Aquilegia nivalis</i> (Baker) Falc. ex B. D. Jacks.		Rare (IUCN red list 1997)									5 (Mana van panchayat)		5	Orname ntal	Indian Himalayan region
15	Ranunculaceae: <i>Anemone obtusifolia</i>	 Kukkdu					Devvan	02			02			02	Medicina 1	Alpine Himalayas

XI. Wild Flower

Wild Flowers are being conserved at Research Range Gaja, Jeolikote.




S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery								Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name													Total
				1		2		3		4							
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant						
1.	Polygonaceae; <i>Persicaria orientalis</i>	 Machoti										4 (Gaja) Wild flowers		4	Medicinal	China, Japan and southward to Australia	
2.	Hypericaceae; <i>Hypericum oblongifolium</i>	 Basanti/pyoli		Patalhod	50							50	2 (Gaja) Wild flowers		52	Medicinal	Native to western Himalayas
3.	Asteraceae; <i>Anaphalis margaritaceae</i>	 Cottonweed											2 (Gaja) Wild flowers		2	Medicinal	Native to Himalayas
4.	Asteraceae; <i>Erigeron bellidiodes</i>												2(Gaja) Wild flowers		2	Ornamental	Native to Indian subcontinent
5.	Polygonaceae; <i>Persicaria capitata</i>												3 (Gaja) Wild flowers		3	Medicinal	Native to Indian subcontinent

6.	Violaceae; <i>Voila verecunda</i>												2(Gaja)		2	Edible and medicinal	Native to Himalayas
7.	Amaryllidaceae; <i>Zephyranthes carinata</i>	 Fairy Lily											10 (Gaja) Wild flowers		10	Ornamental	Native to Mexico
8.	Araceae; <i>Arisaema propinquum</i>												2(Gaja) Wild flowers		2	Medicinal	Native to the Himalayas
9.	Primulaceae; <i>Primula denticulata</i>			Devvan	14							14	1 (Gaja) Wild flowers		15	Ornamental	Native to India
10.	Convolvulaceae; <i>Ipomea purpurea</i>												1 (Gaja) Wild flowers		1	Ornamental	Native to India
11.	Solanaceae; <i>Burgmansia sauveolans</i>	 Dhatura	Extinct in the wild										2 (Gaja) Wild flowers		2	Medicinal	Native to Southeastern Brazil
12.	Rubiaceae; <i>Spermadictyon suaveolens</i>	 Van champa											2(Gaja) Wild flowers		2	Ornamental	Native to Western Ghats and Himalayas.

13.	Asteraceae; <i>Cosmos sulphurous</i>												4(Gaja) Wild flowers	4	Ornamental	Native to Mexico and northern South America
		Cosmos														
14.	Asteraceae ; <i>Solidago canadensis</i>												4(Gaja) Wild flowers	4	Medicinal	Native to northeastern and north central North America
		Common goldenrod														
15.	Buddlejaceae; <i>Buddleja davidii</i>			Pataltho d	100								2(Gaja) Wild flowers	102	Butterfly host	Karnataka: Mysore Tamil Nadu: Dindigul
		Butterfly Bush														
16.	Malvaceae ; <i>Malvaviscus arboreus</i>												2(Gaja) Wild flowers	2	Ornamental	Native to Northeast India
17.	Acanthaceae; <i>Eranthemum pulchellum</i>												2(Gaja) Wild flowers	2	Ornamental	Native ranges are India, Himalayas and Western China.
18.	Asteraceae; <i>Dahlia sorensenii</i>												2(Gaja) Wild flowers	2	Edible and medicinal	Native to Mexico and Central America
19.	Oleaceae; <i>Jasminum mesnyi</i>												2 (Gaja) Wild flowers/ 2 (Lata pergola Haldwani)	4	Ornamental	Native to Vietnam and southern China
20.	Linaceae; <i>Reinwardtia indica</i>												2 (Gaja) Wild flowers	2	Ornamental	Native to India






21.	Thymelaeaceae; <i>Wikstroemia canescence</i>												2 (Gaja) Wild flowers		2	Ornamental	Native range is Indian Himalayas
22.	Orbanchaceae; <i>Pedicularis bifida</i>			Patalh od	50								50		50	Medicinal	India, Nepal, China
		Kukarjhar															
23.	Campanulaceae; <i>Cyananthus lobatus</i>			Patalh od	50								50		50	Ornamental	Himalayas from Himachal Pradesh to SW china
		Trailing Bellflower															
24.	Asteraceae; <i>Myriactis wallichii</i>			Patalh od	50								50		50	Medicinal	China, Indian subcontinent, Southeast Asia
		Wallich's Myriactis															
25.	Asteraceae; <i>Erigeron multiradiatus</i>			Patalh od	50								50		50	Ornamental	High elevation mountains of Central and South east aisa.
26.	Asteraceae; <i>Erigeron acris</i>			Patalh od	50								50		50	Ornamental	Canada, United states, Northern, Central and South East Asia
		Bitter fleabane															
27.	Asteraceae <i>Anaphalis royleana</i>			Patalh od	50								50		50	Ornamental	Himalayas (Kashmir to Sikkim)
28.	Pernasiaceae <i>Pernasia nubicola</i>			Patalh od	50								50		50	Medicinal	Himalaya to China
		Phutkiya															

29.	Asteraceae; <i>Erigeron annuus</i> (L.) Pers.												10 (Gaja) Wild flowers		10	Ornamental	Native to America and naturalised in hill stations of North India.
		Daisy fleabane															
30.	Lamiaceae; <i>Pogostemon benghalensis</i> (Burm.f.) Kuntze												2(Gaja) Wild flowers		2	Ornamental	Native to India
		Lupa															
31.	Polygonaceae; <i>Fagopyrum esculentum</i> Moench												2(Gaja) Wild flowers		2	Vegetable	Native to Asia
		Uggal															
32.	Gesneriaceae; <i>Chirita bifolia</i> D.Don												10(Gaja) Wild flowers		10	Ornamental	Native range are Himalayas
		Two leaved chirita															
33.	Liliaceae; <i>Theropogon pallidus</i> (Wall. ex Kunth)												2(Gaja) Wild flowers		2	Ornamental	Native range are Himalayas
34.	Ranunculaceae; <i>Thalictrum virgatum</i> Hook.f. & Thomson												2(Gaja) Wild flowers		2	Ornamental	Native to Himalayas
		Virgate meadow rue															

35.	Rosaceae; <i>Rosa brunonii</i> Lindl.	 Himalayan musk rose										2(Gaja) Wild flowers		2	Rose water	Native to central and western Himalayas.
36.	Ranunculaceae; <i>Anemone vitifolia</i> Buch. Ham.ex DC.	 Agali										2(Gaja) Wild flowers		2	Medicinal	From Afghanistan to South west China to Myanmar.
37.	Asteraceae; <i>Ainsliaea aptera</i> DC.	 Koru		Devvan	12									12	Ornamental	India, Nepal, and Bhutan

XII. Palm Species:

Palm Species are being conserved at Palmetum at Research Range, Haldwani.

S. No.	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarak hand Govt. / Indian Biodiversity Portal)	Nursery								Total	Experiment Site	Preservati on Plot	Grand Total	Use	Native Region
				Nursery name													
				1		2		3		4							
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery name	No. Of plant						
1.	Areaceae; <i>Chamaedorea metallica</i> O.F. Cook ex H.E. Moore	 Metal Palm										4 (Palmetum)		4	Ornamental	Native to Southeastern Mexico	
2.	Asparagaceae; <i>Beaucarnea recurvata</i> Lem.	 Ponytail palm	Critically Endangered (IUCN)									4 (Palmetum)		4	Ornamental	Native to the states of Tamaulipas, Veracruz and San Luis Potosí in eastern Mexico	
3.	Areaceae; <i>Areca catechu</i> L.	 Betel nut palm										4 (Palmetum)		4	Ornamental and Edible	Native to Malaysian peninsula	
4	Areaceae; <i>Livistona chinensis</i> (Jacq.) R. Br.	 Chinese Fan Palm										4 (Palmetum)		4	Ornamental	Native to Southern Japan, Taiwan	
5	Areaceae; <i>Thrinax radiata</i> Lodd. ex Schult. & Schult.f.	 Thatch Palm	Least Concern (IUCN)									4 (Palmetum)		4	Ornamental	Native to many Caribbean islands, Central America, and far Southern Florida.	

6	Areaceae; <i>Dypsis decaryi</i> (Jum.) Beentje & J. Dransf.	 Triangle Palm	Vulnerable (IUCN)									4 (Palmetum)		4	Ornamental	Native to Madagascar
7	Areaceae; <i>Hyophorbe lagenicaulis</i> (L.H. Baily) H.E. Moore	 Bottle palm	Critically endangered (IUCN)									4 (Palmetum)		4	Ornamental	Native to Round Island, Mauritius.
8	Areaceae; <i>Ravenea rivularis</i> Jum. & H. Perrier	 Majestic Palm	Vulnerable (IUCN)									4 (Palmetum)		4	Ornamental	Native to South central Madagascar
9	Areaceae; <i>Thrinax parviflora</i> (Burret) Borhidi & Muniz	 Broom Palm										4 (Palmetum)		4	Ornamental	Endemic to the Blue Mountains of Jamaica
10	Areaceae; <i>Wodyetia bifurcata</i> A.K. Irvine	 Foxtail Palm	Conservation Dependent (IUCN)									4 (Palmetum)		4	Ornamental	Endemic to a remote area in Queensland, Australia
11	Areaceae; <i>Caryota rumphiana</i> Mart.	 Fish tail fern										4 (Palmetum)		4	Ornamental	Native to Philippines, Sulawesi, Maluku, New Guinea, Solomon Islands, Bismarck Archipelago.
12	Areaceae; <i>Carpentaria acuminata</i> (H.Wendl. & Drude) Becc.	 Carpentaria Palm										4 (Palmetum)		4	Ornamental	Native to Northern Australia


13	Areaceae; <i>Chamaedorea costaricana</i> Oerst.	 Bamboo Palm										4 (Palmetum)		4	Ornamental	Native to Costa Rica
14	Areaceae; <i>Cocos nucifera</i> L.	 Coconut										4 (Palmetum)		4	Ornamental	Native to tropical islands in the western Pacific.
15	Areaceae; <i>Dypsis leptocheilos</i>	 Red neck palm	Critically endangered (IUCN)									4 (Palmetum)		4	Ornamental	Native to Madagascar
16	Areaceae; <i>Dypsis lutescens</i> (H. Wendl.) Beentje & J. Dransf.	 Golden cane palm	Near Threatened (IUCN)									4 (Palmetum)		4	Ornamental	Native to East Madagascar
17	Areaceae; <i>Hydriastele microspadix</i>	 Hydraki Palm										4 (Palmetum)		4	Ornamental	Endemic to the Moluccan Islands of Maluku, and Ceram in Eastern Indonesia.
18	Areaceae; <i>Hyophorbe verschaffeltii</i> H. A. Wendl.	 Spindle Palm	Critically Endangered (IUCN)									4 (Palmetum)		4	Ornamental	Native to Mascarene Islands

19	Areaceae; <i>Phoenix acaulis</i> Roxb.											4 (Palmetum)		4	Ornamental	Native to Northern India, Bhutan and Nepal
		Dwarf Date Palm														
20	Areaceae; <i>Rhapis excelsa</i> (Thunb.) A. Henry											4 (Palmetum)		4	Ornamental	Native to Southern China and Taiwan
		Lady Palm														
21	Areaceae; <i>Washingtonia robusta</i> H. Wendl.		Near Threatened (IUCN)									4 (Palmetum)		4	Ornamental	Native to Western Sonora, and Baja California Sur in Northwestern Mexico.
		Mexican fan Palm														
22	Areaceae; <i>Serenoa repens</i> (Bart.) J.K. Small											4 (Palmetum)		4	Ornamental	Native to the Southeastern United States of America
		Saw Palm														
23	Areaceae; <i>Sabal minor</i> (Jacq.) Pers.											4 (Palmetum)		4	Ornamental	Native to the southern United States from North Carolina to Texas and northeast Mexico.
		Sabal Palm														
24	Areaceae; <i>Phoenix canariensis</i> Chabaud		Least concern (IUCN)									4 (Palmetum)		4	Ornamental	Native to the Canary Islands
		Canary Island Date Palm														
25	Areaceae; <i>Licuala ramsayi</i> F.Muell.		Least concern (IUCN)									4 (Palmetum)		4	Ornamental	Native to Australia
		Queen land Palm														

26	Areaceae; <i>Caryota urens</i> L.		Least concern (IUCN)									4 (Palmetum)		4	Ornamental	Native to the Indian Subcontinent
		Fishtail palm														
27	Areaceae; <i>Phoenix dactylifera</i> L.											4 (Palmetum); 1 (Buddha Park)		5	Ornamental and Edible	Native to Northern Africa and southwestern Asia.
		Khajoor Palm														
28	Areaceae; <i>Elaeis guineensis</i> Jacq.		Least Concern (IUCN)									4 (Palmetum)		4	Ornamental	Native to west and southwest Africa
		African Oil Palm														
29	Areaceae; <i>Chamaedorea elegans</i> Mart.											4 (Palmetum)		4	Ornamental	Native to eastern Mexico, Guatemala, and Belize (country located on the north eastern coast of Central America)
		Parlour palm														
30	Areaceae; <i>Pritchardia remota</i> Becc.		Endangered (IUCN)									4 (Palmetum)		4	Ornamental	Endemic Hawaiian species
		Pritchardia Palm														
31	Areaceae; <i>Chamaerops humilis</i> L.		Least concern (IUCN)									4 (Palmetum)		4	Ornamental	Native to continental Europe
		European Fan palm														

32	Areaceae; <i>Veitchia winin</i> H.F. Moore												4 (Palmetum)		4	Ornamentatl	Native to the Vanuatu Islands.
		Winin Palm															
33	Areaceae; <i>Butia capitata</i> (Mart.) Becc.												2 (Palmetum)		2	Ornamentatl	Native to Brazil.
		Butia Palm															
34	Areaceae; <i>Acoelorrhaphe wrightii</i> H. Wendl. ex Becc.												1 (Palmetum)		1	Ornamental	Native to Florida, the Caribbean and Central America.
		Everglades palm															
35	Areaceae; <i>Adonidia merrillii</i> Becc.		Near threatened (IUCN)										1 (Palmetum)		1	Ornamental	Native to the Phillipines.
		Christmas palm															
36	Areaceae; <i>Aiphanes aculeata</i> Willd.												1 (Palmetum)		1	Ornamental	Native to northern South America and Trinidad and Tobago.
		Ruffle palm															
37	Areaceae; <i>Aiphanes minima</i> (Gaertn.) Burret												1 (Palmetum)		1	Ornamental	Native to the insular Caribbean from Hispaniola to Grenada.
		Hooker Fishtail Palm															
38	Areaceae; <i>Arenga hookeriana</i> (Becc.) Whitmore												1 (Palmetum)		1	Ornamental	Native to the humid forests of the Malaysian peninsula and the southern Thailand.
		Hooker Fishtail Palm															

39	Areaceae; <i>Arenga microcarpa</i>	 Toddy palm											1 (Palmetum)		1	Ornamental	Endemic to Maluku, New Guinea, open lowland areas near streams in Irian Jaya, and the Northern Territory of Australia.
40	Areaceae; <i>Arenga obtusifolia</i>	 Sumatra sugar palm											1 (Palmetum)		1	Ornamental	Native to Java, Peninsular Malaysia, Sumatra and Thailand.
41	Areaceae; <i>Cryosophila warscewiczii</i> (H. Wendl.) Bartlett	 Silver Star Palm											1 (Palmetum)		1	Ornamental	Endemic to Central America.
42	Areaceae; <i>Chamaedorea cataractarum</i> Mart.	 Cat palm											1 (Palmetum)		1	Ornamental	Native to Southern Mexico and Central America.
43	Areaceae; <i>Chamaedorea ernesti augusti</i> H. Wendl.	 Chamaedorea ernesti augusti											1 (Palmetum)		1	Ornamental	Native range is S. Mexico to Honduras.
44	Areaceae; <i>Chamaedorea seifrizzi</i>	 Bamboo Palm											1 (Palmetum)		1	Ornamental	Native to Mexico and Central America.
45	Areaceae; <i>Licuala grandis</i> (hort. ex W. Bull) H. Wendl.	 Ruffled Fan Palm											1 (Palmetum)		1	Ornamental	Native to Vanuatu, an island nation in the Pacific.






46	Areaceae; <i>Licuala spinosa</i> Roxb.	 Mangrove fan palm											1 (Palmetum)		1	Ornamental	Native to the moist areas of southeast Asia.
47	Areaceae; <i>Livistona jenkinsiana</i> Kurz	 Major Jenkins' fan palm											1 (Palmetum)		1	Ornamental	Native from Bhutan to Thailand.
48	Areaceae; <i>Livistona rotundifolia</i> (Lam.) Bluem	 Table Palm											(Palmetum)		1	Ornamental	Native to the forests of Asia and Australia.
49	Areaceae; <i>Phoenix rupicola</i> T. anders.	 Cliff Date Palm	Near threatened (IUCN)										1 (Palmetum)		1	Ornamental	Native to the mountainous forests of India and Bhutan.
50	Areaceae; <i>Latania verschaffeltii</i> Lemaire	 yellow latan palm	Endangered (IUCN)										1 (Palmetum)		1	Ornamental	Native to Mauritius.
51	Areaceae; <i>Phoenix pusilla</i> Roxb.	 Flour palm											1 (Palmetum)		1	Ornamental	Endemic to southern India and Sri Lanka.
52	Areaceae; <i>Sabal riverside</i>	 Sabal riverside											3 (Palmetum)		1	Ornamental	Native to Mexico
53	Areaceae; <i>Sabal mauritiiformis</i> (H.Karst.) Gr. & H. Wendl.	 Savannah palm											3 (Palmetum)		1	Ornamental	Native to Central America.



54	Areaceae; <i>Ptychosperma macarthurii</i> H. Wendl. ex Hook.f.	 Macarthur palm										3 (Palmetum)		1	Ornamental	Native to southern New Guinea and northern Australia.
55	Areaceae; <i>Ptychosperma lineare</i>	 Cluster Palm										3 (Palmetum)		1	Ornamental	Native from Ethiopia to South Africa and up to western Madagascar.
56	Areaceae; <i>Pritchardia pacifica</i> Seem. & H. Wendl.	 Fiji fan palm										3 (Palmetum)		1	Ornamental	Native to Fiji in the southwest Pacific Ocean.
57	Areaceae; <i>Caryota mitis</i> Lour.	 Clustering fishtail palm	Least concern (IUCN)									1 (Palmetum)		1	Ornamental	Native to Southeast Asia from India to Java to Southern China.
58	Areaceae; <i>Archontophoenix alexandrae</i> (F. Muell.)H.Wendl. &Drude	 King Palm										1 (Palmetum)			Ornamental	Native to Queensland and New South Wales, Australia, and naturalised in Hawaii and parts of Florida.
59	Areaceae; <i>Archontophoenix cunninghamiana</i> (F. Muell.)H.Wendl. &Drude	 Bungalow palm										1 (Palmetum)		1	Ornamental	Endemic to Australia.
60	Areaceae; <i>Trachycarpus takil</i> Becc.	 Kumaon fan palm	Rare (ENVIS Endemic and Threatened taxa); Threatened (As per Uttarakhand Biodiversity Board); Rare (Indian Biodiversity Portal)	Patalthod	50	Mandal	4							54	Ornamental and Handicrafts	Endemic

61	Areaceae; <i>Borassus flabellifer</i> L.	 Palmyra palm	1.			Haldwani 4						1 (State trees of India)		1	Ornamental and Handicrafts	Native to tropical regions of Africa, Asia and New Guinea
62	Areaceae; <i>Roscheria melanochaetes</i> H. Wendl.		Near Threatened (IUCN)									1 (Palmetum)		1	Ornamental	Native to Ireland
63	Areaceae; <i>Sabal rosei</i>	 Savannah Palmetto										1 (Palmetum)		1	Ornamental	Native to Mexico Northwest, Mexico Southwest.
64	Areaceae; <i>Latina rubra</i>	 Latan palm										1 (Palmetum)		1	Ornamental	Native to Ireland
65	Areaceae; <i>Chamaedorea arenbergiana</i>											1 (Palmetum)		1	Ornamental	Native to Southern Mexico
66	Areaceae; <i>Hydriastele pinangoides</i>											1 (Palmetum)		1	Ornamental	Native to New Guinea
67	Areaceae; <i>Washingtonia filifera</i> (Lindl.) H. Wendl.	 Desert fan palm	Near Threatened (IUCN)									1 (Palmetum)		1	Ornamental	Native to Southwestern United States and Baja California

XIII. Cycads:

Cycad Species are being conserved at Palmetum Conservatory Area at Research Range, Haldwani.







S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery								Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name													
				1		2		3		4							
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant						
1	Zamiaceae; <i>Zamia furfuracea</i> L.F.	 Cardboard Palm	Endangered (IUCN)								4 (Palmetum)		4	Ornamental	Native to Mexico		
2	Zamiaceae; <i>Zamia pumila</i> L.	 Coontie palm	Near Threatened (IUCN)								4 (Palmetum)		4	Ornamental	West Indies		
3	Cycadaceae; <i>Cycas revoluta</i> Thunb.	 Sago Palm	Least Concern (IUCN)								4 (Palmetum)		4	Ornamental	Native to Southern Japan including the Ryukyu Islands		
4	Cycadaceae; <i>Cycas circinalis</i> L.	 Queen Sago Palm	Endangered (IUCN)								4 (Palmetum)		4	Ornamental	Native to Eastern and Southeastern Asia		
5	Zamiaceae; <i>Dioon</i> sp.										1 (Palmetum)		1	Ornamental			









6	Zamiaceae; <i>Zamia fischeri</i> Miq.		Endangered (IUCN)									2 (Palmetum)		2	Ornamental	Endemic to Mexico
7	Zamiaceae; <i>Zamioculcas zamiifolia</i> (Lodd.) Engl.											3 (Palmetum)		3	Ornamental	Native to Africa








* 1 species is yet to be identified

XIV. Cactus/ Succulent Species:

Cactus/ Succulent species are being conserved in Research Range, Haldwani.








S. No	Family; Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Utta rakhand Govt./ Indian Biodiversity Portal)	Nursery								Total	Experiment Site	Preservati on Plot	Grand Total	Use	Native Region
				Nursery Name													
				1		2		3		4							
				Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant						
1.	Crassulaceae; <i>Aeonium arboreum</i>	 Irish rose										2 (Cactus and succulents garden)		2	Ornamental	Native to Atlantic Islands.	
2.	Crassulaceae; <i>Aeonium decorum variegated</i>	 Tree Aeonium										2 (Cactus and succulents garden)		2	Ornamental	Native to Canary Islands.	
3.	Crassulaceae; <i>Aeonium haworthi</i> 'Kiwi'	 Kiwi Verde										2 (Cactus and succulents garden)		2	Ornamental	Native to Canary Islands.	
4.	Crassulaceae; <i>Aeonium castello paivaevaryiegata</i>	 Suncup										2 (Cactus and succulents garden); 2 (Succulent trial)		2	Ornamental	Native of Canary islands.	
5.	Crassulaceae; <i>Sedum morganianum</i>	 Donkey's tail										2 (Cactus and succulents garden)		2	Ornamental	Native to Southern Mexico and Honduras.	
6.	Crassulaceae; <i>Sedum pachyphyllum</i>	 Blue Jelly Beans										5 (Cactus and succulents garden); 2 (Succulent Trail)		7	Ornamental	Native to Mexico.	









7.	Crassulaceae; <i>Sedum treleasei</i>	 Stonecrop											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
8.	Crassulaceae; <i>Sedum rubrotinctum</i>	 Christmas Cheer											1 (Cactus and succulents garden); 2 (Succulent trail)		3	Ornamental	Native to Mexico.
9.	Crassulaceae; <i>Sedum rubrotinctum</i> 'Aurora'	 Jelly bean plant											4 (Cactus and succulents garden); 9 (Succulent trail)		13	Ornamental	Native to Mexico.
10.	Crassulaceae; <i>Bryophyllum daigremontianum</i>	 Mother of thousand plants											20 (Cactus and succulents garden)		20	Ornamental	Native to Madagascar
11.	Crassulaceae; <i>Bryophyllum delagoense</i>	 Devils back bone											9 (Cactus and succulents garden)		9	Ornamental	Native to Madagascar
12.	Crassulaceae; <i>Kalanchoe millotii</i>	 Millot Kalanchoe											4 (Cactus and succulents garden)		4	Ornamental	Native to Arid parts of Madagascar
13.	Crassulaceae; <i>Kalanchoe thyrsiflora</i>	 Paddle plant											1 (Cactus and succulents garden)		1	Ornamental	Native to South Africa and Switzerland
14.	Crassulaceae; <i>Kalanchoe luciae</i>	 Flap jack											1 (Cactus and succulents garden); 2 (Succulent trail)		3	Ornamental	








15.	Crassulaceae; <i>Kalanchoe fedtschenkoi</i> 'Kiwi'													3 (Cactus and succulents garden)		3	Ornamental	Native to Madagascar
16.	Crassulaceae; <i>Echeveria runyonii</i>													2 (Cactus and succulents garden); 2 (Succulent trail)		4	Ornamental	Native to Tamaulipas in Mexico.
17.	Crassulaceae; <i>Echeveria lilacina</i>													2 (Cactus and succulents garden); 2 (Succulent trail)		4	Ornamental	Native to Nuevo Leon Mexico.
18.	Crassulaceae; <i>Echeveria mandala</i>													1 (Cactus and succulents garden)		1	Ornamental	Native to Semi desert areas of Central America.
19.	Crassulaceae; <i>Echeveria</i> 'Blue Bird'													2 (Cactus and succulents garden); 2 (Succulent trail)		4	Ornamental	Native to Mexico.
20.	Crassulaceae; <i>Echeveria purple pearl</i>													1 (Cactus and succulents garden)		1	Ornamental	Native to Mexico & USA.
21.	Crassulaceae; <i>Echeveria derenbergii</i>													1 (Cactus and succulents garden); 1 (Succulent trail)		2	Ornamental	Endemic to Mexico.








22.	Crassulaceae; <i>Crassula capitella</i>	 Campfire crassula											4 (Cactus and succulents garden); 2 (Succulent trail)	6	Ornamental	Native to South Africa.
23.	Crassulaceae; <i>Crassula ovata</i>	 Skinny fingers											2 (Cactus and succulents garden)	2	Ornamental	Native to Kwazulu Natalin South Africa.
24.	Crassulaceae; <i>Crassula</i> 'Tom thumb'	 Tom Thumb											2 (Cactus and succulents garden); 2 (Succulent trail)	4	Ornamental	Native to South Africa
25.	Crassulaceae; <i>Crassula muscosa</i>	 Watch chain											4 (Cactus and succulents garden); 2 (Succulent trail)	6	Ornamental	Native to South Africa and Namibia
26.	Crassulaceae; <i>Crassula ovata</i>	 Baby jade											1 (Cactus and succulents garden)	1	Ornamental	Native to the KwaZulu Natal and Eastern Cape provinces of South Africa, and Mozambique
27.	Didiereaceae; <i>Portulacaria afra</i>	 Jade plant											2 (Cactus and succulents garden)	2	Ornamental	Native to South Africa.
28.	Crassulaceae; <i>Cotyledon tomentosa</i>	 Bear paw											2 (Cactus and succulents garden)	2	Ornamental	Native to Africa.








29.	Euphorbiaceae; <i>Euphorbia tirucalli</i>	 Pencil Cactus	Under Appendix II (ENVIS)										1 (Cactus and succulents garden)	1	Ornamental	Native to Southern Africa
30.	Euphorbiaceae; <i>Euphorbia milii</i>	 Crown of thorns	Under Appendix II (ENVIS)										4 (Cactus and succulents garden)	4	Ornamental	Native to Madagascar
31.	Euphorbiaceae; <i>Euphorbia trigona</i> 'rubra'	 African Milk Tree	Under Appendix II (ENVIS)										2 (Cactus and succulents garden)	2	Ornamental	Native to Africa.
32.	Euphorbiaceae; <i>Euphorbia royleana</i>	 Sullu spurge	Under Appendix II (ENVIS)										5 (Cactus and succulents garden)	5	Ornamental	Near Endemic.
33.	Asphodelaceae; <i>Gasteria bicolor</i>	 Gasteria bicolor											5 (Cactus and succulents garden)	5	Ornamental	Native to South Africa.
34.	Asparagaceae; <i>Sansevieria trifasciata</i>	 Snake Plant											2 (Cactus and succulents garden)	2	Ornamental	Native to Tropical West Africa.
35.	Apocynaceae; <i>Adenium obesum</i>	 Desert rose											10 (Cactus and succulents garden)	10	Ornamental	Native to Sahel region.








36.	Agavaceae; <i>Agave angustifolia</i>	 Caribbean agave											4 (Cactus and succulents garden); 4 (Succulent trial)	8	Ornamental	Native to Mexico.
37.	Agavaceae; <i>Agave filifera</i>	 Thread Leaf Agave											2 (Cactus and succulents garden)	2	Ornamental	Native to Central Mexico.
38.	Agavaceae; <i>Agave geminiflora</i>	 Twin Flower Agave											2 (Cactus and succulents garden)	2	Ornamental	Endemic to Nayarit.
39.	Agavaceae; <i>Agave potatorum</i>	 Butterfly agave											1 (Cactus and succulents garden); 2 (Succulent trial)	3	Ornamental	Native to Deseat area of Mexico.
40.	Agavaceae; <i>Agave desmettiana</i>	 Smooth Agave											1 (Cactus and succulents garden)	1	Ornamental	Native to Mexico.
41.	Aloaceae; <i>Haworthia cooperi var. picturata</i>	 Cushion aloe											4 (Cactus and succulents garden); 2 (Succulent trial)	6	Ornamental	Native to South Africa.
42.	Aloaceae; <i>Haworthia fasciata</i>	 Zebra Plant											3 (Cactus and succulents garden); 2 (Succulent trial)	5	Ornamental	Native to South Africa.






43.	Aloaceae; <i>Aloe 'pink blush'</i> .														2 (Cactus and succulents garden)		2	Ornamental	Native to South Africa
		Pink blush																	
44.	Aloaceae; <i>Aloe spp.</i>														2 (Cactus and succulents garden)		2	Ornamental	
45.	Aloaceae; <i>Aloe rauhii</i>														2 (Cactus and succulents garden)		1	Ornamental	Native to Madagascar
		Snowflake aloe																	
46.	Aloaceae; <i>Aloe spp.</i>														1 (Cactus and succulents garden)		1	Ornamental	
47.	Aloaceae; <i>Dyckia bevilfolia</i>														1 (Cactus and succulents garden)		1	Ornamental	Native to central South America
		Sawblade																	
48.	Aloaceae; <i>Aloe spp.</i>														2 (Cactus and succulents garden)		2	Ornamental	
49.	Aloaceae; <i>Aloe spp.</i>														2 (Cactus and succulents garden)		2	Ornamental	
50.	Aizoaceae; <i>Faucaria tigrina</i>														1 (Cactus and succulents garden)		1	Ornamental	Endemic South Africa.
		Tiger's Jaw																	






51.	Crassulaceae; <i>Echeveria agavoides</i>	 Lipstick plant											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
52.	Crassulaceae; <i>Echeveria sp.</i>												2 (Cactus and succulents garden)		2	Ornamental	
53.	Crassulaceae; <i>Echeveria pulvinata</i>	 Chinelle plant											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
54.	Crassulaceae; <i>Echeveria elegans</i>	 Mexican snowball											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
55.	Crassulaceae; <i>Echeveria imbricata</i>	 Blue Rose											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico
56.	Crassulaceae; <i>Pachyphytum viride</i>												2 (Cactus and succulents garden); 9 (Succulent trail)		11	Ornamental	Native to Mexico
57.	Crassulaceae; <i>Pachyphytum bracteosum</i>	 Silver Bracts											2 (Cactus and succulents garden); 2 (Succulent trail)		4	Ornamental	Native to Mexico
58.	Crassulaceae; <i>Pachyphytum hookeri</i>	 Hooker's pachyphytum											2 (Cactus and succulents garden); 2 (Succulent trail)		4	Ornamental	Native to Mexico.
59.	Asteraceae; <i>Senecio serpens</i>	 Blue Chalk stick											2 (Cactus and succulents garden);2 (Succulent trail)		4	Ornamental	Endemic to South Africa.

60.	Asteraceae; <i>Senecio rowleyanus</i>												1 (Cactus and succulents garden)		1	Ornamental	Native to South west & Africa.
61.	Crassulaceae; <i>Sempervivum tectorum</i>												2 (Cactus and succulents garden)		2	Ornamental	Native to Europe.
62.	Crassulaceae; <i>Sempervivum arachnoideum</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to Alps in Europe.
63.	Apocynaceae; <i>Pachypodium lamerei</i>												1 (Cactus and succulents garden)		1	Ornamental	Native to Madagascar .
64.	Crassulaceae; <i>Angelina sedum</i>												1 (Cactus and succulents garden)		1	Ornamental	Native to rocky, mountainous slopes in Europe and Asia.
65.	Crassulaceae; <i>Graptopetia 'Fred Ives'</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to California
66.	Aizoaceae; <i>Delosperma echinatum</i>												2 (Cactus and succulents garden)		2	Ornamental	Native to South Africa

67.	Agavaceae; <i>Yucca desmetiana</i>	 Yucca plant													2 (Cactus and succulents garden)		2	Ornamental	Native to Northern Mexico.
68.	Asphodelaceae; <i>Haworthia pentagona</i>	 Carrion plant													4 (Cactus and succulents garden)		4	Ornamental	Endemic to Southern Africa
69.	Crassulaceae; <i>Sedeveria rolyi</i>														2 (Succulent trial)		2	Ornamental	Native to Australia
70	Cactaceae; <i>Acanthocereus tetragonus</i>	 Triangle cactus													5 (Cactus and succulents garden)		2	Ornamental	Native to Florida.
71	Cactaceae; <i>Acanthocereus tetragonus variegata</i>	 Fairy castle													2 (Cactus and succulents garden)		2	Ornamental	Native to Brazil
72	Cactaceae; <i>Selenicereus anthonyanus</i>	 Fishbone cactus													2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
73	Cactaceae; <i>Astrophytum myriostigma quadricostatum</i>	 Bishop's hat													2 (Cactus and succulents garden)		2	Ornamental	Native to the highlands of northeastern and central Mexico.

74	Cactaceae; <i>Astrophytum myriostigma</i>	 Bishop's cap												2 (Cactus and succulents garden)		1	Ornamental	Native to Texas and central Mexico
75	Cactaceae; <i>Astrophytum asterias</i>	 Sand dollar												2 (Succulent trail)		2	Ornamental	Native to Texas.
76	Cactaceae; <i>Astrophytum asterias</i> ' <i>Super kabuto</i> '	 Sea Urchin												2 (Succulent trail)		2	Ornamental	Native to small parts of Texas in the United States and Mexico
77	Cactaceae; <i>Echinocereus pentalophus</i>	 Ladyfinger Cactus												1 (Cactus and succulents garden)		1	Ornamental	Native to North America.
78	Cactaceae; <i>Echinocactus grusonii</i>	 Golden barrel cactus	Endangered (IUCN)											6 (Cactus and succulents garden)		6	Ornamental	Endemic to Mexico.
79	Cactaceae; <i>Mammillaria vetula</i>	 Thimble Cactus												2 (Cactus and succulents garden)		1	Ornamental	Endemic to Mexican states.
80	Cactaceae; <i>Mammillaria elegans</i>	 Elephant Nipple cactus												2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.






81	Cactaceae; <i>Mammillaria longimamma</i>	 Pine apple Cactus											1 (Cactus and succulents garden)		1	Ornamental	Native to Mexico.
82	Cactaceae; <i>Mammillaria prolifera</i>	 Texas Nipple Cactus											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
83	Cactaceae; <i>Mammillaria elongata</i>	 Lady Finger cactus											3 (Cactus and succulents garden)		3	Ornamental	Native to Mexico.
84	Cactaceae; <i>Mammillaria grahamii</i>	 Arizon's Fishhook Cactus											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
85	Cactaceae; <i>Mammillaria compressa</i>	 Compressed Nipple Cactus											1 (Cactus and succulents garden)		1	Ornamental	Native to Mexico.
86	Cactaceae; <i>Mammillaria confusa</i>	 Wolly Nipple Cactus											1 (Cactus and succulents garden)		1	Ornamental	Native to Mexico.
87	Cactaceae; <i>Mammillaria gracilis</i>	 Pincushion cactus											5 (Cactus and succulents garden)		5	Ornamental	Native to Mexico.

88	Cactaceae; <i>Coryphantha sp.</i>													2 (Cactus and succulents garden)		2	Ornamental	
89	Cactaceae; <i>Coryphantha elephantidens</i>	 Elephant's tooth												1 (Cactus and succulents garden)		1	Ornamental	Native to Mexico
90	Cactaceae; <i>Cereus sp. forma monstruosa cristata</i>													1 (Cactus and succulents garden)		1	Ornamental	
91	Cactaceae; <i>Cereus albicaulis</i>	 sweetpotato cactus												2 (Cactus and succulents garden)		2	Ornamental	Native to Brazil.
92	Cactaceae; <i>Cereus peruvianus monstrose</i>	 Apple cactus												2 (Cactus and succulents garden)		2	Ornamental	Native to Rio de Janeiro in Brazil.
93	Cactaceae; <i>Cereus sp.</i>													6 (Cactus and succulents garden)		6	Ornamental	
94	Cactaceae; <i>Austrocylindr opuntia subulata f. monstrosa</i>	 Eve's Needle												1 (Cactus and succulents garden)		1	Ornamental	Native to Australia and Europe.





95	Cactaceae; <i>Austrocylindr opuntia</i> <i>spp.</i>												1 (Cactus and succulents garden)		1	Ornamental	Native to South America.
96	Cactaceae; <i>Espostoa lanata</i>	 Peruvian Old man cactus											1 (Cactus and succulents garden)		1	Ornamental	Native to Northern Peru, Western Slope of Andes mountains.
97	Cactaceae; <i>Cephalocereus senilis</i>	 Old Man Cactus											4 (Cactus and succulents garden)		4	Ornamental	Native to Esatern Mexico.
98	Cactaceae; <i>Pilosocereus glaucens</i>	 Blue torch cactus											4 (Cactus and succulents garden)		4	Ornamental	Native to Brazil.
99	Cactaceae; <i>Notocactus leninghausii</i>	 Golden Ball cactus											1 (Cactus and succulents garden)		1	Ornamental	Native to Brazil.
100	Cactaceae; <i>Notocactus herteri</i>	 Notocactus											1 (Cactus and succulents garden)		1	Ornamental	Endemic to Brazil.
101	Cactaceae; <i>Pereskiopsis spathulata</i>	 Alfilerillo											2 (Cactus and succulents garden)		2	Ornamental	Native to Australia









102	Cactaceae; <i>Opuntia microdasys</i> <i>var.rufida</i>	 Red Bunny Ears cactus											2 (Cactus and succulents garden)		2	Ornamental	Endemic to Central & Northern Mexico.
103	Cactaceae; <i>Opuntia microdasys</i> <i>var. pallida</i>	 Bunny ear yellow cactus											8 (Cactus and succulents garden)		8	Ornamental	Native to Central & Northern Mexico.
104	Cactaceae; <i>Opuntia microdasys</i> <i>var.albispina</i>	 Bunny Ear white cactus											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
105	Cactaceae; <i>Opuntia monacantha</i> <i>f. monstruosa</i>	 Joseph's coat											80 (Succulent trail)		80	Ornamental	Native to South America.
106	Cactaceae; <i>Opuntia auberi</i>	 Prickly pear											5 (Cactus and succulents garden)		5	Ornamental	Native to Central America in Cuba, Antilles Island.
107	Cactaceae; <i>Opuntia indica</i>	 Barbary Fig											4 (Cactus and succulents garden)		4	Ornamental	Native to Mexico.
108	Cactaceae; <i>Ferocactus horridus</i>	 Barrel Cactus											1 (Cactus and succulents garden)		1	Ornamental	Native to California and Mexico.




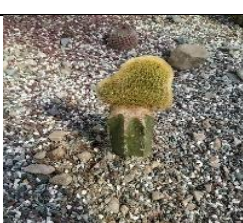



109	Cactaceae; <i>Ferocactus hamatacanthus</i>	 Turk's head											4 (Cactus and succulents garden)		4	Ornamental	Mexico
110	Cactaceae; <i>Ferocactus latispinus</i>	 Devil's tongue											4 (Cactus and succulents garden)		4	Ornamental	Native to Mexico.
111	Cactaceae; <i>Ferocactus macrodiscus</i>	 Star cactus											2 (Cactus and succulents garden)		2	Ornamental	Native to Mexico.
112	Asphodelaceae; <i>Haworthia retusa</i>	 Star cactus											2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa.
113	Asphodelaceae. <i>Haworthia truncata</i>	 Horse teeth											2 (Cactus and succulent garden)		2	Ornamental	Native to Western South Africa.
114	Asparagaceae; <i>Agave victoria reginae</i>	 Victoria Agave											2 (Cactus and succulent garden)		2	Ornamental	Native to Chihuahuan Desert of Meexico.
115	Asphodelaceae; <i>Haworthiacooperi var. cooperi</i>	 Cooper's haworthia											2 (Cactus and succulent garden)		2	Ornamental	Endemic to South Africa.
116	Cactaceae, <i>Mammillaria plumosa</i>	 Feather cactus											2 (Cactus and succulent garden)		2	Ornamental	Native to Northeastern Mexico.








117	Cactaceae; <i>Tephrocactus articulatus</i> <i>var. papyracanthus</i>	 Paper spine											2 (Cactus and succulent garden)		2	Ornamental	Distribution in Argentina.
118	Asphodelaceae. <i>Haworthia viscose</i> <i>var. torquiose</i>	 Button clove											2 (Cactus and succulent garden)		2	Ornamental	Endemic to Southern Africa.
119	Cactaceae; <i>Mammalariae longata</i> <i>crest</i>	 Brain Cactus											2 (Cactus and succulent garden)		2	Ornamental	Native to Columbia, Canada.
120	Asparagaceae; <i>Agave tradewinds</i>	 Trade wind Agave											2 (Cactus and succulent garden)			Ornamental	Native to the hot and arid regions of the Americas.
121	Crassulaceae <i>Orostachys boehmeri</i>	 Dunecap											2 (Cactus and succulent garden)			Ornamental	Native to Japan.
122	Agavaceae; <i>Furcraea foetida</i> <i>'mediopicta</i>	 Mauritius Hemp											2 (Cactus and succulent garden)			Ornamental	Native to America.
123	Apocynaceae; <i>Huernia schneideriana</i>	 Red Dragon Flower											2 (Cactus and succulent garden)			Ornamental	Native to Southwest Tanzania



124	Crassulaceae; <i>Kalanchoe humilis</i>	 Copper Spoons											2 (Cactus and succulent garden)			Ornamental	Native to Mozambique
125	Crassulaceae; <i>Kalanchoe orgyalis</i>	 Copper Spoons											2 (Cactus and succulent garden)			Ornamental	Native to Mozambique
126	Crassulaceae; <i>Crassula tetragona</i>	 Miniature Pine Tree											2 (Cactus and succulent garden)			Ornamental	Native to Southern Africa.
127	Cactaceae; <i>Cereus tetragonus</i>	 Triangle cactus											2 (Cactus and succulents garden)	2		Ornamental	Native to Florida
128	Cactaceae; <i>Echinopsishuascha var. grandiflora</i>	 Red Torch Cactus											2 (Cactus and succulents garden)	2		Ornamental	Native to Argentina
129	Euphorbiaceae ; <i>Euphorbia enopla</i>	 Pincushion Euphorbia											2 (Cactus and succulent garden)	2		Ornamental	Native to South Africa








130	Cactaceae; <i>Opuntia tuna</i>												1 (Cactus and succulent garden)		1	Ornamental	Native range is Jamaica
131	Cactaceae; <i>Echinopsis</i> 'Red paramount'												2 (Cactus and succulent garden)		2	Ornamental	Native to South America
132	Asteraceae; <i>Senecio jacobsenii</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Kenya and Tanzania.
133	Asparagaceae; <i>Sansevieria trifasciata</i> moonshine												2 (Cactus and succulent garden)		2	Ornamental	Native to Europe; India & Africa.
134	Crassulaceae; <i>Crassula sarmentosa</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa.
135	Crassulaceae; <i>Crassula sp.</i>												2 (Cactus and succulent garden)		2	Ornamental	
136	Cactaceae; <i>Mammillaria muehlenpfordtii</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
137	Asteraceae; <i>Senecio barbertonicus</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Southern Africa

138	Cactaceae; <i>Mammillaria petterssonii</i>												2 (Cactus and succulent garden)	2	Ornamental	Native to Mexico
139	Crassulaceae; <i>Sedum lineare</i>	 Stonecrop											1 (Cactus and succulent garden)	2	Ornamental	Native to East Asia
140	Cactaceae; <i>Echinofossulo crispatus</i>												1 (Cactus and succulent garden)	1	Ornamental	Native to Mexico
141	Cactaceae; <i>Coryphantha compacta</i>	 Pincushion Cactus											1 (Cactus and succulent garden)	1	Ornamental	Native to Mexico
142	Cactaceae; Unidentified												4 (Cactus and succulents garden)	4	Ornamental	
143	Cactaceae; Unidentified												2 (Cactus and succulent garden)	2	Ornamental	
144	Cactaceae; Unidentified												4 (Cactus and succulent garden)	4	Ornamental	
145	Cactaceae; Unidentified												2 (Cactus and succulent garden)	2	Ornamental	

146	Cactaceae; Unidentified												2 (Cactus and succulent garden)		2	Ornamental	
147	Cactaceae; Unidentified												2 (Cactus and succulent garden)		2	Ornamental	
148	Unidentified												2 (Cactus and succulent garden)		2	Ornamental	
149	Cactaceae; Unidentified												1 (Cactus and succulent garden)		1	Ornamental	
150	Cactaceae; Unidentified												1 (Cactus and succulent garden)		1	Ornamental	
151	Crassulaceae ; <i>Echeveria runyonii</i> cv. <i>Topsy Turvy</i> f. <i>cristata</i>	 Mexican hens											2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
152	Aizoaceae; <i>Cheiridopsis denticulata</i>	 Carpet weed											2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa







153	Aizoaceae; <i>Titanopsis calcarea</i>												2 (Cactus and succulent garden)		2	Ornamental	Indigenous to the arid regions of South Africa and Namibia
		Jewel plant															
154	Crassulaceae; <i>Crassula 'Buddha's Temple'</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa
155	Crassulaceae ; <i>Echeveria pulvinata 'Frosty'</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
		White Chenille Plant															
156	Euphorbiaceae; <i>Euphorbia francoisii</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Madagascar
157	Asphodelaceae; <i>Haworthia limifolia</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to southern Africa
		Fairies washboard															
158	Aizoaceae; <i>Cheiridopsis brownii</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa
159	Aizoaceae; <i>Trichodiadema densum</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa
		Miniature desert rose															



160	Crassulaceae ; <i>Crassula falcata</i>	 Airplane plant											2 (Cactus and succulent garden)	2	Ornamental	Native to South Africa
161	Apocynaceae; <i>Orbea carnososa</i>												2 (Cactus and succulent garden)	2	Ornamental	Native to Zimbabwe
162	Asphodelaceae; <i>Aloe haworthioides</i>	 Haworthia leaved Aloe											2 (Cactus and succulent garden)	2	Ornamental	Native to Madagascar
163	Aizoaceae; <i>Lithops comptonii</i>	 Living Stones											2 (Cactus and succulent garden)	2	Ornamental	Native to South Africa
164	Aizoaceae; <i>Lithops lesliei</i>	 Living Stones											2 (Cactus and succulent garden)	2	Ornamental	Native to South Africa
165	Aizoaceae; <i>Lithops hookeri</i>	 Living Stones											2 (Cactus and succulent garden)	2	Ornamental	Native to South Africa
166	Aizoaceae; <i>Pleiospilos nelii</i>	 Splitrock											2 (Cactus and succulent garden)	2	Ornamental	Native to South Africa







167	Aizoaceae; <i>Lithops aucampiae</i>	 Living Stones											2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa
168	Apocynaceae; <i>Orbea dummeri</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to East Africa
169	Asphodelaceae; <i>Haworthia papillosa</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to South Africa
170	Asparagaceae; <i>Calibanus hookeri</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
171	Cactaceae; <i>Pseudorhipsalis ramulosa</i>	 Red Rhipsalis											2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
172	Cactaceae; <i>Rebutia heliosa grafted</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
173	Cactaceae; <i>Sulcorebutia rauschii grafted</i>												2 (Cactus and succulent garden)		2	Ornamental	Native to Bolivia







174	Cactaceae; <i>Pachypodium lamerei f. cristata</i>	 Crested Madagascar Palm										2 (Cactus and succulent garden)		2	Ornamental	Native to Madagascar
175	Euphorbiaceae; <i>Euphorbia flanaganii f. cristata</i>	 Green coral										2 (Cactus and succulent garden)		2	Ornamental	Native to Mexico
176	Asparagaceae; <i>Sansevieria cylindrica</i>	 Spear Sansevieria										2 (Cactus and succulent garden)		2	Ornamental	Native to Africa
177	Cactaceae; <i>Colocephalocereus purpureus</i>	 Purple Coleocephalocereus										4 (Cactus and succulents garden)		4	Ornamental	Native to Brazil
178	Cactaceae; <i>Epiphyllum oxypetalum</i>	 Queen of the night										4 (Cactus and succulents garden)		4	Ornamental	Native to Mexico
179	Cactaceae; <i>Gymnocalycium anisitsii</i>											4 (Cactus and succulents garden)		4	Ornamental	Native to Brazil




180	Cactaceae; <i>Gymnocalycium bicolor</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to Argentina
181	Cactaceae; <i>Gymnocalycium bruchii</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to Argentina
182	Cactaceae; <i>Gymnocalycium deeszianum</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to Argentina
183	Cactaceae; <i>Gymnocalycium denudatum</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to Brazil
184	Cactaceae; <i>Gymnocalycium gibbosum 'nobile'</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to Argentina
185	Cactaceae; <i>Gymnocalycium horridispinum</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to South Africa

186	Cactaceae; <i>Gymnocalycium horstii</i> <i>var. bueneckerii</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to South Africa
187	Cactaceae; <i>Gymnocalycium kemberae</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to South America
188	Cactaceae; <i>Gymnocalycium hypiacanthum</i>	 Moon cacti											4 (Cactus and succulents garden)	4	Ornamental	Native to South Africa
189	Cactaceae; <i>Gymnocalycium mihanovichii</i> 'Hiboton'	 Hibotan cactus											4 (Cactus and succulents garden)	4	Ornamental	Native to South America
190	Cactaceae; <i>Gymnocalycium mihanovichii friedrichii</i> (Orange, Pink, variegated)												4 (Cactus and succulents garden)	4	Ornamental	Native to South America
191	Cactaceae; <i>Gymnocalycium mihanovichii frierichii cristate</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to South America

192	Cactaceae; <i>Gymnocalycium mihanovichii 'multicolor'</i>												4 (Cactus and succulents garden)		4	Ornamental	
193	Cactaceae; <i>Gymnocalycium saglionis</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to South America
194	Cactaceae; <i>Hylocereus undatus</i>	 Vine like cactus											4 (Cactus and succulents garden)		4	Ornamental	Native to South America
195	Cactaceae; <i>Hylocereus lemairei</i>	 Pitayas											4 (Cactus and succulents garden)		4	Ornamental	Native to South America
196	Cactaceae; <i>Lophophora williamsii</i>	 Peyote											4 (Cactus and succulents garden)		4	Ornamental	Distributed in southwest United States, northern Mexico, and Peru
197	Cactaceae; <i>Lophophora williamsii monstrous orange</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to northern Mexico
198	Cactaceae; <i>Mammillaria humboldtii</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to Central Mexico

199	Cactaceae; <i>Mammillaria polythele</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to Mexico
200	Cactaceae; <i>Mammillaria prolifera</i>	 Texas nipple cactus											4 (Cactus and succulents garden)		4	Ornamental	Native to Central America
201	Cactaceae; <i>Mammillaria pseuperbella</i>	 Pretty nipple cactus											4 (Cactus and succulents garden)		4	Ornamental	Native to Mexico
202	Cactaceae; <i>Mammillaria senilis</i>												4 (Cactus and succulents garden)		4	Ornamental	Native to Mexico
203	Cactaceae; <i>Mammillaria sphaerica</i>	 Pale mammillaria											4 (Cactus and succulents garden)		4	Ornamental	Native to south eastern Texas
204	Cactaceae; <i>Mammillaria spinosissima</i>	 Spiny pincushion cactus											4 (Cactus and succulents garden)		4	Ornamental	Native to Colombia and Venezuela







205	Cactaceae; <i>Matucana madisoniorum</i>												4 (Cactus and succulents garden)	4	Ornamental	Native to Peru
206	Cactaceae; <i>Matucana aurantiaca</i>	 Orange matucana											4 (Cactus and succulents garden)	4	Ornamental	Native to Peru
207	Cactaceae; <i>Melocactus azureus</i>	 Melon cactus											4 (Cactus and succulents garden)	4	Ornamental	Native to Brazil
208	Cactaceae; <i>Melocactus behienseis</i>	 Melocactus											4 (Cactus and succulents garden)	4	Ornamental	Native to Brazil
209	Cactaceae; <i>Melocactus ernestii</i>	 Melocactus											4 (Cactus and succulents garden)	4	Ornamental	Native to East Brazil
210	Cactaceae; <i>Myrtillocactus geometrizans</i>	 Blue Myrtle Cactus											4 (Cactus and succulents garden)	4	Ornamental	Native to Mexico








211	Crassulaceae; <i>Rhodiola trifida</i>			Patalthod	50									50			50	Ornamental	Native to Asia
212	Crassulaceae; <i>Rhodiola imbricate</i>			Patalthod	50									50			50	Ornamental	Native to Asia
213	Crassulaceae; <i>Rhodiola sinuata</i>	 Trifid Sedum		Patalthod	50									50			50	Ornamental	Native to Asia


***14 species are yet to be identified.**







XV. Aquatic Plant Species;






Aquatic Plant Species are being conserved at Research Range, Haldwani:






S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Utarakhand Govt./ Indian Biodiversity Portal)	Nursery						Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name											
				1		2		3							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Nymphaeaceae; <i>Nymphaea alba</i> L.	 Water lily	Least Concern (IUCN)							25 (Aquatic Demonstaration area)		25	Ornamental	Native to North Africa.	
2.	Nymphaeaceae; <i>Nymphaea peach glow</i>	 Water lily								30 (Aquatic Demonstaration area)		30	Ornamental		
3.	Nymphaeaceae; <i>Nymphaea 'Antares'</i>	 Night blooming water lily								1 (Aquatic Demonstaration area)		1	Ornamental		
4	Nymphaeaceae; <i>Nymphaea caerulea</i> Savigny	 Water lily								10 (Aquatic Demonstaration area)		10	Ornamental	Nile river and other parts of East Africa.	
5	Nymphaeaceae; <i>Nymphaea nouchali</i> Burm.f.	 Water lily								10 (Aquatic Demonstaration area)		10	Ornamental	Native to Southeast Asia.	
6	Nymphaeaceae; <i>Nymphaea 'Aphrodite'</i>	 Tropical water lily								10 (Aquatic Demonstaration area)		10	Ornamental		





7	Araceae; <i>Pistia stratiotes</i> L.	 water cabbage/ water lettuce	Least concern (IUCN)								30(Aquatic Demonstaration area)	30	Ornamental	First discovered from the Nile near Lake Victoria in Africa.
8	Salviniaceae; <i>Salvinia natans</i> (L.) All.	 Floating fern	Least concern (IUCN)								10(Aquatic Demonstaration area)	10	Ornamental	Native to Algeria, Egypt, Libya, Morocco, and Tunisia
9	Onagraceae; <i>Ludwigia sedioides</i> (Humb. & Bonpl.) H. Hara	 Water mosaic									1 (Aquatic Demonstaration area)	1	Ornamental	Native to Brazil and Venezuela.
10	Alismataceae; <i>Hydrocleys nymphoides</i> (Hum.& Bon. ex Willd.) Buchenau	 Water poppy									1(Aquatic Demonstaration area)	1	Ornamental	Native to Central and South America
11	Menyanthaceae; <i>Nymphoides geminata</i> (R. Br.) Kuntze	 Yellow Snowflake									1(Aquatic Demonstaration area)	1	Ornamental	Native to eastern Australia.
12	Menyanthaceae; <i>Nymphoides cristata</i>	 Floating heart									1(Aquatic Demonstaration area)	1	Ornamental	Native to tropical Asia.
13	Nymphaeaceae; <i>Nuphar lutea</i> Smith	 Yellow water lily									1 (Aquatic Demonstaration area)	1	Ornamental and Medicinal	Native to temperate regions of Europe, NW Africa, and western Asia.




14	Araceae; <i>Colocasia esculenta</i> (L.) Schott	 Taro	Least concern (IUCN)								1(Aquatic Demonstaration area)	1	Edible	
15	Cyperaceae; <i>Cyperus haspan</i> L.	 Dwarf Papyrus									1 (Aquatic Demonstaration area)	1	Ornamental	Native range is Tropics &Subtropical regions of southern Asia, Madagascar and Africa.
16	Araliaceae; <i>Hydrocotyle vulgaris</i> L.	 Copper coin	Least concern (IUCN)								1 (Aquatic Demonstaration area)	1	Ornamental	Native to N. Africa and Europe.
17	Cannaceae; <i>Canna glauca</i> L.	 Water canna									3 (Aquatic Demonstration area)	3	Ornamental	Native to the wetlands of tropical America.
18	Heliconiaceae; <i>Heliconia rostrata</i> ruiz & Pavon										1(Aquatic Demonstration area)	1	Ornamental	Native to the tropical Americas.
19	Apiaceae; <i>Hydrocotyle verticillata</i> Thunb.										1(Aquatic Demonstration area)	2	Ornamental	Native range is Tropical & Subtropical America.
20	Nelumbonaceae; <i>Nelumbo nucifera</i> Gaertn.		Data deficient (IUCN)								2(Aquatic Demonstration area)	4	Ornamental and Medicinal	Native to Central and northern India.
21	Apiaceae; <i>Centellia asiatica</i> (L.)Urban	Mandukparni 	Least concern (IUCN)								100 (RET plot, Shyampur); 15000 (Medicinal conservatory, Haldwani)	15100	Medicinal	Wetlands in Asia.

22	Alismataceae; <i>Echinodorous bleherae</i> Rataj	 Amazon sword									2(Aquatic Demonstration area)	2	Ornamental	Native to Cuba, Central America, and South America as far south as Brazil and Bolivia
23	Lemnaceae; <i>Lemna minor</i> L.	 Duckweed	Least concern (IUCN)								200(Aquatic Demonstration area)	200	Bioremediation and Livestock feed	Native throughout most of Africa, Asia, Europe and North America
24	Pontederiaceae; <i>Eichhornia crassipes</i>										8(Aquatic Demonstration area)	8	Ornamental	Native to the Amazon basin
25	Iridaceae; <i>Iris pseudacorus</i> L.		Least concern (IUCN)								6(Aquatic Demonstration area)	6	Ornamental	Native to Europe, western Asia and northwest Africa
26	Pontederiaceae; <i>Monochoria elata</i>										1(Aquatic Demonstration area)	1	Ornamental	
27	Pontederiaceae; <i>Monochoria vaginalis</i>												Ornamental	Native to temperate and tropical Asia.

28	Linderniaceae; <i>Hemianthus</i> <i>callitrichoides</i> Griseb.										5(Aquatic Demonstration area)		5	Ornamental	Native to the islands of The Bahamas, Cuba, Hispaniola, Jamaica, and Puerto Rico.
29	Linderniaceae; <i>Micranthemum</i> <i>tw eediei</i>										5(Aquatic Demonstration area)		5	Ornamental	
30	Nymphaeaceae; <i>Nymphaea</i> 'Southern Charm'										5(Aquatic Demonstration area)		5	Ornamental	
31	Nymphaeaceae; <i>Nymphaea candida</i> J. Presl										5(Aquatic Demonstration area)		5	Ornamental	Native to quiet freshwater habitats in Eurasia
32	Nymphaeaceae; <i>Nymphaea</i> 'Almost Black'										5(Aquatic Demonstration area)		5	Ornamental	

33	Nymphaeaceae; <i>Nymphaea</i> <i>"Jakkaphong"</i>										5(Aquatic Demonstration area)		5	Ornamental	
		Jakkaphong													
34	Nelumbonaceae; <i>Nelumbo lutea</i> Willd.										5(Aquatic Demonstration area)		5	Ornamental	Native to North America.
		Yellow Lotus													
35	Nelumbonaceae; <i>Nelumbo 'Snow White '</i>										5(Aquatic Demonstration area)		5	Ornamental	
		Snow white Lotus													
36	Nelumbonaceae; <i>Nelumbo 'Drop Blood '</i>										5(Aquatic Demonstration area)		5	Ornamental	
		Drop Blood Lotus													
37	Nymphaeaceae; <i>Nymphaea 'Siam Jasmine</i>										5(Aquatic Demonstration area)		5	Ornamental	
		'Siam Jasmine Waterlily													






38	Nelumbonaceae; <i>Nelumbo 'Bing Lei Furen'</i>										5(Aquatic Demonstration area)		5	Ornamental	
		Bing Lei Furen Lotus													
39	Nelumbonaceae; <i>Nelumbo nucifera 'Boli Gongzhu'</i>										5(Aquatic Demonstration area)		5	Ornamental	
		'Boli Gongzhu'													
40	Nelumbonaceae; <i>Nelumbo New Star Bowl</i>										5(Aquatic Demonstration area)		5	Ornamental	
		New Star Bowl													
41	Nelumbonaceae; <i>Nelumbo 'Micro Spark'</i>										5(Aquatic Demonstration area)		5	Ornamental	
		Micro Lotus													
42	Nelumbonaceae; <i>Nelumbo spp.</i>										5(Aquatic Demonstration area)		5	Ornamental	
		256 Pettaled Lotus													




43	Nymphaeaceae; <i>Euryale ferox</i>	 Makhana									2 (Aquatic Demonstration area)		2	Ornamental and Edible	Native to eastern Asia and southern Asia
44	Ranunculaceae; <i>Ranunculus sceleratus</i>	 Jal Dhaniya									1 (Aquatic Demonstration area)		1	Medicinal	Native to North America and Eurasia
45	Trapaceae; <i>Trapa natans</i>	 Water Chestnut									50 (Aquatic Demonstration area)		50	Medicinal and Edible	Native to Europe, Asia and Africa

***1 species is yet to be identified.**

XVI. Insectivorous Species:






Insectivorous Species are being conserved at Mandal, Research Range Gopeshwar and Haldwani.









S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt./ Indian Biodiversity Portal)	Nursery								Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name													
				1		2		3		4							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1.	Droseraceae; <i>Drosera peltata</i> Sm. ex Willd.	 Mukhjali	Least Concern IUCN Red List	Mandal	30	Patalhod	50					30			80	Medicinal	India, China, Japan, Nepal and Philippines.
2	Lentibulariaceae; <i>Utricularia brachiata</i> Oliv.		Small population / Rare Status of insectivorous plants in northeast India Volume 43 June 2014 , K. K. Rawat and K. Giri	Mandal	50							50			50		Endemic to northeast India.
3	Lentibulariaceae; <i>Utricularia striatula</i> Sm.		Least Concern IUCN Red List	Mandal	100							100			100		Endemic to northeast India.
4	Lentibulariaceae; <i>Utricularia scandens</i> Benj			Mandal	100							100			100		Africa, China, India, Nepal, Thailand and Malaysia.
5.	Lentibulariaceae; <i>Utricularia kumaonsis</i> Oliver.			Mandal	10							10			10		Endemic to Himalaya


6.	Nepenthaceae; <i>Nepenthes ventrata</i>			Haldwani	2							2			2		
7.	Nepenthaceae; <i>Nepenthes mirabilis</i>			Haldwani	2							2			2		Native to Hong Kong
8.	Nepenthaceae; <i>Nepenthes smilesii</i>			Haldwani	2							2			2		Native to northeastern Thailand, southern Laos, Cambodia, and Vietnam.









XVII. Lichen Species:








Lichen Species are being conserved at Munsyari, Research Range, Pithoragarh.









S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery								Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name													Total
				1		2		3		4							
Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant										
1	Megasporaceae; <i>Aspicilia caesiocinerea</i> (L.) Korber											Patalthod				Indian subcontinent	
2	Parmeliaceae; <i>Bulbothrix sensibilis</i> (J. Steiner & Zahlbr.) Hale											Pataltho				Indian and Sri Lanka	
3	Teloschistaceae; <i>Caloplaca himalayana</i> .											Patalthod				India, Bhutan , China and Japan	
4	Parmeliaceae; <i>Cetrelia cetranooides</i> (Del. ex Duby) W. Culb. & C. Culb											Patalthod				India , Nepal and China	
5	Chrysothricaceae <i>Chrysothrix chlorina</i>											Patalthod				India , Nepal and China	



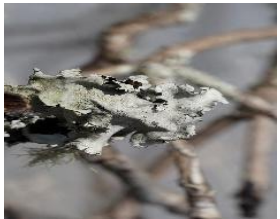



6	Cladoniaceae; <i>Cladonia chlorophaea</i>														Patalthod				India, Bhutan , China and Japan
7	Cladoniaceae; <i>Cladonia coniocraea</i> (Florke) Spreng.														Patalthod			Antimic robial	India, Nepal
8	Cladoniaceae; <i>Cladonia corniculata</i> Ahti & Kashiw.														Patalthod			Antimic robial	India, S. Africa and Australia
9	Cladoniaceae; <i>Cladonia squamulosa</i> Hoffm.														Patalthod			Antimic robial	India, Nepal and Sri Lanka
10	Coccocarpiaceae; <i>Coccocarpia erythroxyli</i>														Patalthod				India, Bhutan , China and Japan
11	Verrucariaceae; <i>Dermatocarpon miniatum</i> (L.) Mann														Patalthod				India and Nepal
12	Parmeliaceae; <i>Everniastrum cirrhatum</i> (Fr.) Hale														Patalthod			Food purpose	India, Nepal, Sri Lanka, S. China and Japan
13	Parmeliaceae; <i>Everniastrum nepalensis</i> (Fr.) Hale														Patalthod			Food purpose	India , Nepal, Bhutan, China and Taiwan

14	Parmeliaceae; <i>Flavoparmelia capirata</i> (L.) Hale													Patalthod				India, Nepal, Sri Lanka, China and Japan
15	Parmeliaceae; <i>Flavopunctilea flaventior</i> (Stirton) Hale													Patalthod				India, Nepal, China and Japan
16	Graphidaceae; <i>Graphis scripta</i> (L.) Ach.													5Patalthod				India and Nepal
17	Physiaceae; <i>Heterodermia leucomelos</i> (L.) Poelt													Patalthod				India, Nepal, Sri Lanka, East and South East Asia and Africa
18	Physiaceae; <i>Heterodermia dactyliza</i>													Patalthod				India, Bhutan , China and Japan
19	Physiaceae; <i>Heterodermia diademata</i>													Patalthod				India, Bhutan , China and Japan
20	Physiaceae; <i>Heterodermia comosa</i>													Patalthod				India, Bhutan , China and Japan
21	Physiaceae; <i>Heterodermia speciosa</i>													Patalthod				India, Bhutan , China and Japan







22	Physiaceae; <i>Heterodermia pseudospeciosa</i>												Patalthod				India, Bhutan , China and Japan
23	Parmeliaceae; <i>Hypotrachyna exsecta</i>												Patalthod				India, Bhutan , China and Japan
24	Teloschistaceae; <i>Ioplaca pindarensis</i> (Rasanen) Poelt & Hinter.												Patalthod				Himalayas
25	Lecanoraceae; <i>Lecanora achroa</i>												Patalthod				India, Bhutan , China and Japan
26	Lecanoraceae; <i>Lecanora concilians</i>												Patalthod				India, Bhutan , China and Japan
27	Lecanoraceae; <i>Lecanora fimbriatula</i>												Patalthod				India, Bhutan , China and Japan
28	Lecanoraceae; <i>Lecanora flavidofusca</i>												Patalthod				India, Bhutan , China and Japan
29	Lecanoraceae; <i>Lecidella elaeochroma</i>												Patalthod				India, Bhutan , China and Japan









30	Lecanoraceae; <i>Lecanora helva</i>												Patalthod				India, Bhutan , China and Japan
31	Lecanoraceae; <i>Lecanora japonica</i>												Patalthod				India, Bhutan , China and Japan
32	Lecanoraceae; <i>Lecanora sulphurescens</i>												Patalthod				India, Bhutan , China and Japan
33	Collemataceae; <i>Leptogium brunitae</i>												Patalthod				India, Bhutan , China and Japan
34	Collemataceae; <i>Leptogium denticulatum</i>												Patalthod				India, Bhutan , China and Japan
35	Collemataceae; <i>Leptogium pedicellatum</i>												Patalthod				India, Bhutan , China andJapan
36	Collemataceae; <i>Leptogium saturninum</i>												Patalthod				India, Bhutan , China and Japan




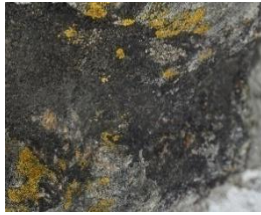



37	Collemataceae; <i>Leptogium trichophorum</i>														Patalthod				India, Bhutan , China and Japan
38	Lobariaceae; <i>Lobaria kurokawae</i>														Patalthod				India, Bhutan , China and Japan
39	Lobariaceae; <i>Lobaria pindarensis</i>														Patalthod				India, Bhutan , China and Japan
40	Lobariaceae; <i>Lobaria retigera</i>														Patalthod				India, Bhutan , China and Japan
41	Parmeliaceae; <i>Myelochroa entotheiochroa</i>														Patalthod				India, Bhutan , China and Japan
42	Nephromataceae; <i>Nephroma helveticum</i>														Patalthod				India, Bhutan , China and Japan
43	Parmeliaceae; <i>Nephromopsis pallescens</i>														Patalthod				India, Bhutan , China and Japan
44	Ochrolechiaceae; <i>Ochrolechia rocella</i>														Patalthod				India, Bhutan , China and Japan

45	Parmeliaceae; <i>Parmelinella wallichian</i>											Patalthod				India, Bhutan , China and Japan
46	Parmeliaceae; <i>Parmotrema austrosinensis</i>											Patalthod				India, Bhutan , China and Japan
47	Parmeliaceae; <i>Parmotrema hababianum</i>											Patalthod				India, Bhutan , China and Japan
48	Parmeliaceae; <i>Parmotrema mesotropu</i>											Patalthod				India, Bhutan , China and Japan
49	Parmeliaceae; <i>Parmotrema nilgherrense</i>											Patalthod				India, Bhutan , China and Japan
50	Parmeliaceae; <i>Parmotrema reticulatum</i>											Patalthod				India, Bhutan , China and Japan

51	Parmeliaceae; <i>Parmotrema tinctor</i>														Patalthod				India, Bhutan , China and Japan
52	Peltigeraceae; <i>Peltigera pindarensis</i> D.D Awasti & M. Joshi														Patalthod				India and Nepal
53	Peltigeraceae; <i>Peltigera dolichorrhiz</i>														Patalthod				India, Bhutan , China and Japan
54	Peltigeraceae; <i>Peltigera polydactylon</i>														Patalthod				India, Bhutan , China and Japan
55	Peltigeraceae; <i>Peltigera rufescens</i>														Patalthod				India, Bhutan , China and Japan
56	Pertusariaceae; <i>Pertusaria leucosora</i>														Patalthod				Himalaya and South India
57	Pertusariaceae; <i>Pertusaria coronata</i>														Patalthod				India, Bhutan , China and Japan

58	Pertusariaceae; <i>Pertusaria quassaie</i>														Patalthod				India, Bhutan , China and Japan
59	Physciaceae; <i>Phaeophysia hispidula</i> (Ach.) Moberg														Patalthod				India , Nepal and tropical and subtropical region of the world
60	Lecideaceae; <i>Porpidia albocoerulescens</i>														Patalthod				India, Bhutan , China and Japan
61	Lecideaceae; <i>Porpidia macrocarpa</i>														Patalthod				India, Bhutan , China and Japan
62	Parmeliaceae; <i>Myelochroa arulenta</i>														Patalthod				India, Bhutan , China and Japan
63	Pyrenulaceae; <i>Pyrenula introducta</i>														Patalthod				India, Bhutan , China and Japan

64	Ramalinaceae; <i>Ramalina sinensis</i> Jatta															Patalthod			Food purpose / Perfume industry	China, S. E. Asia and Europe, India and Nepal
65	Ramalinaceae; <i>Ramalina conduplicans</i> Vain															Patalthod			Food purpose / Perfume industry	East Asia, India and Nepa
66	Ramalinaceae; <i>Ramalina hossei</i>															Patalthod				India, Bhutan , China and Japan
67	Rhizocarpaceae; <i>Rhizocarpon geographicum</i>															Patalthod				India, Bhutan , China and Japan
68	Stereocaulaceae; <i>Stereocaulon foliolosum</i>															Patalthod				India, Bhutan , China and Japan
69	Stereocaulaceae; <i>Stereocaulon paradoxum</i>															Patalthod				India, Bhutan , China and Japan
70	Stereocaulaceae; <i>Stereocaulon pomiferum</i>															Patalthod				India, Bhutan , China and Japan
71	Stereocaulaceae; <i>Stereocoulon myriocarpum</i> Th. Fr.															Patalthod				India , Nepal, Bhutan, China and Taiwan







79	Parmeliaceae; <i>Usnea pectinata</i> Taylor														Patalthod			Bird nests	India, China Malaysia and Thailand
80	Parmeliaceae; <i>Usnea rubicunda</i>														Patalthod				India, Bhutan , China and Japan
81	Parmeliaceae; <i>Usnea spinulosa</i>														Patalthod				India, Bhutan , China and Japan
82	Verrucariaceae; <i>Verrucaria acrotell</i>														Patalthod				India, Bhutan , China and Japan
83	Chrysothricaceae; <i>Chrysothrix candelaris</i>														Patalthod			Bio Indicator	India, Bhutan , China and Japan
84	Candelariaceae; <i>Candelaria concolor</i>														Patalthod			Bio Indicator	India, Bhutan , China and Japan
85	Collamataceae; <i>Collema auriforme</i>														Patalthod			Bio Indicator	India, Bhutan , China and Japan




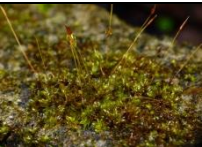




*1 Species is yet to be indentified







XVIII. Bryophyte species:








Bryophyte Species are being conserved at Lingadhar, Research Range, Gaja.




A- Moss species

S. No	Scientific Name	Local Name and Photo	Threat Status (IUCN/Biodiversity Board/ENVIS/BSI/Uttarakh and Govt. / Indian Biodiversity Portal)	Nursery						Experimental Site	Preservation Plot	Total No. Of Plant	Use	Native Region	
				Nursery Name											Total
				1		2		3							
Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant										
1	Entodontaceae; <i>Entodon plicatus</i> C. Muell.									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Southeast Asia	
2	Anomodontaceae; <i>Herpetineuron tocoae</i> (Sull. & Lesq.) Cardot									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation		
3	Trachypodaceae; <i>Trachypodopsis crisputula</i> (Hook.) Fleisch									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation		
4	Hypnaceae; <i>Hypnum cupressiforme</i> Hedw.									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation and Ornamental	Found in all continents except Antarctica.	
5	Polytrichaceae; <i>Atrichum obtusulum</i> (C. Muell.) Jaeg.									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Sikkim, East Nepal, Western Himalaya, Mussoorie, Kerala.	
6	Bryaceae; <i>Rhodobryum roseum</i> (Hedw.) Limpr.									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservati and Ornamental	Found throughout most of the continents.	

7	Bryaceae; <i>Bryum capillare</i> L. ex Hedw.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	South & North India, China, Central Asia, North & Central Africa, North & South America.
8	Thuidiaceae; <i>Anomodon minor</i> (Hedw.) Fuernr.	 Rounded tongue moss									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Darjeeling, Bhutan, Naga Hills.
9	Mniaceae; <i>Plagiomnium</i> <i>rostratum</i> (Schrader) T. J. Koponen,										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	
10	Pottiaceae; <i>Hyophila involuta</i> (Hook.) Jaeg.	 Cement moss									Moss Garden Lingadhar (Sariyataal); Haldwani (Jurassic Garden)			Soil moisture conservation	
11	Dicranaceae; <i>Campylopus</i> <i>involutus</i> (C. Muell.) Jaeg.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	This genus is represented worldwide.
12	Dicranaceae; <i>Campylopus</i> <i>fragilis</i> (Brid.) B.S.G.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	This genus is represented worldwide.
13	Brachytheciaceae ; <i>Brachythecium</i> <i>buchananii</i> (Hook.) Jaeg.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Common in China, Japan, and the Himalayan region, reaching to Pakistan, Philippines, and Vietnam.
14	Brachytheciaceae ; <i>Brachythecium</i> <i>cameratum</i> (Mitt.) Jaeg.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Sikkim, Kumaun, Shimla, (Basically a Himalayan species.)







15	Fissidentaceae; <i>Fissidens bryoides</i> Hedw.	 Pocket moss									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Khasia Hills, Lower Bengal.
16	Pottiaceae; <i>Pseudosymblyphar is subduriuscula</i> (C. Muell.)										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Myanmar, Borneo, Philippines, China (Yunnan). (Basically a South and East Asiatic species)
17	Pottiaceae; <i>Hymenostylium recurvirostre</i> (Hedw.) Dix.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Darjeeling, Khasia Hills, East Nepal, Bhutan.
18	Stereophyllaceae; <i>Stereophyllum anceps</i> (Bosch & Lac.) Broth.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Assam, Chhotanagpur, Bangladesh, Kanara, Mahabaleshwar, Ceylon, Thailand, Vietnam, Java, Philippines. (Basically an Indomalayan species)
19	Plagiotheciaceae; <i>Sematophyllum subhumile</i> (C. Muell.) Fleisch.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Upper Assam, Nilgiri, Palni, Myanmar, Thailand, Java. (basically a Southeast Asian species)
20	Fabroniaceae; <i>Levierella fabroniacea</i> C. Muell.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Darjeeling, East Nepal, East Madhya Pradesh, Western Himalaya (Mussoorie), Western Ghats (Purandhar), Setschwan, Abyssinia, Transvaal; Spreading from Africa to China over India.

21	Brachytheciaceae ; <i>Rhynchostegium celebicum</i> (Lac.) Jaeg.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	Upper Assam, Garhwal, Palni, Thailand, Tonkin, Sumatra, Java, Celebes, Philippines. (Basically an Indo Malaysian species)
22	Hypnaceae; <i>Taxiphyllum taxirameum</i> (Mitt.) Fleisch.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Upper Assam, Arunachal, Darjeeling, Khasia Hills, Bhutan, Orissa, Bangladesh.
23	Hypnaceae; <i>Ectropothecium cyperoides</i> (Hook.) Jaeg.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	East Nepal, Assam, Arunachal, Naga Hills, Garhwal, South India, Sumatra, Java, Celebes, Oceanic Islands; Indomalaya to Oceania.
24	Thuidiaceae; <i>Thuidium koelzii</i> Robinson										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation and Ornamental	East Nepal, Upper Assam, Bhutan, Khasia Hills, Orissa, Mussoorie (Basically a Himalayan species)
25	Pottiaceae; <i>Timmiella anomala</i> (B.S.G.) Limpr.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	
26	Funariaceae; <i>Funaria hygrometrica</i> Hedw.	 Bonfire moss									Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	
27	Leucodontaceae; <i>Leucodon secundus</i> (Harv.) Mitt.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	

28	Dicranaceae; <i>Brothera leana</i> (Sull.) Mull. Hal.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation	
29	Hypnaceae; <i>Taxiphyllum</i> <i>barbieri</i> (Cardot & Copp.) Z. Iwats.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation and Ornamental	Native to southeast Asia
30	Neckeraceae; <i>Cryptoleptodon</i> <i>flexuosus</i> (Harv.) Renauld & Cardot.										Moss Garden Lingadhar (Sariyataal)			Soil moisture conservation and Ornamental	






B. Liverworts:


Liverworts Species are being conserved at Lingadhar, Research Range Gaja and Haldwani.

S. No	Scientific Name	Local Name and Photo	Threat Status (IUCN/Biodiversity Board/ENVIS /BSI/Uttarakh and Govt. / Indian Biodiversity Portal)	Nursery					Experimental Site	Preservation Plot	Total No. Of Plant	Use	Native Region
				Nursery Name				Total No. Of Plant					
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant						
1	Aytoniaceae; <i>Plagiochasma appendiculatum</i> Lehm. & Lindenb.								Moss Garden Lingadhar (Sariyataal)		Soil moisture conservation	widely distributed in western, eastern Himalayas, central India and south India.	
2	Targioniaceae; <i>Targionia hypophylla</i> L.								Moss Garden Lingadhar (Sariyataal)		Soil moisture conservation	It has worldwide distribution in areas with Mediterranean climate.	
3	Aytoniaceae; <i>Reboulia hemisphaerica</i> (L.) Raddi								Moss Garden Lingadhar (Sariyataal)		Soil moisture conservation		
4	Cyathodiaceae; <i>Cyathodium tuberosum</i> Kashyap								Moss Garden Lingadhar (Sariyataal)		Soil moisture conservation		
5	Marchantiaceae; <i>Marchantia polymorpha</i> (L.)	 Umbrella liverwort							Moss Garden Lingadhar (Sariyataal); Haldwani Jurassic Park		Soil moisture conservation	It is found worldwide from tropical to arctic climates.	
6	Marchantiaceae; <i>Marchantia papillata</i> Raddi								Moss Garden Lingadhar (Sariyataal);		Soil moisture conservation		




XIX. Other Species:

A. Air Plants species in Haldwani Range

S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. / Indian Biodiversity Portal)	Nursery						Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region
				Nursery Name											
				1		2		3							
				Nursery Name	No. Of Plant	Nursery Name	No. Of Plant	Nursery Name	No. Of Plant						
1.	Bromeliaceae; <i>Tillandsia usneoides</i>	 Spanish moss		Haldwani	2					2			2	Air Purifying	Native to Mexico
2.	Bromeliaceae; <i>Tillandsia bulbosa</i>			Haldwani	2					2			2	Air Purifying	Native to Guatemala, Belize, and Central America
3.	Bromeliaceae; <i>Tillandsia chiapensis</i>			Haldwani	2					2			2	Air Purifying	Native to Mexico
4.	Bromeliaceae; <i>Tillandsia ionantha</i>			Haldwani	2					2			2	Air Purifying	Native to Central America & Mexico
5.	Bromeliaceae; <i>Tillandsia mima chiletensis</i>			Haldwani	2					2			2	Air Purifying	Native to Peru

6.	Bromeliaceae; <i>Tillandsia balbisiana</i>			Haldwani	2						2			2	Air Purifying	Native to Mexico
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B . Algae (Haldwani, Gopeshwar and Dehradun Ranges)

S. No	Scientific Name	Local Name and Photo	Conservation Status (IUCN/Biodiversity Board/ENVIS/Uttarakhand Govt. Indian Biodiversity Portal)	Nursery						Total	Experiment Site	Preservation Plot	Grand Total	Use	Native Region	
				Nursery Name												
				1		2		3								
Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant	Nursery. Name	No. Of Plant											
1	Charophyta: Filamentous algae										Haldwani Nursery					
2	Zygnemataceae; <i>Spirogyra spp.</i>										Mandal					
3	Unidentified										Riparian plot Shyampur					

***2 species is yet to be identified**

APENDICES I

LIST OF ENDEMIC SPECIES – UTTARAKHAND/INDIAN HIMALAYAN REGION

S.No.	Scientific Name	Local Name	Page No; Serial No.	Source	Region
1.	<i>Pittosporium eriocarpum</i>	Tumri	(Page No. 37 , S.No 34) (Other tree species)	Endemic; Flowering plant of Uttarakhand. (A Checklist) B.P. Uniyal 2007.	Uttarakhand
2.	<i>Prunus cornuta</i>	Jamoi	(Page No. 42 , S.No 62) (Other tree species)	Endemic; Flowering plants of Uttarakhand (A checklist) Uniyal et. al	Uttarakhand
3.	<i>Aconitum balfouri</i>	Meetha vish	(Page No. 82 , S.No 2) (Other herbs)	Broadly Endemic to Uttarakhand; Threatened species of Uttarakhand, P.No. 3 4, Dr. Bhagat Singh Burfal	Uttarakhand
4.	<i>Meizotropis pellita</i>	Patwa	(Page No. 107 , S.No 39) (Other shrubs)	Endemic to Patwadangar (Nainital); An In Vitro Approach for the Conservation of M. pellita: An Endangered and Endemic Plant, Lalit Singh et al American Journal of Plant Science, 2013, 4, 1233 1240	Uttarakhand
5.	<i>Dendrobium fimbriatum</i>		(Page No. 151 , S.No. 8) (Orchids)	Endemic; Flowering Plants of Uttarakhand (A Checklist) B.P. Uniyal	Uttarakhand
6.	<i>Trachycarpus takil</i>	Kumaon fan palm	(Page No.193 , S.No 60) (Palm)	Endemic; Kumaun Fan Palm: <i>T. takil</i> –in Retrospect B.S. Kholia pp 417 426,2010	Uttarakhand
7.	<i>Berberis lambertii</i>		(Page No.104 , S.No 27) (Other Shrubs)	Endemic; Flowering plant of Uttarakhand. (A Checklist) B.P. Uniyal 2007.	Uttarakhand
8.	<i>Quercus floribunda</i>	Moru	(Page No.28 , S.No 4) (Oak)	Near Endemic; Diversity distribution, use and conservation status of plant species of the west Himalaya, India, S.S Samant, ISSN: 1745 1604(2006)97 104	Uttarakhand
9.	<i>Cinnamomum tamala</i>	Tejpat	(Page No. 32 , S.No 2) (Other tree species)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr. Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
10.	<i>Juglans regia</i>	Akhrot	(Page No. 33 , S.No 9) (Other tree species)	Near Endemic;Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr. Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
11.	<i>Grewia oppositifolia</i>	Bhimal	(Page No. 34 , S.No 18) (other tree species)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013	Uttarakhand
12.	<i>Cedrus deodara</i>	Deodara	(Page No. 36 , S.No 28) (other tree species)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
13.	<i>Machilus duthiei</i>	Kaula	(Page No. 36 , S.No 31) (other tree species)	Near Endemic; Diversity, distribution use and conservation status of Plant sp. Of MFR W Himalaya S.pant& Samant ISSN:1745 1604	Uttarakhand

14.	<i>Bauhinia retusa</i>	Semla	(Page No. 41 , S.No 59) (Other tree species)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
15.	<i>Ulmus wallichiana</i>	Emroyi	(Page No. 42 , S.No 61) (Other tree species)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
16.	<i>Rhamnus triqueter</i>	Gonta	(Page No. 44 , S.No 73) (Other tree species)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr. Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
17.	<i>Cupressus torulosa</i>	Surai	(Page No. 55 , S.No 142) (Other tree species)	Near Endemic; Diversity distribution, use and conservation status of plant species of the west Himalaya, India, S.S Samant, ISSN: 1745 16042(2006)97 104	Uttarakhand
18.	<i>Hedychium spicatum</i>	Kapur Kachri	(Page No. 75 , S.No 4) (Aromatic herbs)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr. Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
19.	<i>Heracleum candicans</i>	Patrala	(Page No. 79 , S.No 29) (Aromatic herbs)	Near Endemic; The International Journal of Biodiversity Science and Management ISSN: 1745 1604 (print) 1745 1590	Uttarakhand
20.	<i>Geranium wallichianum</i>		(Page No. 82 , S.No 4) (Other herbs)	Near Endemic: Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
21.	<i>Lilium polyphyllum</i>	Kshira Kakoli	(Page No. 83 , S.No 5) (Other herbs)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
22.	<i>Bergenia ciliata</i>	Pashanbedh	(Page No. 83 , S.No 7) (Other herbs)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya ; A Field Guide , Ishwari Datt Rai, Gajendra singh and Gopal Singh Rawat. 2017	Uttarakhand
23.	<i>Bergenia stracheyi</i>	Pashanbedh	(Page No. 83 , S.No 8) (Other herbs)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya ; A Field Guide , Ishwari Datt Rai, Gajendra singh and Gopal Singh Rawat. 2017	Uttarakhand
24.	<i>Eremostachys superba</i>	Mooch	(Page No. 89 , S.No 40) (Other herbs)	Near Endemic; to Shiwaliks or NW India Threatened species of Uttarakhand. B. S. Barfal	Uttarakhand
25.	<i>Cotoneaster bacillaris</i>	Ruins	(Page No. 100 , S.No 2) (Other shrubs)	Near endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
26.	<i>Berberis aristata</i>	Kilmora	(Page No. 102, S.No 10) (Other shrubs)	Near endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
27.	<i>Skimmia laureola</i>	Kedarpati	(Page No. 102 , S.No 12) (Other shrubs)	Near Endemic; Diversity distribution, use and conservation status of plant species of the west Himalaya, India, S.S Samant, ISSN: 1745 16042(2006)97 104	Uttarakhand
28.	<i>Daphne papyracea</i>	Satpura	(Page No. 104 , S.No 26) (Other shrubs)	Near endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi &	Uttarakhand

				Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	
29.	<i>Viburnum cotinifolium</i>	Guiya	(Page No. 107 , S.No 38) (Other shrubs)	Near Endemic; Diversity distribution, use and conservation status of plant species of the west Himalaya, India, S.S Samant, ISSN: 1745 1604(2006)97 104	Uttarakhand
30.	<i>Indigofera pulchella</i>	Sakina	(Page No. 112 , S.No 71) (Other shrubs)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
31.	<i>Euphorbia royleana</i>		(Page No. 201, Page No. , S.No 32) (Cactus & succulents)	Near Endemic; Status and distribution pattern of Native and Endemic species in Uttarakhand (WHR)India Dr.Surbhi & Soni Pandey Vol. 4 , Nov.2013, ISSN 2229 5518	Uttarakhand
32.	<i>Schrebera swietenoides</i>	Van palas	(Page No. 62 , S.No 184) (other trees)	Near Endemic; Threatened species of Uttarakhand. B. S. Barfal	Uttarakhand
33.	<i>Ficus neriifolia</i>		(Page No. 9 , S.No 4) (Ficus)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya; A Field Guide, Ishwari Datt Rai, Gajendra Singh and Gopal Singh Rawat. 2017	Uttarakhand
34.	<i>Pinus roxburghii</i>		Page No. 27, (S.No. 21) (Pine)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya ; A Field Guide , Ishwari Datt Rai, Gajendra Singh and Gopal singh Rawat. 2017	Uttarakhand
35.	<i>Rhododendron anthopogon</i>		Page No. 30, (S.No. 5) (Rhododendron)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya; A Field Guide , Ishwari Datt Rai, Gajendra Singh and Gopal Singh Rawat. 2017	Uttarakhand
36.	<i>Acer caesium</i>	Kanchula	(Page No. 35 , S.No 25) (other tree species)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya; A Field Guide, Ishwari Datt Rai, Gajendra Singh and Gopal Singh Rawat. 2017	Uttarakhand
37.	<i>Aesculus indica</i>	Pangar	(Page No. 74 , S.No 269) (other tree species)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya; A Field Guide, Ishwari Datt Rai, Gajendra Singh and Gopal Singh Rawat. 2017	Uttarakhand
38.	<i>Myrica sapida</i>	Shilong Kafal	(Page No. 74 , S.No 270) (other tree species)	Near Endemic; The International Journal of Biodiversity Science and Management, ISSN: 1745 1604(Print)1745 1590, Shreekar Pant & Samant.	Uttarakhand
39.	<i>Ajuga parviflora</i>	Ratpatiya	(Page No. 91 , S.No 56) (Other Herbs)	Near Endemic; The International Journal of Biodiversity Science and Management, ISSN: 1745 1604(Print)1745 1590, Shreekar pant & Samant.	Uttarakhand
40.	<i>Asparagus curillus</i>	Satawar	(Page No. 111 , S.No 68) (Other Shrubs)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya ; A Field Guide , Ishwari Datt Rai, Gajendra singh and Gopal singh Rawat. 2017	Uttarakhand
41.	<i>Diplomeris hirsuta</i>	Snow Orchid	(Page No. 160 , S.No 68) (Orchid Species)	Threatened species of Uttarakhand. B. S. Barfal	Uttarakhand
42.	<i>Pecteilis gigantean</i>	Butterfly orchid	(Page No. 159 , S.No 66) (Orchid Species)	Threatened species of Uttarakhand. B. S. Barfal	Uttarakhand
43.	<i>Indopiptadenia oudhensis</i>	Gainti	(Page No. 43 , S.No. 67) (Other tree species)	Endemic to Western Himalaya; Phyto sociological analysis and regeneration status of monotypic; Endemic tree in Uttarakhand. H.B Naithani. vol. 141, 6 jun 2015	Indian Himalayan Region

44.	<i>Nardostachys jatamansi</i>	Jatamansi	(Page No.75 , S.No 1) (Aromatic herbs)	Endemic Himalaya; THREATENED SPECIES OF UTTARAKHAND P.no 12, Dr. Bhagat Singh Burfal	Indian Himalayan Region
45.	<i>Aconitum hetrophyllum</i>	Atees	(Page No. 82 , S.No 1) (Other herbs)	Pan Endemic in Himalaya; Threatened species of Uttarakhand P.no 5 6, Dr. Bhagat Singh Burfal	Indian Himalayan Region
46.	<i>Saussurea costus</i>	Koot/Kushta	(Page No. 86, S.No 23) (Other herbs)	Endemic Himalaya; (IHR) Saussurea species in Indian, Himalayan,Region:International, Journ al of Plant Biology · Jan 2010 J. S.Butola	Indian Himalayan Region
47.	<i>Gentiana kurroo</i>	Trayman	(Page No. 86 , S.No 24) (Other herbs)	Endemic to Western Himalaya; (Threatened species of Uttarakhand P.no 10, Dr. Bhagat Singh Burfal)	Indian Himalayan Region
48.	<i>Cyathea spinolosa</i>	Tree fern	(Page No. 164 , S.No 1) (Fern)	Pan endemic; Threatened species of Uttarakhand P.no 23 24, Dr. Bhagat Singh Burfal.	Indian Himalayan Region
49.	<i>Utricularia brachiata</i>		(Page No. 236 , S.No 2) Insectivorous plants	Endemic to northeast India ,Status of insectivorous plants in northeast India Volume 43 June 2014	Indian Himalayan Region
50.	<i>Angelica glauca</i>	Choru	(Page No. 77 , S.No 16) (Aromatic Herbs)	Endemic Himalaya (IHR); Technology for propagation and cultivation of A. Glauca: A threatened high value Himalayan medicinal cum edible herb. Jitendra Singh Butola et. all, Medicinal Plants, 2(1) January 2010	Indian Himalayan Region
51.	<i>Allium stracheyi</i>	Faran	(Page No.75 , S.No 3) (Aromatic herbs)	Plants of Kedarnath Wildlife Sanctuary, Western Himalaya ; A Field Guide , Ishwari Datt Rai, Gajendra singh and Gopal Singh Rawat. 2017	Indian Himalayan Region
52.	<i>Utricularia kumaonsis</i>		(Page No. 236 , S.No 5) Insectivorous plants	Bladderworts of India by M.K. Janarthanam and A.N.Henry , BSI Coimbatore 17July 1992	Indian Himalayan Region
53.	<i>Trillium govanianum</i>	Nagchatri	(Page No.85 , S.No 16) (Other Herbs)	Trillium govanianum, Himalayan Trillium THE IUCN RED LIST OF THREATENED SPECIES	Indian Himalayan Region

APENDICES II

LIST OF THREATENED SPECIES

S.No.	Scientific Name	Local Name	Page No; Serial No	Conservation Status
1.	<i>Aquillaria agallocha</i>	Agar	(Page No. 69 , S.No.236 Other Trees)	Critically Endangered (IUCN)
2.	<i>Nardostachys jatamansi</i>	Jatamansi	(Page No. 75 , S.No.1 Aromatic Herbs)	Critically Endangered (IUCN & BSI); Threatened (Uttarakhand Biodiversity Board);
3.	<i>Lilium polyphyllum</i>	Kshira Kakoli	(Page No. 83, S.No. Other Herbs)	Critically Endangered (IUCN & BSI)
4.	<i>Saussurea costus</i>	Koot	(Page No. 86 , S.No. 23 Other Herbs)	Critically Endangered (IUCN & BSI)
5.	<i>Gentiana kurroo</i>	Trayman	(Page No. 86 , S.No. 24 Other Herbs)	Critically Endangered (IUCN & BSI); Threatened (Uttarakhand Biodiversity Board)
6.	<i>Chlorophytum borvivilianum</i>	Safed Musli	(Page No. 86 , S.No. 25 Other Herbs)	Critically Endangered (IUCN & BSI)
7.	<i>Beaucarnea recurvata</i>	Pony Tail Palm	(Page No. 185 , S.No. 2 Palm)	Critically Endangered (IUCN)
8.	<i>Hyophorbe lagenicaulis</i>	Bottle palm	(Page No. 186 , S.No. 7 Palm)	Critically Endangered (IUCN)
9.	<i>Dypsis leptocheilos</i>	Red neck palm	(Page No. 187, S.No. 15 Palm)	Critically Endangered (IUCN)
10.	<i>Hyophorbe verschaffeltii</i>	Spindle Palm	(Page No. 187, S.No. 18 Palm)	Critically Endangered (IUCN)
11.	<i>Aconitum hetrophyllum</i>	Atees	(Page No. 82 ,S.No. 1 Other Herbs)	Endangered (IUCN & BSI); Threatened (Uttarakhand Biodiversity Board)
12.	<i>Gastrochilus calceolaris</i>	Shoe-Shaped Belly-Lip	Page No.162 ,S.No. 83 Orchids)	Critically Endangered (IUCN)
13.	<i>Rauwolfia serpentina</i>	Sarp gandha	(Page No. 104 , S.No. 21 Other Shrubs)	Endangered (IUCN)
14.	<i>Coffea arabica</i>	Coffee	(Page No. 112 , S.No. 72 Other shrubs)	Endangered (IUCN)
15.	<i>Angelica glauca</i>	Choru	(Page No. 77 ,S.No. 16 Aromatic herbs)	Endangered (BSI)
16.	<i>Ficus andamanica</i>		(Page No. 13 ,S.No. 31 Ficus)	Endangered (IUCN & BSI);
17.	<i>Ginkgo biloba</i>	Maiden Hair tree	(Page No. 35 , S.No. 21 Other trees)	Endangered (IUCN)
18.	<i>Pittosporium eriocarpum</i>	Tumri	(Page No. 37 , S.No. 34 Other trees)	Endangered (IUCN & BSI);
19.	<i>Cedrus atlantica</i>		(Page No. 54 , S.No. 137 Other trees)	Endangered (IUCN)
20.	<i>Hopea wightiana</i>	Pav	(Page No. 74 , S.No. 264 Other trees)	Endangered (IUCN)
21.	<i>Dipterocarpus retusus</i>	Hollong	(Page No. 67 ,S.No. 222 Other trees)	Endangered (IUCN & BSI);
22.	<i>Caesalpinia bonduc</i>	Latakaranj	(Page No. 110, S.No. 59 Other shrubs)	Endangered (IUCN)
23.	<i>Picrorhiza kurrooa</i>	Kutaki	(Page No. 83 ,S.No. 9 Other herbs)	Endangered (IUCN)
24.	<i>Trillium govanianum</i>	Nagchatri	(Page No. 85 ,S.No. 16 Other herbs)	Endangered (IUCN)
25.	<i>Aerides odorata</i>		(Page No. 154 ,S.No. 31 Orchids)	Endangered (IUCN)

26.	<i>Cypripedium himalaicum</i>	Himalayan Venus	(Page No.162 ,S.No. 84 Orchids)	Endangered (IUCN & BSI); Rare (ENVIS & Indian Biodiversity Portal)
27.	<i>Pritchardia remota</i>	Pritchardia Palm	(Page No. 189 ,S.No. 30 Palm)	Endangered (IUCN)
28.	<i>Latania verschaffeltii</i>		(Page No. 192 , S.No 50 Palm)	Endangered (IUCN)
29.	<i>Zamia furfuracea</i>	Cardboard Palm	(Page No.195 ,S.No. 1 Cycads)	Endangered (IUCN)
30.	<i>Cycas circinalis</i>	Queen Sago Palm	(Page No. 195 ,S.No. 4 Cycads)	Endangered (IUCN & BSI)
31.	<i>Zamia fischeri</i>		(Page No. 196, S.No. 6 Cycads)	Endangered (IUCN)
32.	<i>Echinocactus grusonii</i>	Golden barrel cactus	(Page No. 207 ,S.No 78 Cactus)	Endangered (IUCN)
33.	<i>Saraca asoca</i>	Seeta ashok	(Page No.50 ,S.No. 108 other trees)	Vulnerable (IUCN & BSI)
34.	<i>Ulmus wallichiana</i>	Emroyi	(Page No. 42 ,S.No. 61 other trees)	Vulnerable (IUCN & BSI)
35.	<i>Pterocarpus marsupium</i>	Bijasal	(Page No. 56 ,S.No. 150 other trees)	Vulnerable (IUCN)
36.	<i>Jacrandra mimosifolia</i>	Jacrandra	(Page No.48 , S.No. 101 other trees)	Vulnerable (IUCN)
37.	<i>Santalum album</i>	Chandan	(Page No. 53 ,S.No. 129 other trees)	Vulnerable (IUCN & BSI)
38.	<i>Dalbergia latifolia</i>	Kala Shisam	(Page No. 61, S.No. 179 other trees)	Vulnerable (IUCN & BSI)
39.	<i>Vateria indica</i>	White Dammar	(Page No. 73 , S.No. 262 other trees)	Vulnerable (IUCN) & Critically Endangered (Indian Biodiversity Portal)
40.	<i>Malaxis muscifera</i>	Rishbhak	(Page No. 152 , S.No. 15 Orchid species)	Vulnerable (IUCN & BSI)
41.	<i>Aconitum balfourii</i>	Meetha	(Page No.82 , S.No. 2 other Herbs)	Vulnerable (IUCN), Threatened (Uttarakhand biodiversity Board)
42.	<i>Ravenea rivularis</i>	Majestic Palm	(Page No.186, S.No. 8 Palm)	Vulnerable (IUCN)
43.	<i>Dypsis decaryi</i>	Triangle Palm	(Page No. 186 , S.No. 6 Palm)	Vulnerable (IUCN)
44.	<i>P. greggii</i>		(Page No.25 , S.No. 7 Pine)	Near Threatened(IUCN)
45.	<i>P. gerardiana</i>		(Page No.27 , S.No. 22 Pine)	Near Threatened(IUCN)
46.	<i>Cryptomeria japonica</i>		(Page No.36, S.No. 27 Other tree species)	Near Threatened(IUCN)
47.	<i>Platyclusus orientalis</i>	Morpankhi	(Page No. 41, S.No. 58 Other tree species)	Near Threatened(IUCN)
48.	<i>Pterocarpus santalinus</i>	Raktchandan	(Page No. 60 , S.No. 172 Other tree species)	Near Threatened(IUCN)
49.	<i>Swietenia mahagoni</i>	American mahogany	(Page No. 63 , S.No. 200 Other trees)	Near Threatened (IUCN)
50.	<i>Abies spectabilis</i>		(Page No.69, S.No. 223 Other tree species)	Near Threatened(IUCN)
51.	<i>Dypsis lutescens</i>	Golden cane palm	(Page No.187, S.No. 16 Palm)	Near Threatened(IUCN)
52.	<i>Washingtonia robusta</i>	Mexican fan Palm	(Page No. 188, S.No. 21 Palm)	Near Threatened(IUCN)
53.	<i>Adonidia merrillii</i>		(Page No. 190, S.No. 35 Palm)	Near Threatened(IUCN)
54.	<i>Washingtonia filifera</i>	Desert fan palm	(Page No. 194, S.No. 67 Palm)	Near Threatened(IUCN)

55.	<i>Phoenix rupicola</i>		(Page No. 192, S.No. 49 Palm)	Near Threatened(IUCN)
56.	<i>Zamia pumila</i>	Coontie palm	(Page No. 195, S.No. 2 Cyacd)	Near Threatened(IUCN)
57.	<i>Trachycarpus takil</i>	Kumaon fan palm	(Page No. 193 , S.No. 60 Palm)	Threatened (Uttarakhand biodiversity Board); Rare (ENVIS)
58.	<i>Allium stracheyi</i>	Faran	(Page No. 75, S.No. 3 Aromatic herbs)	Vulnerable (ENVIS)
59.	<i>Acer caesium</i>	Kanchula	(Page No. 35 ,S.No. 25 Other trees)	Vulnerable (ENVIS)
60.	<i>Rheum moorcroftianum</i>	Dolu	(Page No. 84, S.No. 10 Other herbs)	Vulnerable (ENVIS)
61.	<i>Acer oblongum</i>	Pharbanj	(Page No. 32,S.No. 4 Other tree species)	Endangered (ENVIS)
62.	<i>Meizotropis pellita</i>	Patwa	(Page No. 107, S.No. 39 Other Shrub species)	Threatened (Uttarakhand biodiversity Board)
63.	<i>Indoptadenia oudhensis</i>	Gainti	(Page No. 43, S.No. 67 Other tree species)	Threatened (Uttarakhand biodiversity Board)
64.	<i>Schrebera swietenoides</i>	Van palas	(Page No. 62, S.No. 184 Other tree species)	Threatened (Uttarakhand biodiversity Board)
65.	<i>Eremostachys superba</i>	Mooch	(Page No. 89, S.No. 40 Other herbs)	Threatened (Uttarakhand biodiversity Board)
66.	<i>Cyathea spinolosa</i>	Tree fern	(Page No. 164, S.No. 1 Fern species)	Threatened (Uttarakhand biodiversity Board)
67.	<i>Phaius tankervilleae</i>	Nun's orchid	(Page No. 155, S.No. 38 Orchid species)	Threatened (Uttarakhand biodiversity Board)
68.	<i>Pecteilis gigantean</i>	Butterfly Orchid	(Page No. 159, S.No. 66 Orchid species)	Threatened (Uttarakhand biodiversity Board)
69.	<i>Diplomeris hirsuta</i>	Snow Orchid	(Page No. 160, S.No. 68 Orchid species)	Threatened (Uttarakhand biodiversity Board) & Vulnerable (Indian Biodiversity Portal)
70.	<i>Cymbopogon citrates</i>	Lemon Grass	(Page No. 139, S.No. 18 Grass species)	Rare ENVIS
71.	<i>Ficus cupulata</i>		(Page No. 16, S.No. 53 Ficus Species)	Rare ENVIS
72.	<i>Anangium lamarckii</i>	Ankola	(Page No. 56, S.No. 148 Other Trees)	Rare ENVIS
73.	<i>Cypripedium cordigerum</i>	Lady Slipper Orchid	(Page No. 158, S.No. 56 Orchid Species)	Rare (Indian Biodiversity Portal)

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