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# (V)
# Ex-Conservation of Wild Orchids in Botanic Garden, Yogi Vemana University, Kadapa, Andhra Pradesh, India

Orchids are one of the largest groups in the plant kingdom comprising 22,500 species under 779 genera (Mabberly, 2008) with preponderance in humid tropical forests. In India it is represented with 1195 species under 177 genera. In the state of Andhra Pradesh 77 species have so far been reported to occur in different locations (Raju *et al.,* 2008), most of the orchid collection from eastern ghats of Andhra Pradesh. Due to increase in developmental activities and habit destruction, many species have been facing threat and many species become extinct due to loss of habitats even before they are described. When the habitat is lost, plant populations get fragmented and lose their genetic flow and genetic viability and ultimately endangered their experience. In this connection to oppose the current issues conservation only possible with *ex-situ* methods in botanical gardens. The Botanic Garden, Yogi Vemana University, Kadapa (AP) is located within the campus, was established in the year 2008 and is being maintained by the Department of Botany. This botanic garden covers an area of about 25 acres and located 15 km away from Kadapa city. The garden is situated at 14°28' 09" N, 78°42'43" E at an altitude of 146 m. This area receives moderate annual rain falls about 377 mm and experiences a mean daily maximum temperature of 25.9° C (in summer season it is 41°C). In the year 2017 this garden obtained support under the Assistance to Botanical Gardens by Ministry of Environment and Forest and Climate Change (MoEF & CC and BSI) and given status as Botanic Garden for conserving RET

**Table 1:** The following orchids are conserving at Botanical Garden, Yogi Vemana University, Kadapa.

| Sl. | Name of species | Habit | Distribution | Endemic/ IUCN status |
|---|---|---|---|---|
| 1. | *Aphyllorchis montana* Rchb.f. | T | Ch | |
| 2. | *Bulbophyllum sterile* (Lam.) Suresh | E | Ch | PI |
| 3. | *Cymbidium aloifolium* (L.) Sw. | E | Ch | |
| 4. | *Dendrobium aqueum* Lindl. | E | Ch | PI |
| 5. | *Eulophia andamanensis* Rchb.f. | T | A & N | |
| 6. | *Eulophia epidendraea* (J.Koenig ex Retz.) C.E.C. Fisch. | T | Ch | |
| 7. | *Eulophia flava* (Lindl.) Hook.f. | T | Ch, Ka, Ne | |
| 8. | *Eulophia graminea* Lindl. | T | Ch, Ka, Ne | |
| 9. | *Geodorum densiflorum* (Lam.) Schltr. | T | Ch, Ka, Ku | |
| 10. | *Geodorum laxiflorum* Griff. | T | Ch, Ka, Ku | |
| 11. | *Goodyera procera* (Ker Gawl.) Hook. | T | Ch | |
| 12. | *Habenaria barbata* Wight ex Hook.f. | T | Ch, Ka, Ne | |
| 13. | *Habenaria furcifera* Lindl. | T | Ch, Ka, Ne | |
| 14. | *Habenaria digitata* Lindl. | | Ne | |
| 15. | *Habenaria gibsonii* var. *foetida* Blatt. &Mccann. | T | Vi | |
| 16. | *Habenaria longicornu* Lindl. | T | Ch | SI |
| 17. | *Habenaria panigrahiana* S.Misra | T | Ku | PI |
| 18. | *Habenaria plantaginea* Lindl. | T | Ch, Ne | PI |
| 19. | *Habenaria rariflora* A.Rich. | T | Ch | PI |
| 20. | *Habenaria roxburghii* Nicolson | T | An, Ka, Ch | PI |
| 21. | *Liparis paradoxa* (Lindl.) Rchb.f. | T | Ch | |
| 22. | *Luisia zeylanica* Lindl. | E | VSKP | |
| 23. | *Rhynchostylis retusa* (L.) Blume | E | EG | |
| 24. | *Vanda tessellata* (Roxb.) Hook. ex G.Don | E | Ch, Ne | |

**Habit** : E- Epiphyte, T- Terrestrial, V-Vine: Distribution: An- Anantapur, A& N- Andaman- Nicobar Islands, Ch-Chittoor, Ka- Kadapa, Ku-Kurnool, Nellore, VSKP- Visakapatanam, Vi: Vikarabad, EG-East Godavari: Endemic/ IUCN status: SI-South India; PI- Peninsular India.

species from Eastern Ghats of Andhra Pradesh. The garden is currently harbouring about 900 indigenous and exotic taxa belonging to 118 families including 120 RET species (Reddy *et al.,* 2022). As a part of conservation specially focused on orchids for their conservation and maintenance in the garden. In the present work 24 species of orchids reported from Botanic Garden, Yogi Vemana University, Kadapa. This will promote avoid species extinction in wild and as well as help full for species maintenance. The species names have been arranged in alphabetically.

At present study a total of 24 taxa (Fig. 1) including one variety were collected from Andhra Pradesh as well as out side and being maintained in Lead Botanic Garden. Of these 24 taxa 18 terrestrial, 6 epiphytic. The collected plants were prepared herbarium specimens by following standard herbarium methodology for identification and these herbarium specimens were deposited in YVU Herbarium for future references.

Among these 24 species 5 species are endemic to Peninsular India (Ahmedullah and Nayar, 1986) these are *Bulbophyllum sterile*, *Habenaria longicornu*, *Habenaria panigrahiana*, *Habenaria rariflora*, *Habenaria roxburghii*. *Dendrobium aqueum* endemic to Peninsular India (Singh *et al.,* 2015). *Habenaria gibsonii* var. *foetida* new distributional record to Telangana State (Paramesh and Reddy, 2021). *Eulophia andamanensis* introduced from Andaman and Nicobar Islands.

Collection of orchid species for the commercial purpose has increased in many fields, as a result number of species have been facing severe threat and becoming extinct. To prevent the loss of orchid species which have been facing threat of extinction, species conservation measures through in-situ or ex-situ methods is needed. In view of these facts many of the orchid species collected from their natural habitats and being introduced in the botanical garden for multiplication, propagation and their conservation.

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