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Original article**Orchids of arunachal Pradesh : diversity, economic potential, and medicinal benefits****Lachi Drema¹ And Dorjee Kessang²**¹ICAR Research Complex for NEH Region, AP Centre, Basar Arunachal Pradesh²M. Sc (Horti), Doon PG College of Agriculture, Science and Technology, Dehradun, Uttarakhand*Corresponding Author: lachidrema2015@gmail.com

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INTRODUCTION






The literal meaning of the term orchid (orkhis) in Greek is testicles and it was Theophrastus who first coined the term as the anatomy of plant resembles testicles. Orchids are one of the largest and most diverse groups of angiosperms consisting of nearly 25,000 – 30,000 species belonging to 750 – 800 genera (Gentry *et al.*, 1987). Arunachal Pradesh, nestled in the northeastern corner of India, is renowned as the "Orchid Paradise of India" due to its exceptional richness in orchid species. With over 600 documented species, Arunachal Pradesh stands out as one of the most biodiverse regions for orchids in the country. Orchids, known for their exquisite beauty and intricate floral structures, play a significant role in the ecological and cultural fabric of Arunachal Pradesh. They serve as indicators of habitat health, contributing to pollination dynamics, nutrient cycling, and the overall biodiversity of the region. Beyond their ecological roles, orchids hold deep cultural significance among indigenous communities, often integrated into rituals, traditional medicine, and local handicrafts. This introduction sets the stage for a deeper exploration of Arunachal Pradesh's orchid diversity, highlighting their ecological functions, conservation status, and cultural significance. By understanding and protecting these fragile yet resilient plants, we can ensure the preservation of Arunachal Pradesh's rich orchid heritage for future generations.







ORCHID DIVERSITY IN ARUNACHAL PRADESH

Arunachal Pradesh is one of the largest states in north eastern states of India, with a monsoon-influenced subtropical humid climate (Drema *et al.*, 2024). Arunachal Pradesh is located in the northeastern region of India, between latitudes 26°30'N and 29°31'N and longitudes 91°30'E and 97°30'E (Kessang *et al.*, 2024). Arunachal Pradesh's diverse topography, ranging from tropical forests to alpine meadows, supports a wide range of orchid species. These include terrestrial, epiphytic, and lithophytic orchids, each adapted to specific ecological niches. The state's orchid flora includes rare and endemic species that are integral to the region's biodiversity and ecosystem services.

DIFFERENT SPECIES OF ORCHID FOUND IN ARUNACHAL PRADESH

Arunachal Pradesh, known for its rich biodiversity, hosts a diverse array of orchid species. Here are some notable species found in the region:

<p>Dendrobium: This is one of the largest orchid genera found in Arunachal Pradesh, comprising both epiphytic and lithophytic species. They are characterized by their showy flowers and are often found in a variety of habitats from lowland forests to higher elevations.</p>	
<p>Foxtail: The plant has a short, stout, creeping stem carrying up to 12, curved, fleshy, deeply channelled, keeled, retuse apically leaves and blooms on an axillary pendant to 60 cm (24 in) long, racemose, densely flowered, cylindrical inflorescence that occurs in the winter and early spring.</p>	
<p>Cymbidium: These terrestrial or lithophytic orchids are well-known for their long-lasting and fragrant flowers. They are adapted to diverse habitats ranging from tropical forests to alpine meadows in Arunachal Pradesh.</p>	
<p>Coelogyne: Known as the 'necklace orchids,' Coelogyne species are commonly found in the forests of Arunachal Pradesh. They are characterized by their clustered pseudobulbs and fragrant, waxy flowers.</p>	
<p>Phaius tankervilleae: Also known as the 'nun's orchid,' this terrestrial orchid is found in damp areas and marshy lands across Arunachal Pradesh. It has large, showy flowers that bloom in shades of white, pink, or purple.</p>	

<p>Vanda: These epiphytic orchids are known for their vibrant and often fragrant flowers. They typically grow on trees or rocks and are well-adapted to the humid environments of Arunachal Pradesh.</p>	
<p>Eria: This genus includes a variety of epiphytic and terrestrial orchids found in Arunachal Pradesh. They are characterized by their small, often brightly colored flowers and are adapted to a range of elevations and habitats.</p>	
<p>Bulbophyllum: Known for their diverse floral forms and often intricate pollination mechanisms, Bulbophyllum species are found in Arunachal Pradesh's forests. They include both epiphytic and terrestrial species.</p>	
<p>Liparis: These small terrestrial or lithophytic orchids are found in moist habitats across Arunachal Pradesh. They have inconspicuous flowers but are important components of the local orchid diversity.</p>	
<p>Paphiopedilum: Commonly known as the 'lady's slipper orchids,' these terrestrial orchids are found in the cooler regions of Arunachal Pradesh. They are prized for their unique pouch-like flowers.</p>	
<p>Calanthe: These terrestrial orchids are found in shady areas and forest floors of Arunachal Pradesh. They have broad leaves and spikes of colorful flowers.</p>	

These are just a few examples of the diverse orchid species found in Arunachal Pradesh, each contributing to the region's rich floral diversity and ecological importance.

ECONOMIC POTENTIAL

1. Ornamental Horticulture

The primary economic value of orchids lies in their ornamental use. Different genera and species are cultivated for their stunning flowers, contributing significantly to the horticultural trade.

- **Phalaenopsis (Moth Orchids):** These are among the most popular orchids in the ornamental plant market. Known for their ease of care and long-lasting blooms, they are extensively sold in nurseries and garden centres worldwide. They are often used in home decor, events, and as gifts.
- **Cattleya:** Known as the "Queen of Orchids," Cattleya species and hybrids are prized for their large, colorful, and fragrant flowers. They are highly sought after by collectors and for use in corsages and floral arrangements.
- **Dendrobium:** Dendrobium orchids are widely cultivated for their diverse flower forms and colors. They are commonly used in floral displays and as potted plants. Thailand is a major exporter of Dendrobium cut flowers, contributing significantly to its economy.
- **Cymbidium:** These orchids are popular in temperate regions and are valued for their large, waxy flowers that bloom in the winter. Cymbidiums are often used in cut flower arrangements and as potted plants for festive decorations.

2. Perfume and Flavoring Industry

Certain orchids are crucial in the production of natural flavorings and fragrances.

- **Vanilla (Vanilla planifolia):** The most economically significant orchid in the flavoring industry is *Vanilla planifolia*, the source of natural vanilla. The vanilla beans produced by this orchid are used to flavor food and beverages, and in the production of perfumes and cosmetics. The global demand for natural vanilla makes it a valuable agricultural product, with major production centres in Madagascar, Indonesia, and Mexico.

MEDICINAL PROPERTIES

Orchids have been used in traditional medicine systems for centuries, and modern research is uncovering their pharmacological potential.

- **Dendrobium:** Various species of Dendrobium are used in Traditional Medicine (TCM). *Dendrobium officinale*, for example, is believed to have immunomodulatory, anti-inflammatory, and antioxidant properties. It is used to treat ailments such as fever, dry mouth, and eye disorders.
- **Gastrodia elata:** Known as Tian Ma in TCM, *Gastrodia elata* is used to treat headaches, dizziness, and epilepsy. It has gained economic importance due to its neuroprotective properties and potential use in modern neurology.

- **Vanda:** Vanda orchids, particularly *Vanda tessellata*, are used in Ayurvedic medicine. They are believed to have antimicrobial, anti-inflammatory, and analgesic properties. Extracts from these orchids are used to treat rheumatism, wounds, and infections.

CONCLUSION

Arunachal Pradesh's orchids represent a unique blend of ecological richness and cultural heritage. Protecting them requires a holistic approach that balances conservation with sustainable development and respects the intricate relationships between orchids, ecosystems, and human societies. By recognizing the value of orchids beyond their aesthetic appeal, we can ensure that future generations continue to marvel at the diversity and beauty of these floral wonders in the Orchid Paradise of India.

REFERENCES

- Gentry, A. H., & Dodson, C. H. (1987). Diversity and biogeography of neotropical vascular epiphytes. *Annals of the Missouri Botanical Garden*, 74(2), 205-233.
- DREMA, L., GAUTAM, S., & RAWAT, S. (2024). Climatic trends and its impact on reference evapotranspiration and crop water requirement of rice crop in Arunachal Pradesh, India. *Journal of Agrometeorology*, 26(2), 220-224. <https://doi.org/10.54386/jam.v26i2.2510>
- Drema, L., & Kessang, D. (2024). Mann-Kendall and Sen's Slope Estimator Test to Analyze Trends for Temperature and Rainfall in Eastern Himalayas of Arunachal Pradesh, India. *International Journal of Innovative Science and Research Technology*, 9(10), 1882-1888. <https://doi.org/10.38124/ijisrt/IJISRT24OCT1916>