

**DENDROBIUM SW. DIVERSITY AND HOST SPECIFICITY IN GOALPARA DISTRICT, ASSAM, INDIA**

<sup>1</sup>Bikramjit Barman\* & Dr. <sup>2</sup>Someswar Rao

<sup>1,2</sup>Plant Tissue Culture Laboratory, Dept. of Botany, Goalpara College, Goalpara-783101, Assam

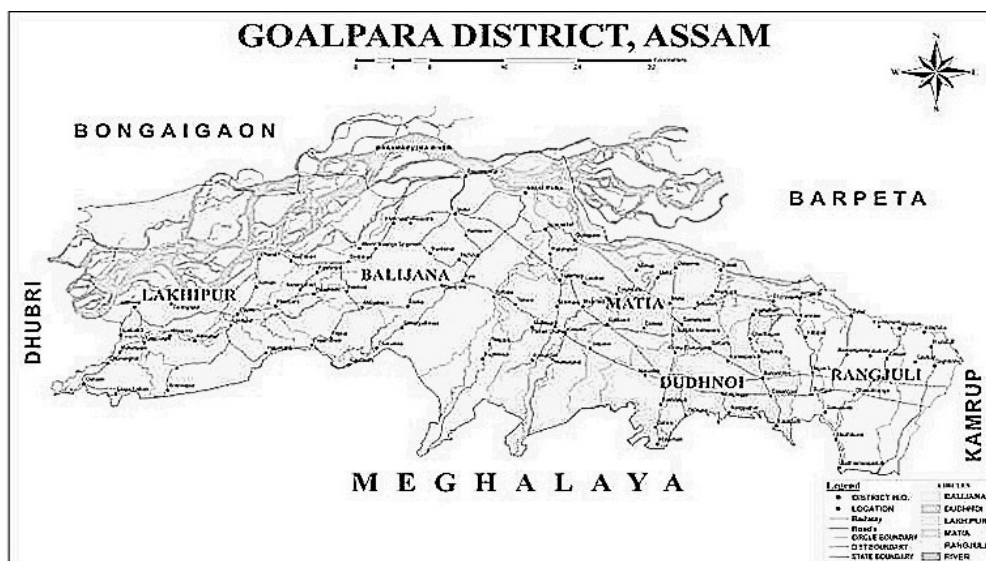
\*Corresponding author Email: biki125@gmail.com

**ABSTRACT:** Our present work deals with the present status of Dendrobium orchid diversity in the Goalpara District, Assam. All total 19 species of Dendrobium has been recorded from the District. All of them are epiphytic. Extensive field survey was done in the study area for collection and identification of Dendrobium from the region.

**Key words:** Dendrobium, Goalpara District, Assam

**INTRODUCTION**

Orchidaceae is considered as one of the most ecologically and morphologically diverse as well as largest families of flowering plants (Jalal & Jayanthi 2012). Dendrobium is one of the most beautiful and important orchid for floricultural industry. There are almost 900 species of Dendrobium available all over the world, which are widely distributed in India, China, New Guinea, Australia, Pacific islands and New Zealand. The no. of Dendrobium species has been estimated between 900 to 1600 by different authors (Holtum, 1957; Hooker, 1890; Santapou and Henry, 1973; Hawkes, 1970, AdaniLokho 2013). In India nearly 102 species are found and Assam represents around 43 species. (AdaniLokho 2013, Assam's flora S. Chowdhery). Study site: Goalpara district is situated on the south bank of river Brahmaputra. Geographical location of the district is between latitude 25°50' N - 26°10' and longitude 90°07' - 91°05' E at 100-m above the mean sea level (msl). It covers an area of 1831 sq. km and is surrounded by East and West Garo Hill districts of Meghalaya on the south; Kamrup District on the East, Dhubri district on the West and the river Brahmaputra all along the North. The different ethnic groups that lives in Goalpara district are Rabha, Koch Rajbanshi, Boro, Garo, etc. among which Rabha is the largest group.



Map showing the study site

**Fig-1: Location map of Goalpara district Assam****MATERIALS AND METHOD**

A vigorous field survey works were carried out during, March 2009 to July 2013; covering all the seasons of the year in all parts of Goalpara District Assam including floral nurseries, floral farms, forest areas and religious places (locally known as THANs). The species were collected from the field and live species were grown in the botanical garden of the Department of Botany Goalpara College, Goalpara, Assam. Herbariums were also prepared and submitted in the Dept. of Botany, Goalpara College. Photographs were taken in the field and were identified with the help of monographs available and further confirmation is done from the local taxonomists of BSI Shillong.

**RESULT AND DISCUSSION**

During our field survey in the study site, 19 species of *Dendrobium* were recorded (Table 1). All the collected species were epiphytic. Among those *Dendrobium aphyllum* (Roxb.) Fischer and *Dendrobium fimbriatum* Hook. were spotted many times in different parts of the District and least percentage of occurrences of species are *Dendrobium densiflorum* Wall., *Dendrobium formosum* Roxb.ex Lindl., *Dendrobium anceps* Sw. and *Dendrobium jenkinsii* Wall.ex. Lindl. We were able to record *Dendrobium jenkinsii* Wall. ex. lindl. Only from one place, under Ranguli block. It is noted that large scale depletion of forest area in the last few decades has been resulted in a drastic depletion of orchid species in the district. As the deforestation severely affected the orchid flora of the district, it becomes necessary to conserve the valuable orchid species of the region through various conservation strategies. The main reason of deforestation includes various anthropogenic activities like, construction of building, construction of roads, railways, bridge; collection of fire wood; collection of timber; rubber plantation; continuous extension of agricultural lands etc. In our present study we have encountered 17 host plants which are also dominant tree species of the district. Out of these total 17 host plants the most preferable host plant of orchid species are *Ficus elastica* Roxb. (29.41%) followed by *Mimusops elangi* L. (23.52%), *Michelia champaca* L.(17.64%), *Mangifera indica* L.(17.64%), *Tectona grandis* (17.64%), *Dillenia indica* L. (17.64%), *Artocarpus heterophyllus* Lam.(17.64%), *Bischofia javanica* Blume (11.76%), *Lagerstroemia flos-reginae* Retz.(11.76%), *Shorea robusta* Gaertn.f.(11.76%), *Dysoxylum procerum* (Wall) Hiem. (11.76%), *Schima wallichii* (D.C) korth (11.76%), *Albizia saman* F.Muell. (5.88%), *Sterospermum chelonoides* (L.f.) D.C., *Lannea grandis* (Dennst.) Engl.(5.88%), *Gmelina arborea* Roxb. (5.88%), *Bombax ceiba* L.(5.88%). However it was observed that *Dendrobium* orchid species grows on most of the individual trees except few. Some photographs which were taken in the Field are shown in the plate no.1.

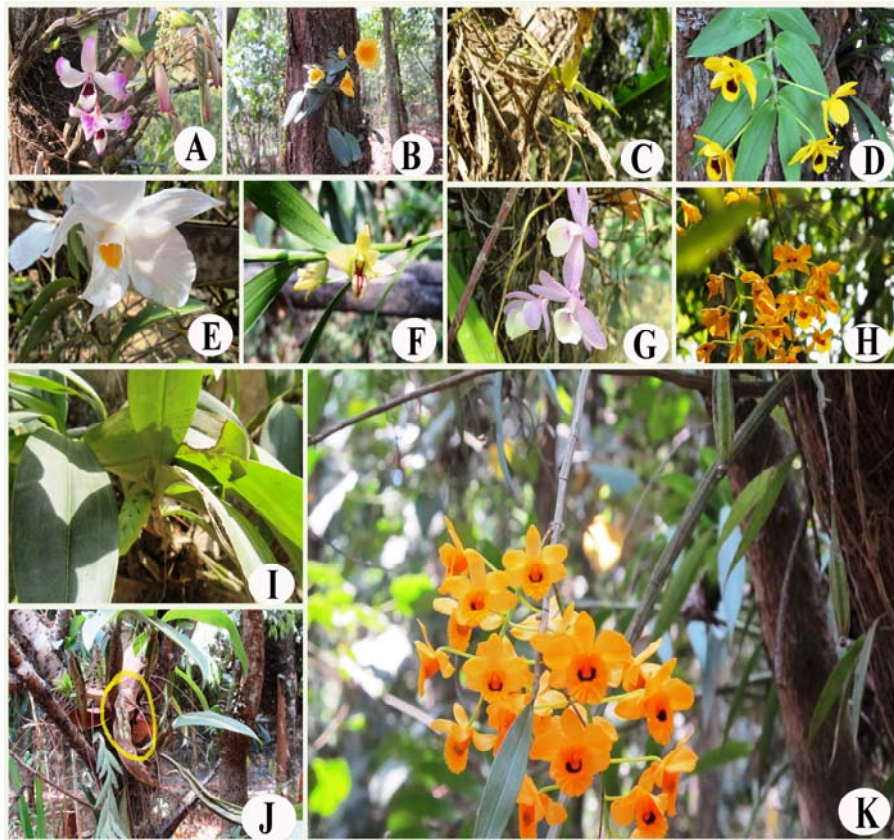


Plate 1, Fig A: *D. nobile* Lindl., Fig B: *D. jenkinsii* Wall.exLindl., Fig C: *D. anceps* Sw., Fig D: *D. moschatum* (Buch.-Ham) Sw., Fig E: *D. formosum* Roxb.ex Lindl., Fig F: *D. cathcartii* Hook.f., Fig G: *D. aphyllum* (Roxb.) Fischer, Fig H: *D. chrysanthum* Wall.ex Lindl., Fig I: *D. densiflorum* Wall. Fig J: *D. farmeri* Hook., Fig K: *D. fimbriatum* Hook.

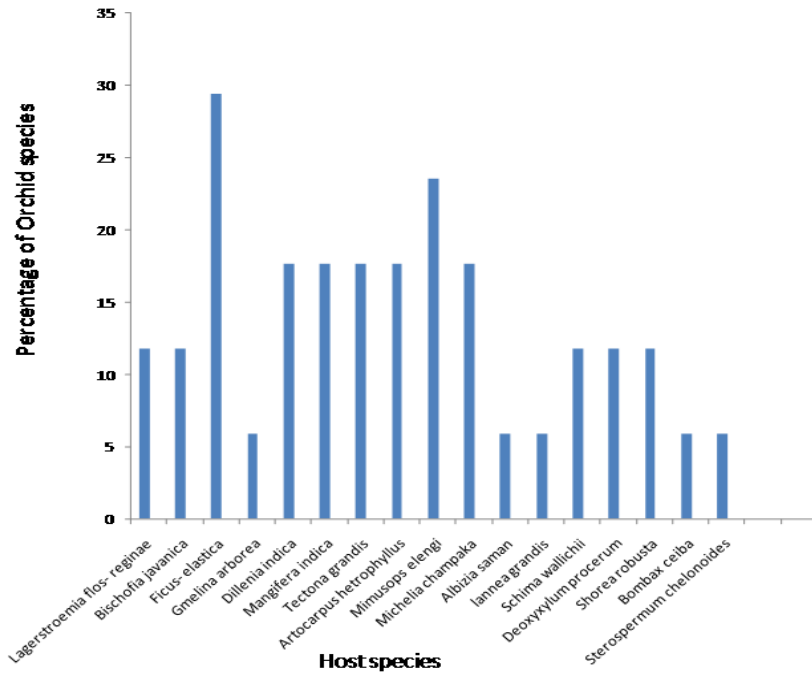


Fig-2: Bar graph showing host preference of orchid preferences

Table 1: List of Orchid species along with their preferred host species.

Name of Orchid species	Hosts	Status	Flowering time
<i>Dendrobiumaphyllum</i> (Roxb.) Fischer	<i>Lagerstroemia flos-reginae</i> Retz., <i>Bischofia javanica</i> Blume, <i>Ficus elastica</i> Roxb., <i>Gmelina arborea</i> Roxb., <i>Dillenia indica</i> L.	Common	April- May
<i>D. anceps</i> Sw.	<i>Mimusops elangi</i> L., <i>Tectona grandis</i> L.f., <i>Ficus elastica</i> Roxb., <i>Artocarpus hetrophyllus</i> Lam.	Rare	June - September
<i>D.cathcartii</i> Hook. f	<i>Artocarpus heterophyllus</i> Lam., <i>Ficus elastica</i> Roxb.	Rare	April- May
<i>D. crysanthum</i> Wall. Ex. Lindl	<i>Mimusops elengi</i> L., <i>Ficus elastica</i> Roxb.	Rare	March-May
<i>D.densiflorum</i> Wall.	<i>Albizia saman</i> F.Muell.	Rare	April-July
<i>D. devonianum</i> Paxt.	<i>Lanea grandis</i> (Dennst.) Engl.	Rare	July- September
<i>D.farmeri</i> Paxt.	<i>Schima wallichii</i> (DC.) Korth	Rare	Mrach- June
<i>D.fimbriatum</i> Hook.	<i>Dysoxylum Procerum</i> (Wall) Hiem, <i>Ficus elastica</i> Roxb.	Common	April-July
<i>D. formosum</i> Roxb. ex. Lindl.	<i>Michelia champaca</i> L., <i>Mangifera indica</i> L.	Rare	March- June
<i>D. heterocarpum</i> Wall.	<i>Artocarpus hetrophyllus</i> Lam, <i>Michelia champaca</i> L.	Rare	April- June
<i>D. jenkinsii</i> Wall. ex Lindl.	<i>Tectona grandis</i> L.f, <i>Shorea robusta</i> Gaertn.f.	Rare	March- June
<i>D. lithuiflorum</i> Lindl.	<i>Mimusops elengi</i> L., <i>Mangifera indica</i> L.	Rare	March- May
<i>D. moschatum</i> (Buch.-Ham.) Sw.	<i>Shorea robusta</i> Gaertn.f., <i>Dillenia indica</i> L.	Rare	March-June
<i>D. miserum</i> Reich.f.	<i>Artocarpus hetrophyllus</i> Lam., <i>Mangifera indica</i> L.	Rare	April- June
<i>D. nobile</i> Lindl.	<i>Bombax ceiba</i> L., <i>Stereospermum chelonoides</i> (L.f.) DC.	Rare	March- May
<i>D. podagraria</i> Hook.f.	<i>Michallia champaka</i> L.,	Rare	April- July
<i>D. sulcatum</i> Lindl.	<i>Mimuspos elengi</i> L., <i>Mangifera indica</i> L.	Rare	April-May
<i>D. transparens</i> Wall. Ex Lindl.	<i>Lagerstroemia flos-reginae</i> Retz., <i>Bischofia javanica</i> Blume, <i>Dillenia indica</i> L.	Rare	April-June
<i>D. wardianum</i> Warn.	<i>Tectona grandis</i> L.f.,	Rare	March-June

## CONCLUSION

It is observed that inspite of species richness of the genus *Dendrobium*, about almost all the species in the study area are either in a state of rare or threatened category. If, regular forest destruction continues in the region, at this alarming rate the species will extinct very soon from its natural habitat. Therefore it becomes urgent need to conserve its natural habitat for the protection of these species in the district. There is huge scope for the development of floriculture industry in the region for the economic up liftmen of the society. Government and NGOs should come forward to conserve this valuable orchid species of the District. Establishment of Tissue culture lab and afforestation programme may help in the conservation process.

Acknowledgement: Authors are thankful to University Grant Commission New Delhi for providing financial assistance to carry out this research work.

## REFERENCES

- Barua I.C, (2001). Orchid Flora of Kamrup District. Bishen Singh, Mahendra pal singh, Dehra Dun India
- Borgohain, A., Gogoi, A.B. and Nath P.C. (2010). Orchid diversity and host specificity in Deopani reserve forest, sadiya Assam, NeBIO1(3), 16-20.
- Chowdhery, H.J. Pal, G.D, (1997). Orchidaceae of Arunachal Pradesh. Bishen Singh Mahendra Pal Singh, Dehra Dun, India

- Chowdhery, S, (2005). Assam's Flora. Assam Science Technology and Environment Council, Guwahati, Assam India
- Chowlu, K. and Das, A.K (2007). Orchids of floricultural importance from Arunachal Pradesh (India). *Pleione* 1(2):21-25
- Gogoi K., Borah, R. L. and Sharma G.C. (2009). Orchid flora of Joypur Reserve Forest of Dibrugarh District of Assam, India *Pleione*, 3(2): 135-147
- Gogoi, K. (2011). Dendrobium of Joypur Reserve forest of Dibrugarh district of Assam India *NeBIO*, 2(1):20-26
- Holtum, R.E. (1957). A Revised Flora of Malaya. I. Orchids of Malaya. Government Printing Office, Singapore, London.
- Hooker, J.D. (1890). Flora of British India. 5. L. Reeve and Co., Ashford, Kent.
- Jain SK & Rao RR, (1997). A Handbook of Field & Herbarium method. Today & Tomorrow's Printers and Publishers, New Delhi.
- Lokho A., (2013). Diversity of Dendrobium Sw. Its Distributional Patterns and Present Status in the northeast India, *International Journal of Scientific and Research Publications*, Vol 3, Issue 5,
- Mao, A.A. and T.M. Hyniewta. (2000). Floristic diversity of North – East India. *J. Assam Sci. Soc.* 41(4):255-256
- Pradhan, M. (2004). 100 Sikkim Himalayan Orchids, Mumbai, India
- Roy, A.S. (1979). Orchids of India, National Book Trust. New Delhi, India.