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Production Technology And Medicinal Uses Of Some *Coelogyne* Species (Orchidaceae)

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Abstract

In angiosperms, Orchidaceae is one of the most diverse family. Orchidaceae family members contain alkaloids, flavonoids, triterpenoids, stilbenoids. Orchinol, hircinol,cypripedin, jibantine,nidemin and loroglossin are some important phytochemicals are extracted from orchids.These plants are widely used in Indian and chinese medicines. Orchids contains active ingredients and are used in making medicines. Orchids have curative properties to cure many diseases. In the present study some of medicinal orchids production are briefly described.

Introduction

The Orchidaceae constitute one of the largest families of flowering plants comprising about 779 genera and 22,500 species (Mabberley, 2008). It contributes about 40 per cent of the Monocotyledons (Rasmussen, 1985). In India, it represents second largest flowering plant family with 1,141 species in 166 genera and contributes about 10%

of Indian flora (Jain, 1980; Kumar & Manilal, 1994). Orchids are the most fascinating plants by reason of their diversity and specialization in floral and vegetative features (Pijl& Dodson, 1966; Holttum, 1977; Dahlgren *et al.*, 1985). They are unique in forms, colours and flower structure. However the vegetative organization is variable throughout the family (Dressler, 1993). In general they possesses velamen roots / root tubers, rhizome, pseudobulbs, leaves and attractive flowers. During evolutionary process orchids have adapted to distinct environments, so that they can grow as epiphytes, terrestrials, lithophytes or saprophytes (Black, 1973). These environmental variations contribute for structural modifications in vegetative structure (Pabst & Dungs, 1975). Allmost 75% of family is represented by epiphytic orchids (Atwood, 1986).

The members of Orchidaceae are widely distributed in all parts of the world with the greatest concentration in the tropics. In India, orchids are concentrated mostly in Eastern Himalaya (Hooker, 1895, 1890; King &Pantling, 1898; Brühl, 1926), Western Himalaya and also Western Ghats. Orchids with their attractive range of varied flowers form excellent ornamental plants and they are rich source

of medicines and aesthetic pleasure. Millions of cut flowers of *Cattleya, Paphiopedilum* and *Phalaenopsis* are sold in the Western countries and orchid cut flower industry has now become multimillion dollar business in Europe, USA and South-East Asia.

Besides, orchids have got immerse pharmaceutical potential. According to Lal *etal.* (1980) root tubers of *Hebenariaedgeworthii* (Riddhi- Vriddhi) form an important composition of 'Astavarga' group of drugs in Ayurvedic medicine. Tubers of some terrestrial orchids have been used for treatment of diarrhea, dysentery, intestinal disorders, cough, cold and tuberculosis (Kaushik,1983; Arditti, 1992; Hossain, 2011; Subedi *et al.,* 2011; Ghorbani *et al.,* 2014).

The present Description about some Coelogyne species

1. *C. corymbosa* Lindl.

2. External Morphology

Pseudobulbs many and crowded, ovoid to sub-rhomboid in shape, slightly sheathed at the bases; leaves two, narrowly elliptic to oblong, acute and narrowed towards the base; Racemes shorter or longer than the leaves; flowers three or four on a drooping or erect inflorescence (Fig. 5A); lip oblong, tri-lobed with four large yellow eyes bordered with orange; column curved and slightly winged towards the apex.

Distribution

*C. corymbosa*is distributed in Meghalaya and Sikkim at an elevation of 2,000 to 3,000 meters (Abraham & Vatsala, 1981)

Host Tree and Flowering

It is an epiphyte, growing on the tree trunk of *Mangifera indica* collected from Dodabetta, Ooty (Tamil Nadu) at 1800 m elevation (Table 4). It flowers during April and May.

Production technology

In case of *C. corymbosa,* A potting blend of coco chips or coco peat + brick pieces + tree bark is perfect. Many of orchids are defeated by over water rather than under watering which leads to the rotteness and other diseases. Water with PH 5.02 to 6.5 is preferred by most of the orchids. The aptech of nutrients can be impeded by the watering with lower or higher PH. Under high sunlight and high temperature the continuous watering is necessary. These orchids humidity should be maintained 72-85% in summer and 42- 55% in winter to avoid the effect of cultivation.

Medicinal uses

Juice of pseudobulbs applied in wound, paste applied in forehead to cure headache

2. C**.** ***flaccida*** **Lindl.**

External Morphology

Pseudobulbs ovoid–cylindrical, covered with brown sheaths at the base; leaves two, coriaceous, narrowly, oblong, 5-7 cm long. Inflorescence a simple raceme, pendulous, from the base of the pseudobulb, 5-7 cm long, many flowered, bracts ovate-acute; flowers creamy white, 2-3 cm across, sepals slightly unequal, oblong lanceolate, spreading; lip dark-brown, wavy, disc with three yellow ridges between the side lobes, midlobe small, broadly ovate; column long, hooded at the apex.

Distribution

*C. flaccida*is widely distributed in Sikkim, Nepal, Khasia Hills and Burma at the elevation of 1000-1700 meters (Bose & Bhattacharjee, 1980). It is rare species in South India, especially distributed in Annamalai Hills (Abraham & Vatsala, 1981)

Host Tree and Flowering

It is an epiphyte growing on the tree trunk of *Castanopsis indica.*. It comes to flowering during March to May.

Production technology

This orchid require high light levels. Orchids needed a light potential of an average of 4000 foot candles. A winter high temperature of 10 degree Celsius to 12 degree Celsius and the summer day time temperature of 22°C to 25°C are required for these orchids which could tolerate any temperatures in a short duration. Yah humidity up to 72-75% is to be necessary for these orchids. This can be cultivated by cutting of the shoots along with roots or air layering's. A large scale growth of orchids includes possible through tissue culture by using shoot tips auxiliary buds and the roots as explants. Potting mixture should consist of coco chips + brick pieces + leaf fern (1:1:1).

Medicinal uses

Paste of pseudobulb is applied to forehead to cure headache and fever, juice is taken for indigestion

3.C. ***nervosa*** **A. Rich.**

External Morphology

Pseudobulbs lemon-yellow and rugose all over, 3 cm height and 2.5 cm across, leaves arising from the top of the pseudobulb; leaf 15-18 cm long, 3-3.5 cm broad, coriaceous. Inflorescence terminal from the top of the young pseudobulb, droopping with heavy weight of the flower, sheaths 6-8, innermost foliaceous; flowers large, pretty white and mustard; pedicel with 2 cm long flowers; lip white outside marked with veins of mustard colour inside.

Distribution

C. nervosa is distributed in South India especially in Mysore to Tirunelvely, Nilgiri hills, and Munnar (Abraham & Vatsala, 1981).

Host Tree and Flowering

It is an epiphyte, growing on the tree trunk of *Schima wallichii*, at an elevation of 1800 m .It flowers during August-September (Abraham & Vatsala, 1981).

Production technology:

Orchids can be cultivated on the open fields in the mild regions. They can be grown under full Sun or partial shade. The growth of the seed depends on its relation with the soil dewlling fungus which becomes a source of food for plants. The division of tubers is another way to cultivate this orchids. This division is possible when the flowers fed out or when the plant has a fully developed Rosette of leaves.

Medicinal Uses

C.nervosa the most commonly used parts of orchid plants are pseudo bulbs which protects members of disorders followed by leaves, roots, tubers and rhizomes and flowers Subedi (2011). To processes required therapeutic activities like antibacterial antifungal antioxidant anti cancer. Silogyn anarchyut genus was(Marasini and Joshi 2012, Sarmad Moin et al. 2012, Sahaya Shibu et al. 2013, Tkachenko et al. 2015). When the local communities in Nepal and India fill thirsty the eat freshly cut species of Coelogyne in the forest (Subedi2011).

4. *C. ovalis* Lindl.

External Morphology

Pseudobulbs long, cylindrical, polished, sheathed at the base; leaves two, coriaceous, elliptic-oblong, 10-13 cm long. Inflorescence terminal, erect, 5-7 cm tall, two to three flowered; petals filiform, oblong, white or yellowish-streaked with purple, lobes fringed with long black stiff hairs, column curved, winged on its upper half; pollinia obovate; capsule pyriform (Fig. 16A).

Distribution

This taxon is distributed in Sikkim, Khasia hills, Nepal, Dehra Dun and Nilgiri Hills and Mysore (Abraham & Vatsala, 1981).

Host Tree and Flowering

It grows on the tree trunk of *Terminalia bellirica,* at an elevation of 2200 m . It flowers and fruits during October–December (Abraham & Vatsala, 1981).

Production technology

During the active phase of cultivation these plants needed high humidity moderate sheet and plenty of water. The bright light with an intensity of 3000 to 4000 foot candles and strong air movements is necessary. In the large chunks of the tree furn fibre or in the chunks of hardwood charcoal these are kids grow in high scale. For the act to vegetative growth and flowering a day temperature of 30 degree centigrade to 32 degree centigrade and high temperature of 20 degree centigrade to 25 degree centigrade and humidity of 80% in summer. And 62 -70% in spring and winter is required. The aeration around the routes must be extraordinary which allows the roots to dry speedy after heavily watered. The medium must never be squashy and waterlogged to the plants grown in pots. These plants have the dilute solution of 0.3% NPK(20:20 : 20) spread twice in a month.

Medicinal uses

Aphrodisiac, pseudo bulb Paste is used to relieve from fever and headache and also applied in burns , Paste is used for boils and backache .

References

1. Mabberley, D.J. 2008. *Mabberley's Plant Book: A Portable Dictionary Of Plants, Their Classification And Uses*, 3rd Edition (Revised). Cambridge University Press, Cambridge.
2. Rasmussen, F.N. 1985. The Diversity Of Stomatal Development In Orchidaceae, Subfamily-Orchidiodeae. *Bot. J. Linn. Soc.* 82: 381- 393.
3. Das, S. & Jain, S.K. 1980. *Fascicles Of Flora Of India*. Fascicle 5 Orchidaceae: Genus *Coelogyne*. Botanical Survey Of India, Calcutta.
4. Kumar, C.S. & Manilal, K.S. 1994. *A Catalogue Of Indian Orchids.* Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
5. Dressler, R.L. & Dodson, C.H. 1960. Classification And Phylogeny In The Orchidaceae. *Ann. Missouri Bot. Gard. Bull.* 47: 25-68.
6. Holttum, R.E. 1977. A Personal View Of Orchids. *In:* J. Arditti (Ed.), *Orchid Biology – Reviews And Perspectives*, Vol. Cornel University Press, Ithaca, Usa.
7. Dahlgren, R.M.T., Clifford, H. & Yeo, P.F. (Eds.) 1985. *The Families Of Monocotyledons: Structure, Evolution And Taxonomy*. Springer, Heidelberg, Germany.
8. Dressler, R.L. 1993. *Phylogeny And Classification Of The Orchid Family*. Cambridge University Press, Cambridge.
9. Black, P.M. 1973. *Orquideas*. Ed. Ao LivroTecnico S/A, Rio De Janeiro
10. Pabst, G.F.J. & Dung, F. 1975. Orchidaceae Brasiliensis 1. Hildesheim, Brucke-Verlag, Kurt Schmerson.
11. Atwood, J.T.Jr. 1986. The Size Of The Orchidaceae And The Systematic Distribution Of Epiphytic Orchids. Selbyana 9: 177- 186.
12. Hooker, J.D. 1890. *Hooker's Icones Plantarum*, Vols. I &Ii. Williams & New Gate, London, U.K.
13. Hooker, J.D. 1895. A Century Of Indian Orchids. *Ann. Roy. Bot. Gard.* 5: 1-68.
14. Lal, V.K., Kosa, R. L. & Wahi, A.K. 1980. A Astavarga. I. Pharmacognostical Studies On *HebanariaEdgeworthii* Hook. F. (Riddhi-Vriddhi*). Plant Biochemistry* 3(1)*:* 18-23.
15. Arditti, J. 1992. *Fundamentals Of Orchid Biology*. John Wiley, New York, Usa.
16. Holttum, R.E. 1977. A Personal View Of Orchids. *In:* J. Arditti (Ed.), *Orchid Biology – Reviews And Perspectives*, Vol. Cornel University Press, Ithaca, Usa.
17. Hossain, M.M. 2011. Therapeutic Orchids: Traditional Uses And Recent Advances – An Overview. *Fitoterapia*82: 102-140.
18. Subedi, A., Vermeulen, J.J., Chaudhary, R.P., Jin, X.H. &Gravendeel, B. 2011. A Taxonomic Revision Of*Coelogyne*Sec. Ocellatae (Orchidaceae), 2nd Chapter (In Review With Ann. Mo. Bot.

Hard). *In:New Species, Pollination Interactions And Pharmaceutical Potential Of Himalayan Orchids*, Ph.D. Thesis (1976), Published By National Herbarium Of Netherlands, Leiden University, Netherlands. Pp.13-58.

19. Ghorbani, A., Gravendeel, B., Naghibi, F. & Boer, H.D. 2014. Wild Orchid Tuber Collection In Iran: A Wake-Up Call For Conservation. *Biodivers. Conserv*. 23: 2749-2760.