

EX SITU PERFORMANCE OF WILD ORCHIDS FOUND IN CHIKMAGALORE DISTRICT, KARNATAKA

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Abstract

In the present work, the *ex situ* performance of 30 selected orchids *i.e.*, 22 epiphytic and 8 terrestrial in Chikmagalore district was recorded. Their growth was observed for three years and subsequently, their performance was categorized with four criteria *i.e.*, poor, moderate, good, and excellent. Eleven species showed good performance on trees and nine in pots and bamboo culms. Six species had poor growth on trees and other seven had the same in pots and bamboo culms. Five orchid species on trees and other seven species in pots and bamboo culms exhibited excellent growth. *Cymbidium bicolor*, however, showed excellent performance under all conditions. Amongst terrestrial orchids, *Habenaria crinifera*, *H. heyneana*, *Malaxis versicolor* and *Nervilia discolor* exhibited excellent growth performance, *Geodorum densiflorum*, *Habenaria longicorniculata*, and *Nervilia infundibulifolia* showed good performance but *Disperis zeylanica* showed very poor *ex situ* growth.

Introduction

THE ORCHIDS have interesting biology and deceitful mechanism for pollination (mimicry); slow growth pattern, and high ornamental/medicinal value. They require all attention for conservation in their wild niches and also for replication in an Orchidarium. *Ex situ* method of conservation in an orchidarium followed by mass multiplication through tissue culture techniques are thus very important. With this technique, orchid saplings may be made available to the public, hence thereby reducing the pressure on their wild populations. The epiphytic orchids showed excellent performance in pots and also when tied to trees having rough textured bark (Geetha, 2000). The shade of the trees, intermittent sun light and cool and sub-humid conditions when provided resulted in excellent performance. Proper management and regular supervision of orchid plants can minimize the extent of damage (Hegde, 1997; Rao and Srivastava, 1996).

Material and Methods

Chikmagalore district, one of the 30 districts in Karnataka state of peninsular India comprises both arid and Western Ghats region, situated between $12^{\circ} 55'$ to $13^{\circ} 54'$ latitude and $75^{\circ} 5'$ to $76^{\circ} 22'$ longitude. The district harbors significant extent of forest cover and a number of Shola grasslands with rich orchid flora. In the present work, the *ex situ* performance of 22 epiphytic orchids found in Chikmagalore district is recorded by tying them on rough textured trees namely, *Achras sapota* and

Mangifera indica with additional moss and coconut coir. These trees are evergreen and give moderate shade and intermittent sun light that is necessary for the growth of orchids. Periodical watering was maintained to keep atmosphere cool and sub-humid. In another experiment, these epiphytic orchids and other eight terrestrial orchids were planted in mud pots and bamboo culms filled with brick pieces, charcoal, humus, and moss; the pots were provided with additional holes for proper aeration. These pots and bamboo culms were placed under shade nets. Their growth was observed for three years and subsequently their performance was categorized with four criteria *i.e.*, poor, moderate, good and excellent (Abraham and Vatsala, 1981; Geetha, 2000; Rao, 1998; Rao and Srivastava, 1996).

Results and Discussion

Amongst the 30 species studied, 11 species showed good performance on trees whereas nine on pots and

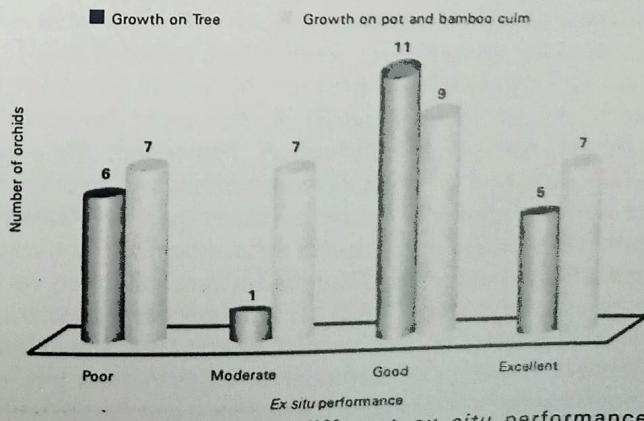


Fig.1. Orchids showing different *ex situ* performance categories

Table 1. *Ex situ* performance of selected orchids.

Orchid species	Habit	Growth on trees	Growth on pots and bamboo culms
<i>Acampe praemorsa</i> (Roxb.) Blatt. & McC.	E	Good	Good
<i>Aerides crispa</i> Lindl.	E	Good	Good
<i>Bulbophyllum neilgherrense</i> Wight	E	Poor	Moderate
<i>Coelogyne breviscapa</i> Lindl.	E	Good	Moderate
<i>Cottonia penduncularis</i> (Lindl.) Rchb.f.	E	Excellent	Good
<i>Cymbidium bicolor</i> Lindl.	E	Excellent	Excellent
<i>Dendrobium crepidatum</i> Lindl. & Paxton	E	Good	Poor
<i>D. macrostachyum</i> Lindl.	E	Good	Moderate
<i>D. ovatum</i> (L.) Kraz.	E	Good	Moderate
<i>Disperis zeylanica</i> Trimen	T	--	Poor
<i>Eria mysorensis</i> Lindl.	E	Excellent	Good
<i>Flickingeria nodosa</i> (Dalz.) Seidenf.	E	Poor	Moderate
<i>Gastrochilus pulchellus</i> (Wight) Schltr.	E	Good	Poor
<i>Geodorum densiflorum</i> (Lamk.) Schltr.	T	--	Good
<i>Habenaria crinifera</i> Lindl.	E&T	Poor	Excellent
<i>H. heyneana</i> Lindl.	T	Poor	Excellent
<i>H. longicorniculata</i> Grah.	T	--	Good
<i>Liparis viridiflora</i> (Bl.) Lindl.	E	Poor	Excellent
<i>Luisia macrantha</i> Blatt. & McC.	E	Good	Poor
<i>Malaxis versicolor</i> (Lindl.) Abeywickr.	T	--	Excellent
<i>Nervilia discolor</i> (Bl.) Schltr.	T	--	Excellent
<i>N. infundibulifolia</i> Blatt. & McCann	T	--	Good
<i>Oberonia brunonianana</i> Wight	E	Poor	Poor
<i>Phalaenopsis decumbens</i> (Griff.) Holttum	E	Poor	Good
<i>Pholidota pallida</i> Lindl.	E	Excellent	Excellent
<i>Rhynchostylis retusa</i> (L.) Bl.	E	Excellent	Moderate
<i>Sarcanthus pauciflorus</i> Wight	E	Good	Moderate
<i>Sirhookera lanceolata</i> (Wight) Kuntze	E	Moderate	Poor
<i>Smithsonia maculata</i> (Dalz.) Saldanha	E	Good	Poor
<i>Trias stocksii</i> Benth. ex Hook.f.	E	Good	Good

bamboo culms. Six species had poor growth on trees and seven on pot and bamboo culms. Five orchid species on trees exhibited excellent growth and seven species showed the same in pots and bamboo culms (Table 1., Fig.1). *Cymbidium bicolor* showed excellent performance in all conditions. Amongst terrestrial orchids, *Habenaria crinifera*, *H. heyneana*, *Malaxis versicolor* and *Nervilia discolor* exhibited excellent growth performance, *Geodorum densiflorum*, *Habenaria longicorniculata* and *Nervilia infundibulifolia* showed good performance, but *Disperis zeylanica* showed very poor *ex situ* growth (Table 1). *Cottonia penduncularis*, *Cymbidium bicolor*, *Eria mysorensis* and *Pholidota pallida* showed excellent performance on trees in other places but *Coelogyne breviscapa*, *Dendrobium macrostachyum* and *Sarcanthus pauciflorus* exhibited good *ex situ* performance on trees. The excellent performance of

orchids on the trees has also been reported earlier by Geetha (2000). Presently, *Gastrochilus pulchellus*, however, showed poor growth in pots, in contrast to earlier observations.

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