

Gardens by the Bay Orchid Programme

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INTRODUCTION

Gardens by the Bay (GB) – a garden of 101 hectares in the new downtown area of Singapore, is a national garden and a premier horticulture attraction for local and international visitors. The Gardens comprise Bay South, Bay East and Bay Central Gardens. The Bay South Garden, largest of the three gardens is 54 hectares and opened its doors to the public in 2012. Bay South Garden consists of a series of thematic outdoor gardens, the Supertrees and cooled conservatories. The outdoor thematic gardens consist of 2 series of gardens; The Heritage Gardens and World of Plants are collections of landscape gardens to highlight the history and culture of Singapore's ethnic groups and colonial past. The World of Plants, on the other hand, depicts the system of how plants adapted to adverse environments. The Supertrees are giant tree-like structures measuring 25 to 50 meters in height and planted with vertical greenery. Conservatories are climate-controlled glasshouses where sub-tropical and temperature plants are grown and featured in landscape display.

As a horticultural attraction in the tropics, GB showcases an array of tropical plants. However, with the cooled conservatories, GB can also grow and showcase plants from the sub-tropical regions that required a lower temperature for growth. With this unique feature of having diverse growing environments under one roof, the GB orchid team is able to embark on something that other gardens might not have the opportunity to do. This is the capability to grow and flower tropical and sub-tropical orchids together. Thus, in 2015, GB Orchid Programme was officially launched.

There are four components in GB Orchid Programme. They are the orchid thematic displays, participation in orchid shows and competitions, orchid trials and orchid breeding. The orchid thematic display is a bi-annual landscape display designed and installed by the orchid team in the Cloud Forest Conservatory. This landscape display is curated to feature a specific theme or

orchid genera for a period of six months. A total of five displays, featuring orchids such as *Cattleya*, *Dendrobium* and scented orchids, had been completed (Tay, 2019).

Besides curating the orchid display in Cloud Forest Conservatory, the orchid team also participated in the landscape category of 2017 World Orchid Conference held in Ecuador. The orchid landscape display won a gold medal for the Best In-show Category (Channel News Asia, 2017).



Figure 1. Dendrobium display in Cloud Forest Conservatory, Gardens by the Bay.



Figure 2. Gardens by the Bay display at the 22nd World Orchid Conference at Ecuador 2017.

The second component in GB Orchid Programme - participation in orchid shows and winning awards in competitions, is another important goal that the orchid team strives hard to achieve. Participation in orchid shows and competitions encourage the orchid team staff to learn and hone their horticultural skills at growing orchids. These shows, and competitions, provide a platform for the staff to interact with local and international orchid nurseries and specialists, as well as to engage in and develop mutual co-operation with them. These learning opportunities are essential elements in ensuring good quality orchids are grown and used in landscape displays.

Conducting of orchid trials, which is the third component in the orchid programme, focuses on two areas in the flowering morphology of selected orchids. The two areas of focus are: initiation of flower buds in orchids and extension of flower longevity. Trials were carried out on selected orchid genera that possess good floral values that can be used in landscape displays or entries into show competitions. Manipulation of temperature was used to initiate flower buds in the trials of selected orchid species and hybrids. The aim of the trials was to acquire the ability to control flowering in selected orchids so that these orchids can be used at desired times for display or entry into show competitions. Extension of flower longevity was aimed at extending the shelf life of orchids so that the

orchids can have a longer display duration before the need to be replaced arises. With a longer display duration, the frequency for orchid replacements can be reduced and cost savings can be achieved.

Equipped with the unique characteristic of having both tropical and sub-tropical growing environments under one roof, GB can grow orchids from two very diverse

Conclusion

The GB Orchid Programme is in its fifth year, much of the work such as orchid trials and breeding are still on-going. Future work would include incorporating more literature review on the developments in orchid breeding, trials to improve our cultivation techniques of the orchids and producing better quality of orchids for display and competition, as well as following up on what is current in the displays of orchids. Much learning and discovery await us.

groups – the lowland and highland orchids together. The capability to grow these orchids together presents a golden opportunity to create orchid hybrids that can thrive in the two different climatic zones through hybridisation (Hong, 2017). Thus, orchid breeding is the final component that completes the GB orchid programme.

Literature Cited

Channel News Asia, (2017). Gardens by the Bay clinches gold at World Orchid Conference. Singapore: Mediacorp Pte Ltd.

Hong, J. (2017). New orchid blooms in hot or cool climates. Singapore: SPH Digital News.

Tay, S. C. (2019). Scent of an orchid. Singapore: SPH Digital News.