

PROCEEDING

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International Conference on Life Sciences and Biotechnology



EXPLORATION AND CONSERVATION OF BIODIVERSITY

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**International Conference on Life Sciences and Biotechnology
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Exploration and Conservation of Biodiversity

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DEVELOPMENT of COMMERCIAL NURSERIES on SELLING PLANTS and FLOWERS in DENPASAR, BALI

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Abstract

Bali is one of tourism destination. Tourism activities always related with garden and landscape around hotels or villas. For a decade, customers have changed their mind for plants that will be planted in their place. The study was conducted to investigate what kind of plants that had been used for gardening. Field study was adapted to collect information. Some nurseries were visited and data was analyzed based on plant price, propagation and customer preference. So far, hotels prefer kind of tree such as palm, Norfolk, grasses, frangipani, bougainvillea, and some bedding plants. For household, customers prefer orchids, rose, euphorbia, frangipani and bedding plants because easier to maintain. The price is increased due to transportation from Java to Bali. Since five years ago, nurseries had more variety for some varieties from Heliconia. At present, orchids still become favourite plants and some bedding plants that has attractive colour.

Keywords: landscape, nursery, plants

Introduction

Nursery is a term that related to plants and seedlings. In addition, nursery also applies for activity on selling plant for gardening. In horticulture, nursery meant a place where plants, young tree and seedlings are grown commercially. In Bali, nursery has an important role to support the view in hotels or villa's landscape.

Ten years ago, nurseries activity only for selling plants and propagate it vegetatively to increase number of seedlings. At this time, using this technique, nursery cannot increase income because budget to rent the land is more expensive. In Florida, nursery industry generated \$3 billion in farm gate in 2005 [2]. Therefore, other kinds of work should be done in order to mix between selling plants and offer a work to design in a landscape site as a horizontal garden. Nursery usually offer different kind of plants, such as shrubs, border plants, ground cover, bedding plants, tree, ornamentals and flowering plants as soft material in landscaping. Pots in different size, garden lighting, stones, compost and others as hard material for landscape design.

Vertical gardens (green walls or living walls) can be alternative for landscaper that work in areas with limited space horizontally or want to cover unattractive site as wall in the front building or between two houses. Almost 80% of vertical gardens were constructed by institutions and in public spaces to improve aesthetics [5], such as airport in Changi Singapore, Edmonton Canada or in Mumbai [1]. Green walls is different with green

facades. Green walls have growing media supported on the face of the wall. Green facades

have pots or containers with media at the base of the wall and support climbing plants.

Horticulture plants were classified into (a) woody plants: tree, shrubs, ground cover; (b) herbaceous plants: flowering and vine; (c) grass or turf [4].

The study was conducted to (1) investigate what kind of plants that had been used for gardening; (2) encourage nurseries to provide various plants and seedlings; (3) give opportunities to consumers for maintaining home garden

Methods

Field study likely survey to nurseries around Denpasar, such as sampling model around Sanur areas such as nurseries on Sedap Malam, HangTuah and Hayam Wuruk street as dominant place for nurseries. Data were collected based on interview about kind of plant, price and how to propagate it that usually offered by nursery.

Results and Discussion

Based on field study, kind of plants that offered by the nurseries are almost similar, that is trees (Table 1) and shrubs (Table 2), even though the price is slightly different. All shrubs including ground covers plants are range from Rp. 2.500 to 3.000 per polybag. The tree's price is depend on type, between Rp.5.000 for Codeaum and roses. The price for bigger tree reach until almost about Rp. 800.000 for hybrid bamboos, red palm and

other exotic plants. Plant price is depend on customer's demand and trend for specific plants. During 2007, *Anthurium* 'wave of love' and adenium became popular and the price increase sharply until hundred thousand rupiahs. However 3 years later, the price dropped. One year ago, *Plumeria* sp become favourite and hybrid frangipani can be sold until almost one million for big and flowering tree

Only 2 nurseries sell orchids in pot. They are Duta Orchids and Flora Bali. The price for orchids is relative stable for *Dendrobium* (Rp. 15.000-25.000), *Cattleya* (Rp. 25.000-40.000), *Phalaenopsis* (Rp. 70.000-125.000), *Vanda* (Rp. 75.000-150.000). Sometimes, orchid seedlings also available in sterile bottle cultured (Rp. 40.000-45.000) and compots (Rp. 5.000 – Rp. 15.000). Besides selling orchids, they offer rental blooming orchids in pot for office or banks for about 1-2 months until the flowers wilted. Maintenance like watering plants was done by the nursery every 3-4 days.

Almost 50% of the nurseries offer landscaping for hotels, villa and housing. Budget for landscape is depended on wide of the area. Planting grasses is around Rp. 150.000 per m². Maintenance should be done by the nurseries until the plants grow well as their guarantee. In addition, transport big tree required special technique to protect plant material from physiological disorders such as water loss and heat stress especially in long journey [7]. Some methods can be applied, such as tree root balls were pressure washed or harvesting tree and then spraying a combination of water and fine granular material designed to hold water at the root zone.

Vertical garden is more famous during 5 years ago. It can be applied for high building or area with limited space. Type of plants that had been used are almost ground cover plants or hanging drop plants. Vertical garden can reduce heat [3] and pollution. Plants are planted in small pot then hanging in a frame that already built over the wall of the building. Vertical gardens can be indoors or outside, freestanding or attached to an existing wall. Green wall may be constructed of modular panels which hold a growing medium with loose media, mat media or structural media.

There are strategies practiced by nursery operators in Florida, included diversifying services and marketing [6]

Table 1. Plant type (shrubs), price and propagation in commercial nurseries around Denpasar.

No	Plant's name	Price in thousand (Rp.)	Propagation
1	Agave	40-45	Shoots division
2	<i>Aglaonema</i> sp.	50-75	Sshoots

			division
3	<i>A.andreanum</i>	40-50	Shoots division, seed
4	<i>Dracaena</i> sp	20-50	Stem cutting
5	<i>Aloe vera</i>	5-10	Shoot division
6	<i>Sansevieria</i> sp.	5	Shoot division
7	<i>Jasminum</i> sp.	10-15	cutting
8	Bedding plants	2.500-3.000	cutting
9	<i>Adiantum</i> sp	10-15	Shoot division
10	<i>Portulaca</i>	2-3	Shoot division
11	<i>Evodia suaveolens</i>	45-50	Seeds
12			

Table 2. Plant type (trees), price and propagation in commercial nurseries around Denpasar.

N	Plant's name	Price in thousand (Rp.)	Propagati on
1	<i>Bougainvillea</i> sp.	50-100	cutting
2	Palms	50-500	seeds
3	Frangipani	40-800	cutting, seed
4	<i>Araucaria</i> sp.	100-200	Cutting
5	Bonsai <i>Ficus</i> sp	500-1000	cutting
6	<i>Euphorbia</i>	50-100	cutting
7	Fruit trees	100-250	cutting
8	<i>Hibiscus</i> sp.	20-30	cutting
9	<i>Phaleria macrocarpa</i>	10-25	seed
10	<i>Wodyetia bifurcata</i>	100-250	Shoot division
11	Arecaceae	100-200	Shoot division
12	<i>Codeaum</i> sp.	5-7.5	cutting

Conclusion

Nurseries already offered lots of plant's types and varieties to consumers. Besides selling soft and hard material for landscape materials, rental potted exotic plants and blooming orchids also become routine job. Diversifying plants and kind of work can increase income to cover all production process.

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