

Market Outlook Report



March 31, 2004

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EXECUTIVE SUMMARY

Hawaii's potted orchid industry has grown tremendously over the past 20 years, with industry sales growing from \$2.2 million in 1980 to \$7.7 million in 1990, reaching \$18.2 million in 2002. Hawaii's largest producers are expanding or planning to expand in the next two to four years.

The majority of orchids produced in the state are categorized as "other potted orchids," followed by dendrobiums and phalaenopsis. "Other" orchid varieties, which include the large segment intergeneric Oncidiinae, have shown the strongest growth over the past six years.

Between 1996 and 2002, U.S. potted orchid production quantity increased 48%, now totaled 12.7 million plants, and the value increased 125% to \$105.6 million. In the continental U.S., orchids are mainly grown in Southern and Western states. California, Florida and Hawaii comprise 91% of the country's potted orchid production. Other states are starting to increase orchid production, including Ohio, Michigan and Texas.

In-state sales of potted orchids have been constant for many years, generally averaging between \$3 million and \$4 million annually. Orchid sales per U.S. household increased from \$0.48 in 1996 to \$0.98 in 2002 and \$0.99 for 2003. Demand is increasing in Southern and Western states, which now comprises more than 90% of sales at the wholesale level. The nominal prices for potted orchids increased between 1996 and 2002. After adjusted to inflation, real prices for potted orchids increased from 1996 to 2000, but have fallen since 2000. In the long term, prices are expected to decline as a result of increased low-priced supply from foreign suppliers.

Cheaper foreign competitors make it difficult for Hawaii growers to compete on a mass level. Competition to Hawaii's potted orchid industry is both direct—from producers on the U.S. mainland—and indirect—from those located overseas such as the Netherlands and countries in Southeast Asia. Over the past 5 years, Southeast Asian competitors have aggressively targeted the U.S. market. Taiwan, which specializes in Phalaenopsis, is the largest exporter of orchids in the world and is the major exporter of orchids to Japan, China and the U.S. Thailand, noted for Dendrobium, is the second largest foreign supplier to the U.S. Together these two countries account for roughly two-thirds of U.S. potted orchid imports.

Hawaii has ideal natural conditions for growing orchids from highly diverse genera. The industry benefits from competitive shipping rates and excellent service from UPS and FedEx, outstanding local suppliers and breeders, and dedicated researchers and extension agents from the University of Hawaii and USDA. However, Hawaii's producers face many challenges. The start-up cost per acre for efficient greenhouses, land and propagation material is approximately \$700,000 per acre. Agricultural land leasing terms discourage investment in state-of-the-art facilities and encourage growers to construct greenhouses as cheaply as possible. Quarantine 37 is hampering Hawaii's producers' competitiveness. Despite strong demand for their products, the industry needs some degree of marketing support. Because Hawaii's orchid farms are generally small, distant from the market and their customers, it is costly for them (in terms of staffing and expenses) to develop and maintain customers on the mainland. Programs that support growers' own sales efforts are encouraged, such as grant subsidies for individual companies' trade show participation or group displays that represent individual growers.

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I. Introduction

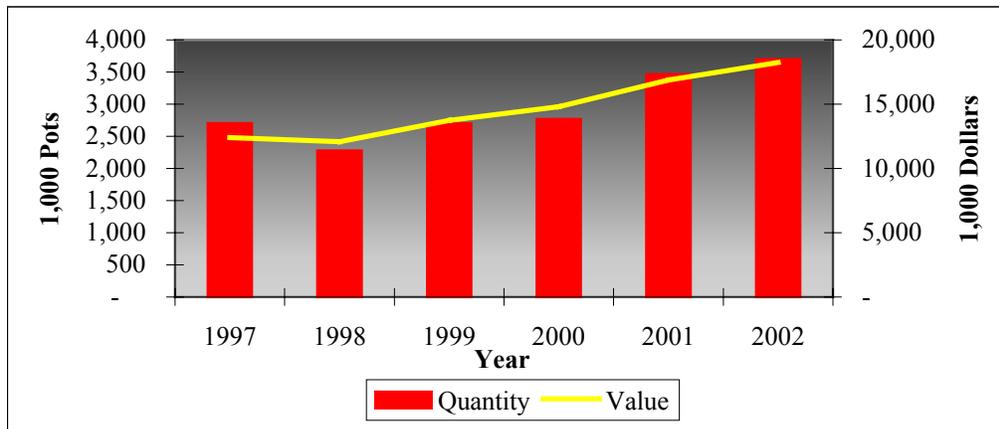
The potted orchid industry is the rising star among Hawaii’s ornamental horticulture industries. It is both the largest segment of the state’s floriculture and nursery industry and the fastest growing. Continued success will depend on how the industry faces issues such as production capacity, positioning against less expensive competitive products, and the possible entry of foreign competition.

This report was developed as a summary of Hawaii’s potted orchid industry. The objective of this report is to provide small farmers and others in the agricultural community an overview of the past, present, and future of the industry.

II. Local Production & Market

Hawaii’s potted orchid industry has grown tremendously over the past 20 years. Industry sales more than tripled in the 1980’s, growing from \$2.2 million in 1980 to \$7.7 million in 1990. By 2000 that figure reached \$14.7 million and in 2002 industry sales were \$18.2 million (Figure 1). Over the past five years, growth has averaged over 8 percent annually and continued strong market demand is expected in the future. Many of Hawaii’s largest producers are expanding or planning to expand in the next two to four years.

Figure 1: Hawaii Potted Orchid Production Quantity and Value, 1997-2002

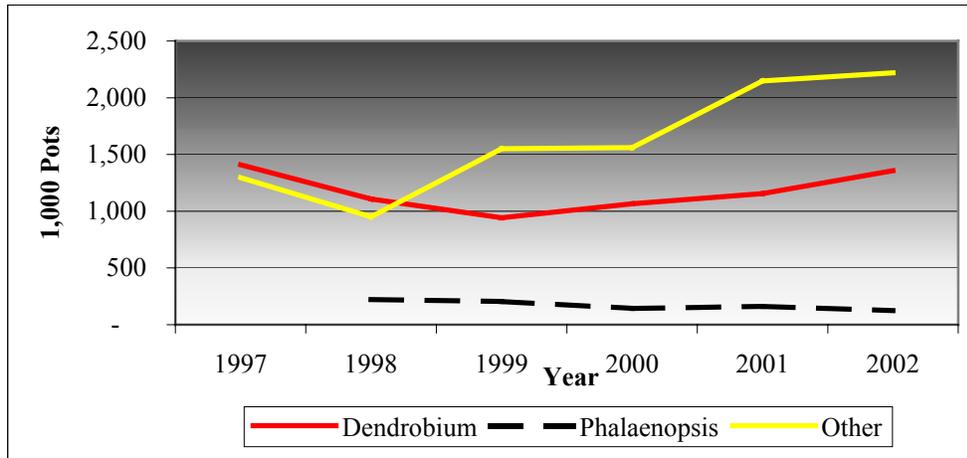


Source: HASS, Hawaii Department of Agriculture

The majority of orchids produced in the state are categorized as “other potted orchids”, followed by dendrobiums and phalaenopsis (Figure 2). “Other” orchid varieties, which include the large segment intergeneric Oncidiinae, have shown the strongest growth over the past six years. Phalaenopsis production, while relatively small, has been stable over the past five years and growth in dendrobiums has been gradually increasing since 1999. Prices have remained relatively stable despite production gains (Figure 3).

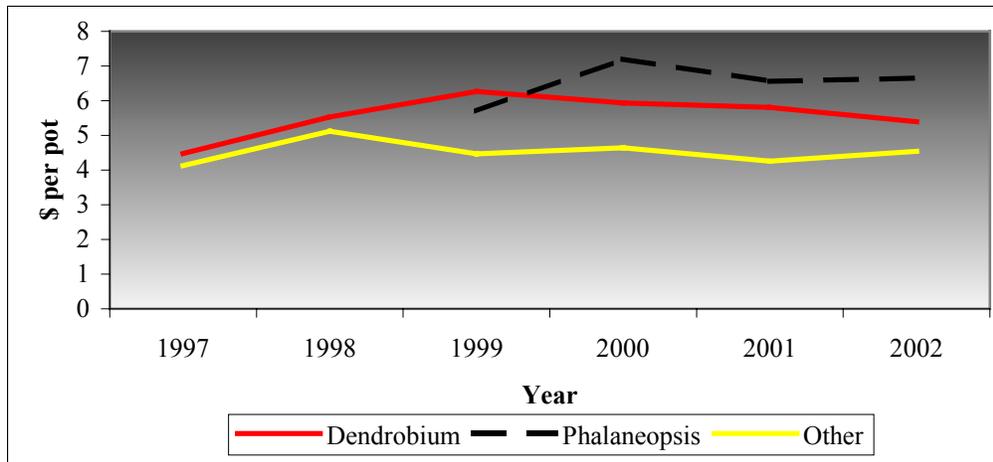
Note: Prices and sales values reported in this study are nominal figures, and not adjusted for inflation unless otherwise indicated.

Figure 2: Hawaii Potted Orchid Production Quantity by Product, 1997-2002



Source: HASS, Hawaii Department of Agriculture

Figure 3: Hawaii Wholesale Price for Potted Orchids, 1997-2002

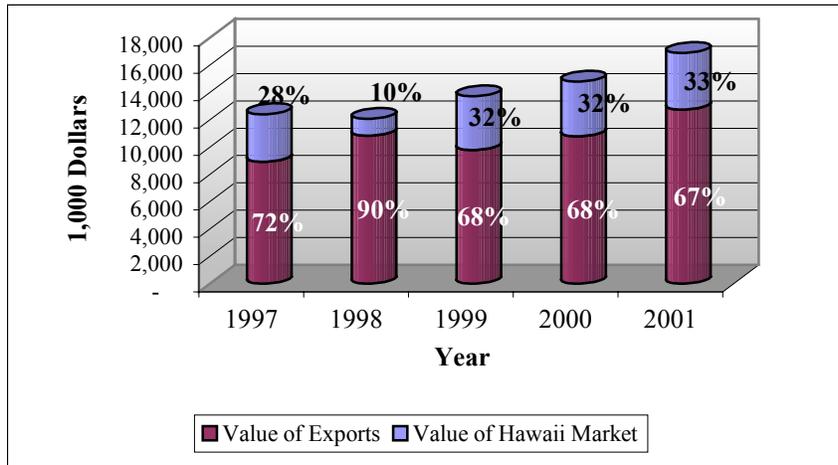


Source: Floriculture and Nursery Crops Situation and Outlook Yearbook, ERS/USDA

In-state sales of potted orchids have been constant for many years, generally averaging between \$3 million and \$4 million annually. The market is served solely by the Hawaii industry. Finished plants for retail sale are not imported, due to the excellent availability of Hawaii-grown orchids. There are limited opportunities to expand the in-state market, since the population is not expanding and orchids are already widely used by Hawaii consumers, in hotels and commercial floral displays.

The export market, on the other hand, holds greater opportunities for Hawaii producers. The growth of Hawaii's orchid industry has been achieved through export sales. More than two-thirds of the potted orchids cultivated in the state are exported (Figure 4). Thus, the continued development of the industry depends on the mainland market.

Figure 4: Exports and Size of Local Market for Potted Orchids in Hawaii, 1997-2001



Source: HASS, Hawaii Department of Agriculture

III. Potential Demand and Price Trends of Export Markets

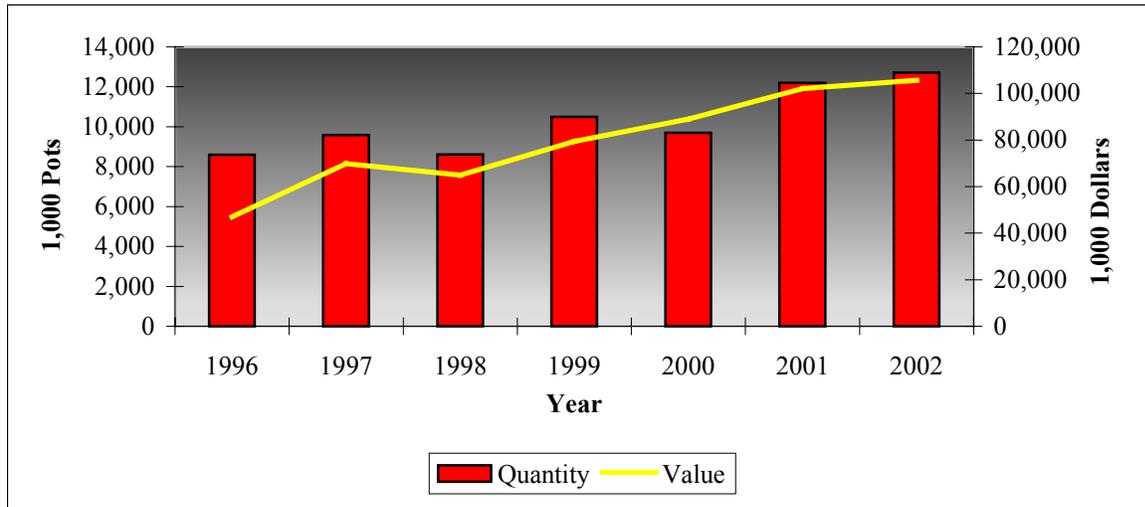
Hawaii growers in the potted orchid industry have been successfully exporting for many years. They are selling everything they grow and increasing production to satisfy thriving demand. Increased consumer awareness, advances in propagation techniques, and new hybrids are a few explanations for the observed rise in orchid production and consumption.

Most Hawaii nurseries produce potted orchids specifically for export sales and the orchids are shipped to every state on the U.S. mainland. Potted orchids have growth potential in other areas around the globe. However, cheaper foreign competitors—often closer in proximity to these markets—make it difficult for Hawaii growers to compete on a mass level. Therefore, the U.S. mainland will be the only major market discussed in this assessment.

Potted orchids are currently one of the most fashionable plants in the floriculture market. In the 1980's potted orchids were perceived as highly exotic, but over the past 15 years, their stylish, elegant image has boosted popularity among growers and consumers.

Between 1996 and 2002, U.S. potted orchid production quantity increased 48%, and now totals 12.7 million plants. During this period the value of U.S. orchid production increased 125% to \$105.6 million (Figure 5). Today, potted orchids are ranked second among potted flowering plants; poinsettias are ranked number one. While poinsettias remain the “biggest-selling” plant, orchids are the “fastest-growing” of the potted flowering plants (Floriculture & Nursery Crop Outlook, Sept. 2003).

Figure 5: U.S. Potted Orchid Production Quantity and Value, 1996-2002



Source: Floriculture Crops, NASS, USDA.

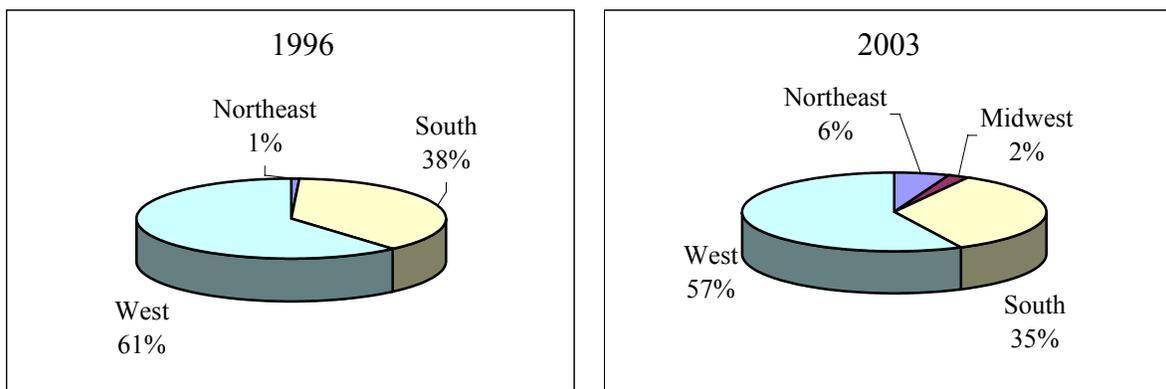
Demand is increasing in Southern and Western states, which now comprise more than 90% of sales at the wholesale level (Table 1). Potted orchid sales in the Northeast states have also increased significantly, but not to the same degree as the South or West. The Midwest has experienced erratic sales levels. Figure 6, however, reveals, that the Northeast and Midwest are gaining market share from the South and West.

Table 1: Wholesale Value of Potted Orchid Sales by U.S. Region, 1996-2003 (1,000 Dollars)

Region	1996	1997	1998	1999	2000	2001	2002	2003
Northeast	297	254	2,733	1,718	1,513	3,638	5,860	5,977
Midwest		8,323	2,317	2,609	3,191	5,151	2,187	2,231
South	15,774	20,234	19,177	31,033	26,962	29,572	34,879	35,577
West	25,571	32,334	34,848	37,092	48,991	58,480	57,247	58,392

Source: Floriculture and Nursery Crops Outlook, Economics Research Service, USDA

Figure 6: Wholesale Value of U.S. Potted Orchid Sales by Region, 1996 and 2003



Source: Floriculture and Nursery Crops Outlook, Economic Research Service, USDA

Many factors have combined to create strong sustained consumer demand for orchids. They have been positioned as a chic plant and received tremendous exposure through media outlets, including television, lifestyle magazines and image retailers. Orchids have always been intriguing to consumers for their “exotic” beauty, but only recently overcame their stereotype of being delicate and difficult to grow. Consumers see potted orchids as a great value, due to their longevity and ability to withstand harsh treatment, compared to other floriculture products. Other factors affecting demand include:

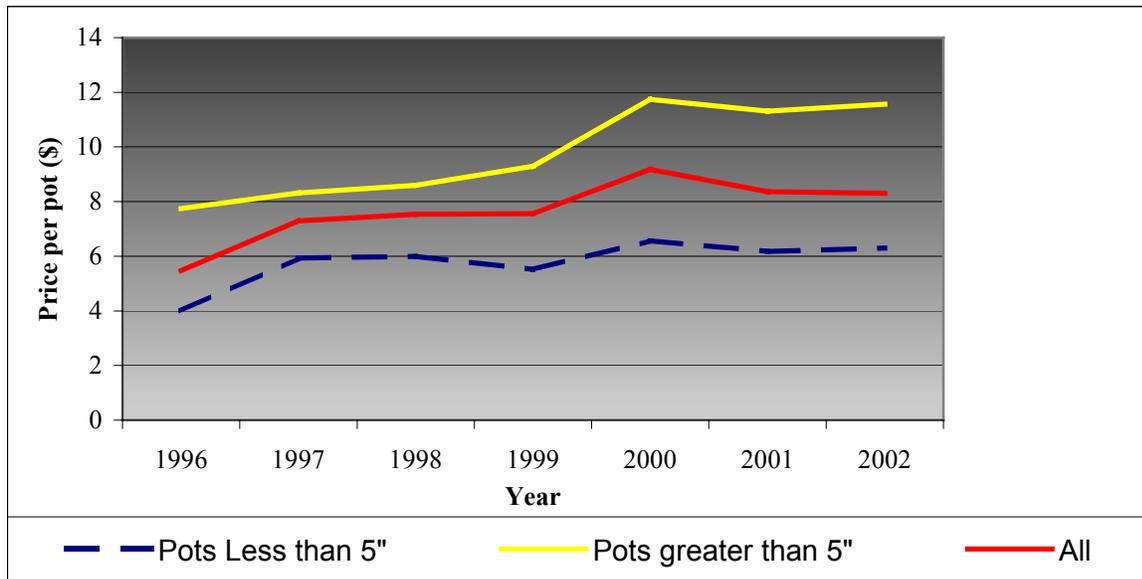
1. **Quality:** Advances in breeding have led to improved overall plant performance and increased consumer acceptance. Hybridizing has introduced plants with more compact growth and flowering, greater flower longevity and temperature tolerance. Characteristics used to judge quality include flower spike habit, flower size, color and shape, plant vigor and disease resistance.
2. **Distribution:** As little as ten years ago, orchids were sold through specialty nurseries or garden centers. Today, they are widely available year-round, everywhere from supermarkets to home improvement stores. Widespread accessibility through mass market retailers has fueled demand. Demand is greatest on the east and west coasts—whereas the markets in the Midwest and Plains states are less developed.
3. **Supply chain segmentation:** Traditional orchid businesses bred, propagated, grew and marketed their plants. Today, there are specialized breeders, propagators, finishers and distributors. The development of hybrids suited to mass production, increased supply of high quality young plants from specialized tissue culture propagators, the opening of large, efficient production facilities and distribution through mass market retailers has all improved quality, lowered cost and expanded the market for potted orchids.
4. **Price:** Orchids have become widely available at affordable prices. As little as ten years ago, orchids were sold through specialty stores for \$40, \$50 and more. Today, they are widely available through mass market retailers for \$15 or even less.
5. **New and unique products:** As consumers become more familiar with orchids, they are increasingly demanding new and unusual species. For example, buyers who regularly see *Phalaenopsis* or *Dendrobium* orchids in stores become more interested in less readily available genera such as *Oncidiinae*, *Cattleya* or others. Breeding programs have led to the introduction of a wide assortment of unique hybrids with different shades of color, flower shapes and color combinations.
6. **Demographics:** Consumption of flowers is directly related to age, income and gender. The highest per capita consumption occurs in females between the ages of 55 to 74. For this group, the higher the level of education attained, the greater the consumption. Accordingly, these higher-educated individuals tend to have higher incomes and therefore, greater disposable incomes. Region also plays a factor in consumer demand, with the highest per capita consumption of floriculture and nursery products concentrated in the Western and Southern parts of the United States.

7. Gift giving: Gift giving also plays a role in the floral consumption decision. Flowers and potted plants are becoming increasingly popular as gift items with special occasions and holidays being reasons for these purchases.

Price Trends

The nominal prices for potted orchids increased between 1996 and 2002 (Figure 7). Taking inflation into account, real prices for potted orchids increased from 1996 to 2000, but have fallen since 2000. In the long term, prices are expected to decline as a result of increased low-priced supply from foreign suppliers. Orchid sales per U.S. household increased from \$0.48 in 1996 to \$0.98 in 2002 and \$0.99 for 2003. Table 2 provides figures for U.S. household sales and the domestic price index for potted orchids.

Figure 7: Average U.S. Potted Orchid Wholesale Price, 1996-2002



Source: Floriculture & Nursery Crops Outlook, Economic Research Service, USDA

Table 2: U.S. Potted Orchid Price Index and Sales per Household, 1996-2003

	1996	1997	1998	1999	2000	2001	2002	2003
Sales per U.S. household (in dollars)	0.48	0.70	0.64	0.77	0.84	0.95	0.98	0.99
Domestic price index (2000 = 100)	59.6	79.4	82.1	82.3	100.0	91.1	90.5	91.0

Source: Floriculture and Nursery Crops Outlook, Economic Research Service, USDA

Wholesale prices in the Western and Southern regions more closely reflect the average U.S. prices for potted orchids, compared to the higher priced Northeast and Midwest regions (Table 3). Yet, all states illustrate increasing prices at the wholesale level.

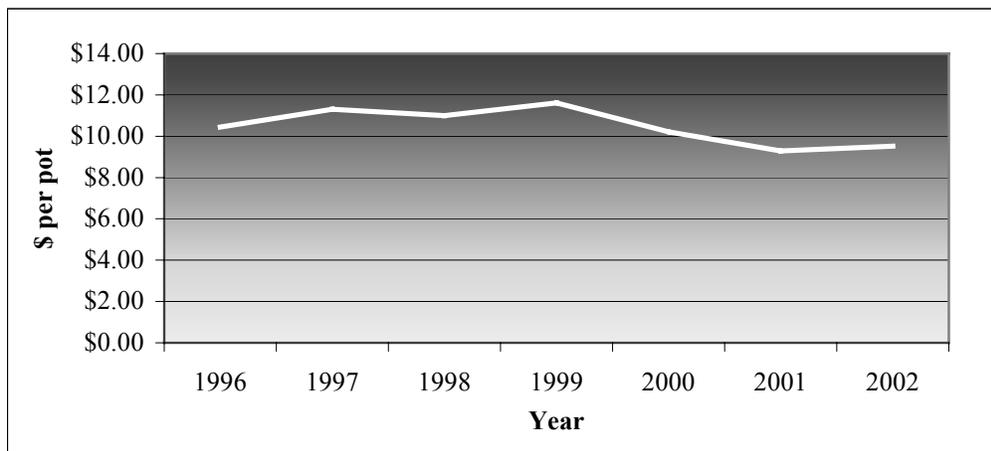
Table 3: U.S. Potted Orchid Wholesale Prices by Region, 1996-2003 (Dollars per pot)

	1996	1997	1998	1999	2000	2001	2002	2003
U.S	5.47	7.29	7.54	7.56	9.18	8.36	8.31	8.36
Region								
Northeast	16.50	16.93	4.80	11.01	10.81	19.88	25.70	25.86
Midwest	-	12.50	8.65	12.02	13.58	14.47	9.90	9.96
South	3.69	5.58	6.47	6.54	9.66	8.76	8.51	8.57
West	6.62	7.59	8.04	7.68	8.32	7.46	7.49	7.53

Source: Floriculture and Nursery Crops Outlook, Economic Research Service, USDA

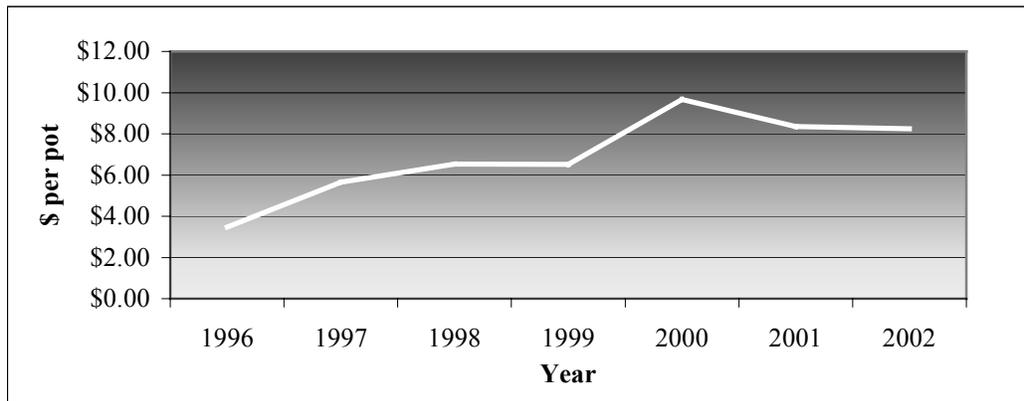
California's average prices have declined from their peak in 1999 (Figure 8). The decline can be attributed to the growing number of smaller-sized plants that are being sold, greater availability in the industry, and improving production efficiencies. Florida's average prices have followed an upward trend (Figure 9), due in part to an increasing percentage of larger orchid pots sold in that state.

Figure 8: Average Wholesale Price of Potted Orchids in California, 1996-2002



Source: Floriculture Crops, NASS, USDA.

Figure 9: Average Wholesale Price of Potted Orchids in Florida, 1996-2002



Source: Floriculture Crops, NASS, USDA.

IV. Competitive State

Potted orchid suppliers from overseas and the U.S. mainland are at the same time competitors, customers, and suppliers. Foreign imports help to fuel the growth of the U.S. potted orchid industry. Mature orchids, imported as bare rooted plants from countries such as Taiwan and Thailand, enable U.S. growers to greatly increase supply of competitively priced finished plants. Competitively priced imported propagation material is available in good quantity and quality and is the major source of supply for the industry. Orchid growers on the U.S. mainland compete against Hawaii's nurseries, but also are customers purchasing large quantities of plants from Hawaii to supplement their own production.

Competition to Hawaii's potted orchid industry is both direct—from producers on the U.S. mainland—and indirect—from those located overseas such as the Netherlands and countries in Southeast Asia. Overseas companies generally do not compete directly against the U.S. industry because USDA-APHIS-PPQ phytosanitary regulations currently dictate that orchids cannot be transported to the U.S. in soil. Imported bare root orchids must be repotted and held between four and six months until they are ready for sale. (There are instances where foreign suppliers have invested in U.S. greenhouses to hold plants after importation, thereby becoming direct competitors to the industry.)

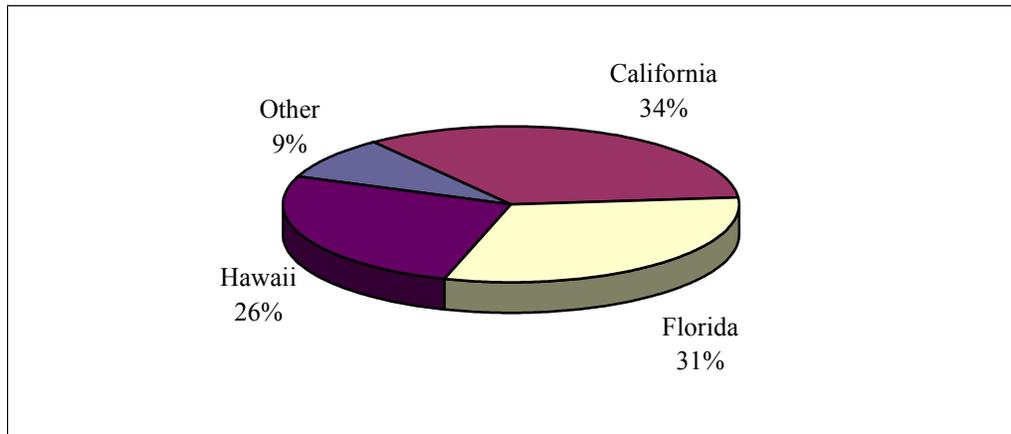
Despite its phenomenal growth domestically and increased competitive pressure from foreign sources, the potted orchid industry remains attractive to growers for several reasons. Economic changes have little impact on the floriculture industry. The potted orchid industry is in a growth stage and despite the economic downturn in recent years, the industry's performance has remained strong. The barriers to entry are high since competing in this industry requires a large capital investment. Improved availability of young plants, cultivars that offer shorter production times and fewer losses have increased growers' profitability. At present, phytosanitary regulations offer some protection for the U.S. industry from foreign competition. Due to the increasing popularity of potted orchids among consumers, prices have been relatively stable despite large production increases. The higher profit margins that can be realized in this sector are attracting a growing number of firms into the industry. However, at this point, competition between growers is moderate.

Competition from U.S. Mainland Suppliers

In the continental U.S., orchids are mainly grown in Southern and Western states with the largest production areas being in California, Florida and Hawaii. Other states that are starting to increase orchid production include Ohio, Michigan and Texas.

California, Florida and Hawaii comprise 91% of the country's potted orchid production (Figure 10). In 2002, California dominated the market with 4.3 million pots produced. Florida and Hawaii produced 3.9 million and 3.3 million, respectively.

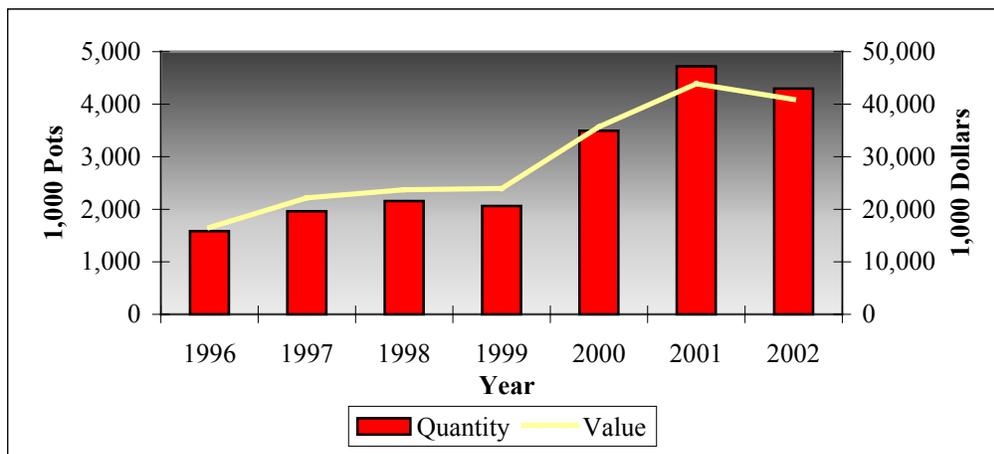
Figure 10: U.S. Potted Orchid Production by State, 2002



Source: Floriculture Crops, NASS, USDA.

California's potted orchid industry has seen significant growth over the past seven years (Figure 11). Production value increased by more than 145%, from \$16.5 million in 1996 to just under \$40 million in 2002. The quantity of orchids grown increased 171% during the same period.

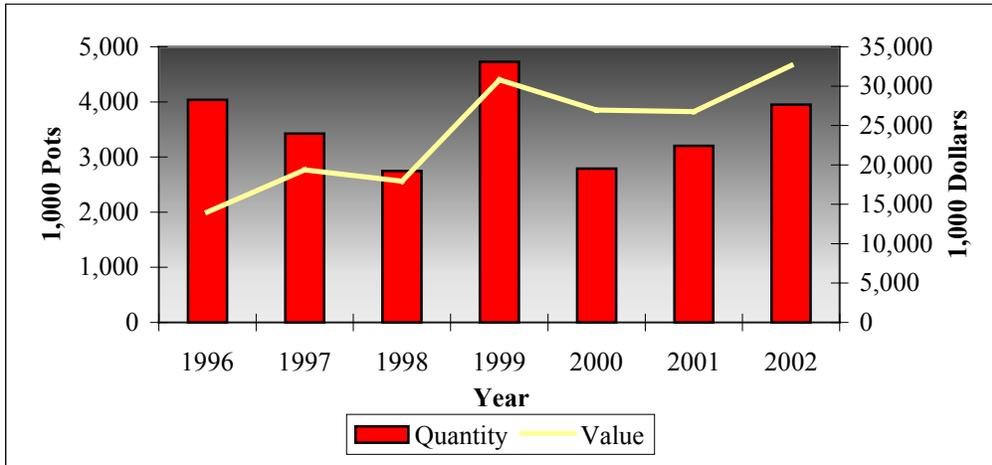
Figure 11: California Potted Orchid Production by Quantity and Value, 1996-2002



Source: Floriculture Crops, NASS, USDA.

Florida's potted orchid production has been much more variable than that of California and Hawaii. In the last seven years, production quantities have risen and fallen, while value has increased (Figure 12). Florida's potted orchid production quantity in 2002 was about two percent lower than in 1996 while production value rose 132% from 1996 to 2002.

Figure 12: Florida Potted Orchid Production by Quantity and Value, 1996-2000

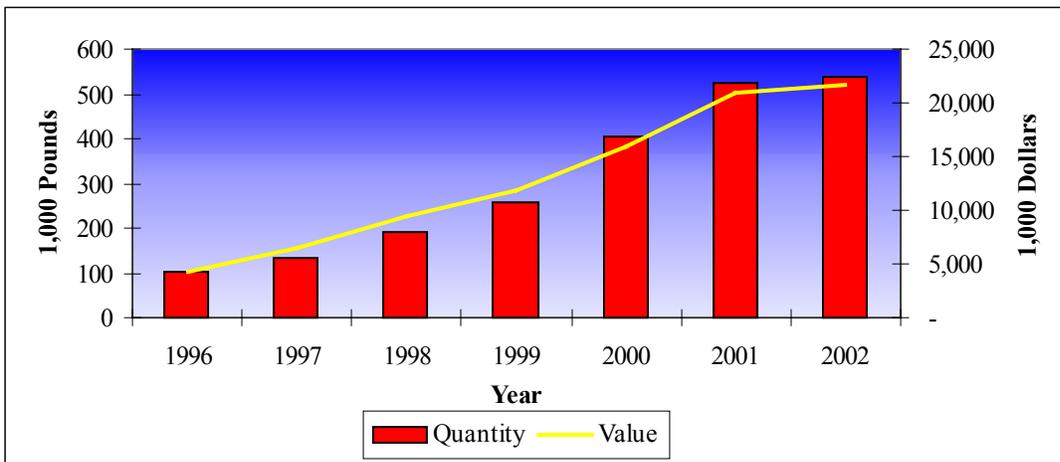


Source: Floriculture Crops, NASS, USDA.

Competition from Foreign Suppliers

Over the past 7 years, the value of potted orchid imports has increased fivefold (Figure 13).

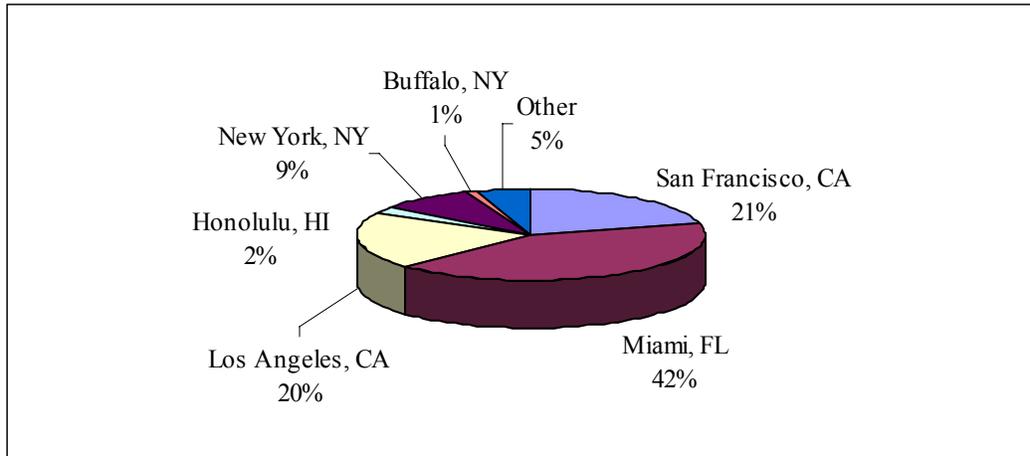
Figure 13: U.S. Potted Orchid Imports by Quantity and Value, 1996-2002



Source: U.S. Dept. of Commerce, Bureau of the Census. Presented by: World Trade Atlas.

The breakdown of orchid imports by district in the U.S. for 2002 is depicted in Figure 14. This graph only provides information as to where orchid imports are initially received and does not indicate final destination. Nevertheless, the majority of imports are received in California and Florida, which are the top two orchid production areas in the U.S.

Figure 14: U.S. Potted Orchid Imports by District, 2002 (Import Value)



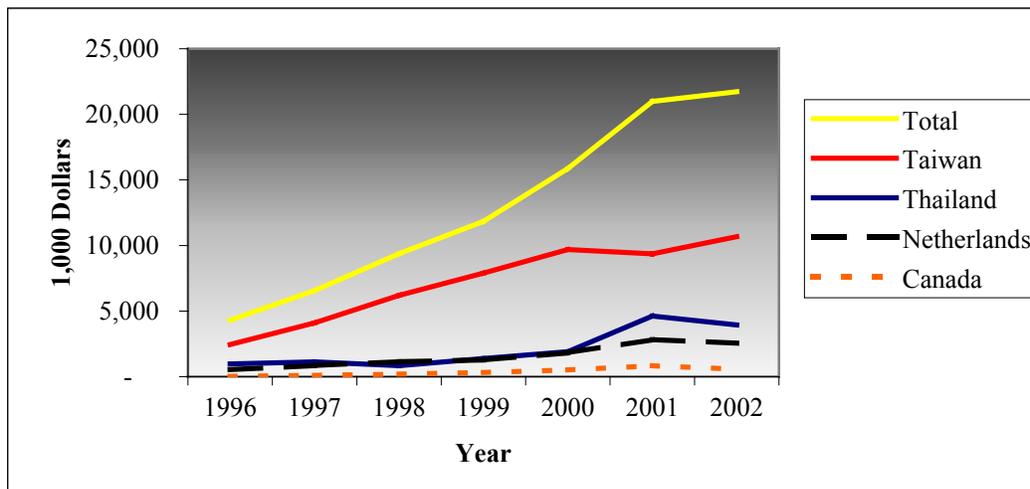
Source: U.S. Dept. of Commerce, Bureau of the Census, Presented by: World Trade Atlas.

Over the past 5 years, Southeast Asian competitors have aggressively targeted the U.S. market. Taiwan, which specializes in Phalaenopsis, is the largest exporter of orchids in the world and is the major exporter of orchids to Japan, China and the U.S. Thailand, noted for Dendrobium, is the second largest foreign supplier to the U.S. Together these two countries account for roughly two-thirds of U.S. potted orchid imports, whereas unusual species and new hybrids desired by collectors and orchid breeders are imported from countries around the world.

Thailand, Taiwan and The Netherlands are important sources of propagation material produced by tissue culture. Although there are several tissue culture laboratories in Hawaii and growers with in-house tissue culture capabilities, most Hawaii orchid growers benefit from importing some portion of their young plants from these production areas.

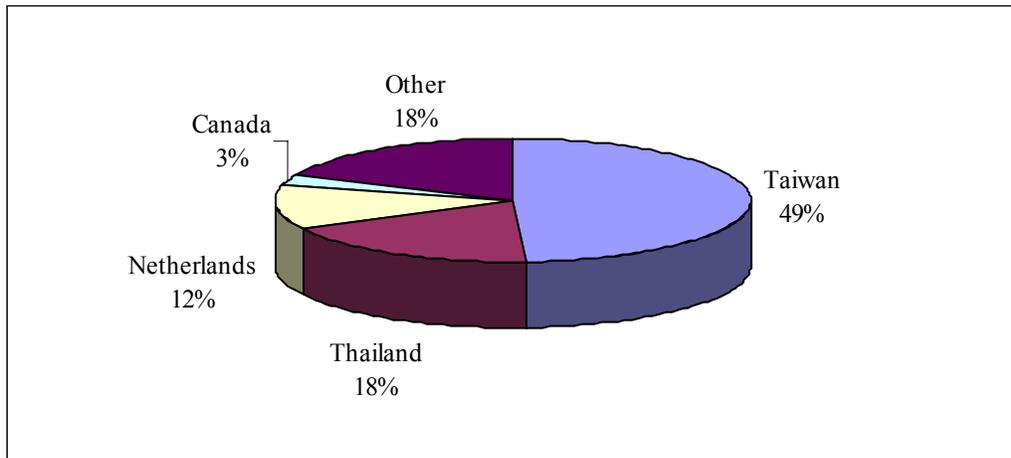
Figures 15 and 16 show U.S. orchid imports by origin and their respective market share.

Figure 15: U.S Potted Orchid Imports by Origin, 1996-2002



Source: U.S. Dept. of Commerce, Bureau of the Census. Presented by: World Trade Atlas.

Figure 16: U.S. Potted Orchid Imports by Origin, 2002



Source: U.S. Dept. of Commerce, Bureau of the Census. Presented by: World Trade Atlas.

Quarantine 37 (Q37)

Taiwan has twice requested USDA, APHIS PPQ to amend 7 CFR 319.37, otherwise known as quarantine 37, to add *Phalaenopsis* to the list of plants that can be imported established in an “approved growing media.” The approval of this request will improve the viability of the plants, decrease losses during transport, enable Taiwan’s orchid producers to bypass U.S. growers and provide finished plants directly to wholesalers and retailers. This would change Hawaii’s competitive situation dramatically because Taiwan’s growers have significantly lower costs, large scale of production and excellent backing to target the U.S. market.

If Q37 were to be amended to allow *Phalaenopsis* from Taiwan entry in growing media, experts agree that other genera and producing areas could potentially be approved for importation in media shortly thereafter. Hawaii’s orchid industry would be unable to maintain its competitive position in the retail market on the U.S. mainland and would be reduced to serving the local market and selling specialty and collectors’ specimens. This threat has a definite impact on Hawaii’s industry growth today since it restricts investment in new production facilities.

Industry concerns about the economic impact of Taiwan’s proposed change to Q37 are not solely based on the desire to protect the domestic industry from lower-cost overseas competition. The real issue is the economic impact of foreign pests and diseases that are introduced through plants imported in media. Production protocols and current inspection capabilities are insufficient to thoroughly protect orchid growers from introduced pests and diseases which hold the potential for devastating an industry.

Competitiveness of Hawaii's Product

Hawaii's diverse climate enables the industry to offer customers one-stop shopping for a wide range of genera. Production of tropical orchids, such as Dendrobiums, Phalaenopsis, Vanda and Cattleya, as well as cooler climate products such as Odontoglossum intergenerics, Miltoniopsis and Cymbidium brings great diversity to the Hawaiian industry's product mix.

Production Scale: Unlike California and Florida, where the largest orchid nurseries tend to resemble factories, Hawaii's growers are smaller overall and less mechanized. Leading California growers may have 1 million square feet of production space, compared to "large" Hawaii growers with greenhouses totaling 200,000 to 300,000 square feet. Larger mainland growers are suited to servicing mass market chains that may require their suppliers to place product into hundreds to thousands of stores at one time. Hawaii orchid growers cannot supply the amount necessary for a retailer of that magnitude, but are well-suited to smaller, regional chain stores, or servicing the larger chains through brokers who combine their product with that of other suppliers. Hawaii's growers often rely on brokers to move excess product during the flushing season.

Price/Quality: The average prices of Hawaii orchids are lower than average mainland prices because Hawaii growers have traditionally sold to middlemen such as mainland growers or brokers, whereas their counterparts on the U.S. mainland sell directly to retailers. Industry growth has enabled Hawaii's growers to sell directly to retailers, thereby achieving greater margins. There is little perceivable difference between Hawaii and mainland-grown orchids of the same species; however some professionals note that orchids grown in Hawaii are stronger, hardier, and have better root structure.

Distribution: As the Hawaii industry has grown in size and capability, so has its ability to service retailers directly. This not only enables growers to charge slightly more for their plants, but also affords them the greater security of dealing with customers directly.

Traditionally, Hawaii's orchids have been exported to specialist orchid nurseries on the mainland which supplement their own production by purchasing plants from other growers. Some of these nurseries sell plants on arrival, while others "finish" or repot them before selling to retailers. As a whole, the industry has become too large to rely solely on this market.

The Hawaii industry needs mass market distribution, but is not large enough to effectively serve national chains. Mainland distributors and middlemen who service large retailers by combining products from many sources is an important distribution channel. In order to handle distribution to larger chains, Hawaii's growers will need to continue working through mainland distributors, increase cooperation within the industry to service the chains, or consider forming some type of suppliers' organization. Supermarket, garden center and hardware chains with 20 to 30 stores are manageable size customers for individual Hawaii growers.

The industry now distributes its orchids through all manner of distribution channels, from shipping individual gift boxes to direct distribution to chain stores.

Transportation: Mainland orchid growers generally deliver their plants by truck, enabling them to easily ship flowering orchids in boxed cases or open trays. Hawaii's growers ship by

airfreight and must carefully wrap and brace flower spikes to prevent damage when plants are packed. Tight packing configurations are important to achieving lower airfreight shipping costs. Both systems maintain quality well in transportation, but Hawaii's airfreight system is more labor intensive both in the packing by the grower *and* unpacking by the customer.

Hawaii's growers benefit from excellent service and rates from UPS and FedEx, but shipping costs are two to three times higher than their mainland counterparts who ship by truck. Airfreight charges average \$1.15 to \$1.75 per plant from Hawaii, whereas trucking charges on the mainland are approximately \$0.50 per plant. Suppliers purchase plants for a fixed price, netting lower profit margins back to Hawaii's growers after shipping costs.

Opportunities: Hawaii's potted orchid growers are dedicated to increasing their share of the mainland market. Many medium sized and smaller orchid growers—often family farms with less than two acres of greenhouses—feared the mass production of orchids at larger mainland nurseries would represent fatal competition. However, most of these nurseries are successfully competing by repositioning themselves to serve various niches markets. According to industry sources, smaller Hawaii nurseries are succeeding by using a number of creative tactics:

- Specializing in unique hybrids and/or highly exotic orchid types
- Providing extraordinary service and quality to smaller independent mainland orchid sellers
- Producing the orchid plant plugs for larger growers
- Contracting with mainland growers to grow orchids
- Approaching larger local companies to broker their plants
- Increasing retail sales via the internet and at mainland orchid shows
- Offering one stop shopping for a wide range of genera
- Servicing mainland chain stores that are not on regularly scheduled delivery routes
- Shipping individual plants or single cases to anywhere in the United States provides Hawaii's growers more flexibility to service a wider range of customers, compared to mainland growers who deliver larger quantities by truck

V. Conclusion

Hawaii has ideal natural conditions for growing orchids from highly diverse genera, quickly, beautifully, and cost-effectively. The industry benefits from competitive shipping rates and excellent service from UPS and FedEx, outstanding local suppliers and breeders, and dedicated researchers and extension agents from the University of Hawaii and USDA. However, to effectively compete against mainland growers, prepare for the possibility of foreign competition entering the market, plan for increased pressure to lower prices, and ensure long term profitability, the industry and those who support it should address several key issues.

The Hawaii potted orchid industry needs large, state-of-the-art production facilities. The start-up cost per acre for efficient greenhouses, land and propagation material is approximately \$700,000 per acre. There is a need for financing, loan programs and investment assistance to enable the industry to develop the type of greenhouses that will ensure the industry's competitiveness in the long run. Agricultural land leasing terms discourage investment in state-of-the-art facilities and encourage growers to construct greenhouses as cheaply as possible.

University and USDA research programs should be directed toward research that looks at better ways of producing, growing or protecting the orchid crops, including insect control, plant pathology, growth cycle manipulation, and production engineering and technology. In addition, research is needed into the viability of shipping by sea freight and other ways to reduce transportation costs. It is vital to communicate research findings to the industry through conferences and publications.

The industry needs continuous support of their efforts to fight relaxation of Q37. This includes support from the Hawaii Department of Agriculture, legislators, and other local and national regulators.

Despite strong demand for their products, the industry needs some degree of marketing support. Because Hawaii's orchid farms are generally small, distant from the market and their customers, it is costly for them (in terms of staffing and expenses) to develop and maintain customers on the mainland. Programs that support growers' own sales efforts are encouraged, such as grant subsidies for individual companies' trade show participation or group displays that represent individual growers.

References

Griesbach, R.J. 2000. Potted Phalaenopsis Orchid Production. ASHS-2000 Symposium: Potted Orchid Production in the New Millennium. <<http://primera.tamu.edu/orchids/griesbach.htm>> *last accessed*

Britt, J. 2000. The Status of the Commercial Production of Potted Orchid Around the World. ASHS-2000 Symposium: Potted Orchid Production in the New Millennium. <<http://primera.tamu.edu/orchids/britt.htm>> *last accessed*

USDA. 2002. Floriculture and Nursery Crops – Situation and Outlook Yearbook. Economic Research Service, United States Department of Agriculture, Washington D.C. May 2002.

Hawaii Agricultural Statistics Service. Hawaii Flowers & Nursery Products Annual Summary, Hawaii Department of Agriculture, Honolulu, Hawaii, June 2003.

Interviews with:

Glen Barfield, The OrchidWorks

Dr. Ruth Iwata, Executive Director, Hawaii Orchid Growers Association

Don Eberly, Hawaiian Tropicals Direct

Jim Neighbors, Puna Orchids, Inc.

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