

Lessons Learned at the Mid-Pac Horticultural Expo and Hawaii Export Nursery Association (HENA) Conference

Charles T. Behnke and Harold H. Kneen

For the last several years, this newly emerging trade show — Mid-Pac Horticultural Expo and Hawaii Export Nursery Association (HENA) and conference — was held in Hilo, Hawaii, the last week in October to promote Hawaiian ornamental horticulture. This year the meeting was on October 25-29.

Production of sugarcane and pineapple has all but ceased to exist in Hawaii as a major agricultural revenue source. Hawaiian ornamentals are great potential sources not only to the mainland United States of America but also the affluent Asian markets. Remember, Hawaii is about midway between the continents.

Some 65 growers are listed in the HENA directory and on the Internet at **www.HENA.org**. These growers work to grow such certified nursery plant materials as orchids, anthuriums, proteas, bromeliads, exotic palms, dracaena, Norfolk Island pine, and other tropicals such as cacao and spices for local development.

Exporters are trying to develop a more comprehensive infrastructure to assist in the expansion of the ornamental horticulture industry.

Partnering with state and federal government, research universities, the Farm Bureau, trade associations, and ornamental and production horticulture entrepreneurs is vital for their future expansion. Even marketing on the Internet was being discussed with an e-commerce cooperative survey given to HENA members by the University of Hawaii-Hilo.

All the items destined for the mainland must be grown according to certification standards of the Hawaii Department of Agriculture, with special regard to preventing movement of the burrowing nematodes and other pests. Potted plants must be grown at least 18 inches above soil level. Inspections are done at least four times a year. Cut plant material such as palm fronds and philodendron leaves are hand washed both top and bottom with insecticidal soap before export.

Plants such as palms and dracaena are shipped to the U.S. mainland on 24' or 40' sealed sea containers that can take five days in transit to Long Beach. Recently, due to dock slowdowns, these sea containers often spent another 10 to 14 days in port, waiting to be unloaded, which caused significant stress on the plants.

Charles T. Behnke, Ohio State University Extension, Lorain County; and Harold H. Kneen, Ohio State University Extension, Meigs County.

Trailers are then loaded on trucks or rail for shipment to their final destination. Some shipments are currently being diverted to Oakland, Calif.

We observed 15' to 20' container-grown palms being loaded into shipping containers. Smaller container-grown palms were being packed around the larger palms. This sea-land transportation and backup at mainland West Coast ports can lead to plant decline, but it seems it is worth the risk. A number of large palms were destined for construction projects in Las Vegas, Nev.

Smaller ornamentals may be shipped by FedEx, United Parcel Service, and other air-freight carriers providing two-day service to most of the U.S. mainland. Specialized shipping containers and boxes were used at several packing houses.

High-value crops such as orchids are shipped by air freight with two-day delivery. Mainland weather can play havoc at times, especially during the winter, and shippers are very attuned to mainland weather and packaging requirements.

Dracaena growers are looking for improved cultivars to offer clients. There is a breeding program to develop new cultivars through the University of Hawaii-Hilo and the Agricultural Research Service-U.S. Pacific Basin Agricultural Research Center, Hilo. Some orchid growers are diversifying into intergeneric forms of orchids.

Some of the upcoming compliance challenges with certifications are the Coqui frog invasion (www.ctahr.hawaii.edu/coqui) and brown snake; both can easily break certification barriers.

Other pests include nettle caterpillar on Rhapsis palm, cycad scale (*Aulacaspis*

yasumatsui) on cycad Sago Palm, little fire ant (*Wasmannia auropunctata*), cotton lace bug (*Corythucha gossypii*), giant whitefly (*Aleurodicus dugensii*), and daylily rust.

Most greenhouses are really shade houses with a 30 to 70% shade cloth suspended 15 to 20 ft. above ground on telephone poles or metal poles. These modify growing conditions and rainfall. Significant lichen populations are attached to these shade cloth structures.

Growing benches were placed on stacked cement blocks with stainless hog wire for pot support. Benches in some facilities had an additional copper screen as a barrier for slugs and snails. Orchid and anthurium cut flower and potted plants were growing in poly-covered gutter-connected houses. This minimized excessive rainfall and potential spotting on cut flowers.

Recently, the eastern side of the Big Island had a minor drought. Large water-holding tanks are common at nurseries. Some have in-ground rubber-membrane-lined ponds, with greater than two-million-gallon capacities. Rural water provides some growers year-round access, while several growers buy water just in emergencies.

Trickle spaghetti tubing was used by many growers in the drier areas to conserve water and reduce runoff. One nursery used ground tire mulch as a weed control on field production. Ground tire mulch was applied to containers for weed control with good results. It was noted that the soil application of recycled tire mulch could be a potential fire hazard in the greenhouse. It did give provide good weed suppression, however.

The main supporting soil is volcanic cinders and Canadian and European sphagnum peats in ratios from 40:60 to as much as an 80:20 mix. Growers like these mixes because of their porosity,

waterholding and cation-exchange capacity, lack of shrinkage, and longevity. Other substrates used in place of peat moss were coconut hull and bark chips which had greater breakdown.

Most growers used a slow-release resin-coated fertilizer. Liquid feed fertilizers were used when plants were small and as supplemental feed. The cinders allowed for good air porosity, especially when some production sites can get up to 300 inches of rainfall a year. In addition, cinders are very low in fluorides, which

are detrimental to most foliage plants, especially dracaena production. Orchid plants, too, are grown in this mix, along with being placed in growing trays.

This trip was a once-in-a-lifetime opportunity for the authors, as we saw horticulture both exotic and familiar. Lessons learned are sure to find their way into our Extension programming and perspectives. As Rudyard Kipling quipped: "He who only England knows, knows England least."

