

Some Tough Propagation Challenges[©]

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USING WHITE POLY COVERED QUONSETS TO IMPROVE ROOTING

In 2011, we were in a record drought and heat wave. We had 147 days that exceeded 32°C (90°F), which broke the previous record of 127 days. In August 2011, all but one day was at or over 38°C (100°F). We noted that many of our crops suffered from the unrelenting heat. So we asked ourselves what we can do to give the crops some relief.

We started experimenting with white or milky poly to cover our rooting areas. Our normal procedure is to have poly baffles on each side of the quonset to keep the wind from disrupting our mist. Then we cover the quonset with black shade cloth, either 30% or 60% shade. With the white poly we maintained the normal wind baffle heights on both sides of the quonset. Instead of using shade cloth over the top, we used white poly, leaving a gap on both sides (above the wind baffles) of 20 to 31 cm (8 to 12 in.).

We noticed big improvements very quickly for multiple crops. One of which was *Loropetalum* selections which is a big crop for us. We did not make any other changes, so hormone concentration, cutting length; the number of leaves left on, etc. were standard operational procedures. Other crops that improved were *Plumbago*, *Brunfelsia*, *Trachelospermum asiaticum* 'Hosns', Snow-N-Summer™ Asiatic jasmine, *Citrus reticulata* (Satsuma Group), and *Bougainvillea*. We continue to look at other plants that might do well in this system.

TOUGH PLANT PROPAGATION CHALLENGES

Improving *Magnolia grandiflora* Rooting with Fog

The rooting of southern magnolia has been discussed and well documented at these meetings. Still, our success was very limited, despite reading and rereading the articles, and in many cases having direct conversations with the authors. We just could not make it work for us. This all changed when we started using an existing fog house. The results have been pretty dramatic. Last year we rooted 'Little Gem', 'Brackens Brown Beauty', and 'Kay Parris', respectively, in excess of 90, 70, and 80%. Our biggest challenge is with 'Teddy Bear' which has +30% rooting.

The fog house contains a MEE II Cloudmaker fog system, which was installed in 1986. This machine pumps the water pressure up to 1,000 psi, and then distributes the fog in copper pipes and special fog nozzles that comes with the system. The area we are fogging is 818 m² (8,800 ft²), about 0.1 ha (0.2 acre). The fog is run somewhat like a mist structure with some differences. We program the system to start about 2-3 h after sunrise and turn off about 2 h before sunset. The fog comes on for about 3 min and then is off for about 1 to 1.5 min. During the rooting time, the house is closed and remains closed day and night. When the temperature gets above 35°C (95°F), we turn on ventilation fans. Nothing is opened up; any new air is just what leaks in through cracks of the house. To help hold the temperature down, the roof is painted with paint designed for this purpose. We use Redusol 20KG.

The cuttings are collected first thing in the morning and we are finished collecting for the day by 9:30 a.m. to 10:00 a.m. Cuttings are stuck as quickly as possible. We need to get out of the house as soon as possible; it is just too hot for people to be in there. We only use terminal cuttings, leaving 2-3 leaves per cutting. They are about 13 cm (5 in.) long, the leaves are not cut, and the cuttings are wounded on one side. We direct stick the cuttings into 8.2 cm (3.25 in.) pots. The medium is 80% fine pine bark and 20% peat moss with a fertilizer package. Our best hormone treatment in 2011 was 5,000 ppm K-IBA and 2,500 PPM K-IBA. The cuttings are stuck 5.1 cm (2 in.) deep, which is not very

deep for a heavy cutting. They pretty much hold one another up. There is very little wind in this structure and so we do not have trouble with the cuttings falling over.

After sticking the cuttings, they are drenched with Heritage[®]. Then they are put on the regular mist fungicide rotation, which is sprayed twice a week. The rotation is Dithane/Fungoflo, Daconil, and Kocide.

Selecting the Correct Wood for *Eriobotrya japonica* ‘Coppertone’

Many growers have stopped, or never started growing this plant because rooting is difficult. There are two or three key points to take into consideration. The choice of cutting wood is very important; we use the old thick wood down the stem that is a grayish brown color. So we do not use the normal greenish wood, as we would do with most crops. For most ornamental plants this wood would be considered too old and woody. To get the wood that we desire we cut from 3-gal container plants and up. It is hard to get the desired cutting wood from smaller plants.

Patience is important when rooting this plant; it will take 3 to 5 months to root. It seems to root during any season of the year; however, they do take longer to root in the cool part of the year.

The rooting hormone that we use is 7,500 ppm IBA and 3,750 ppm NAA. The hormone is mixed into a rooting gel, which adheres to the cutting and improves the take.

Improving *Ilex vomitoria* ‘Pendula’ Weeping Yaupon Holly Rooting with Juvenile Wood

For this plant, it is all about juvenility. The younger or juvenile cuttings root at a high rooting percentage, above 80%; while more mature, adult cuttings root at less than 10%. For some plants, cuttings from shoots that are located close to the plant’s root system root better than cuttings from shoots that are farther from the root system. *Ilex vomitoria* ‘Pendula’ seems to be one of these plants. It is about getting the cuttings close to the root system, so stock plants are the poorest place to get cuttings; it does not matter that the cutting itself is from a hardened flush. It is not going to root with an acceptable percentage. Every time we go to a smaller/younger plant, the odds of rooting success improve. So a 5 gal better than a 15 gal, a 1 gal is better than the 5 gal, and a liner plant is better than 1 gal. Cuttings from our ground beds do the best. The more juvenile the cutting stock, the better the rooting percentage. The *Ilex* cuttings are taken in November to December. We like to cut them before the first hard frost; the leaves tend to stay on the plant better. We leave the terminal bud in, make a slight scratch on the basal end of the cutting, and use 1,200 ppm KIBA and 600 ppm KNAA. We have also tried IBA and also have been successful. The cuttings are between 13-20 cm (5-8 in.).