Liner Production of *Ternstroemia gymnanthera*©

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INTRODUCTION

At some point, back in the dim recesses of history, the plant correctly known as *Ternstroemia gymnanthera* was misidentified as *Cleyera japonica*. I have no idea how this happened, but it did and for all practical purposes the names have effectively been swapped, probably for all time to come. Although I am fully aware of this already muddled picture, the following is a step-by-step narrative detailing how we grow our *Ternstroemia gymnanthera* (Japanese cleyera) liners.

HARVESTING AND PREPARATION OF CLEYERA SEED

In south Mississippi, we collect Japanese cleyera fruit in early to mid-September. It is at about this time that the berries begin to crack open, revealing crimson-colored seeds dangling inside. This year we picked our seed on 10 Sept. 2007. To ensure a readily available, continuous supply of seed, we planted a stock block of Japanese cleyera on our nursery about 20 years ago. It is from this source that we gather our seed every year. In those rare cases when seeds are scarce, we have to scrounge them from various hedge rows and corner plants throughout the community. Fortunately for us, Japanese cleyera has been a popular landscape plant in this area for years, and so are fairly common.

Within a day or two after picking, and while the berries are still fresh, we run them through a Bouldin & Lawson seed washer. It has been my experience that letting the fruit dehydrate before the washing process is a very bad idea. It makes the pulp nearly impossible to remove from the seed. The washer yields a slurry of seeds and small fragments of fruit pulp. This slurry is spread out and allowed to dry for a couple of days. We have found that a steel-top nursery wagon makes an excellent drying surface for the seed. It can be rolled out into the sunshine or brought back into a shed during rainy or windy weather. After allowing the seed/pulp mixture to dry fully, the material is sifted through a mesh-bottomed plastic crate that we received some *Agapanthus* divisions in years ago.

It is strictly by coincidence that the gaps in the mesh are just about exactly the same size as Japanese cleyera seeds. It is an incredibly low-tech means of seed cleaning, but it works like a charm. The washed and sifted seeds are now ready for planting.

PROPAGATION OF JAPANESE CLEYERA SEED

As for medium, we use our standard propagation mix to plant our seeds in. It is a blend of finely ground pine bark, sand, and perlite (10 : 1 : 1, by vol). The mix is amended with a 12-month fertilizer at 2.4 $kg \cdot m^{-3}$ (4 lbs/yd^3), a micronutrient package of 0.9 $kg \cdot m^{-3}$ (1.25 lbs/yd^3), dolomite limestone at 3.6 $kg \cdot m^{-3}$ (6 lbs/yd^3), and Talstar at 2.4 $kg \cdot m^{-3}$ (4 lbs/yd^3). So long as the medium is fairly well drained, and not too coarse, I think just about any soil blend will suffice for Japanese cleyera seed germination.

Most of our Japanese cleyera seed are hand planted in 3 to 6 seed clusters directly into 1801 cell trays. Care should be taken to ensure that the seeds are planted no deeper than 0.6 cm (0.25 in.). This process is somewhat tedious, but no more so than transplanting seedlings from an open tray into small containers after they germinate. We prefer to seed directly into cell trays from the beginning. Obviously, not all seeds will germinate, but with proper attention it is likely you will get at least a few seedlings in every cell. Growing multiple plants per container is now the industry norm for Japanese cleyera production.

Once a predetermined number of cells are planted, the remainder of the seeds are planted into open trays and allowed to germinate en masse. These seedlings are used to fill in the inevitable blank spots that result from seeding directly into cell packs. Any unused seedlings in the open trays are discarded late the next spring.

It is imperative that the media be kept moist during the 6 to 8 week germination period. We have likely lost more young plants to desiccation than to all other causes combined. Hence, constant attention must be given to maintaining adequate moisture levels during this critical time period.

The first seedling observed this year emerged on 9 Oct. 2007, about 30 days after seed was initially harvested. It is normal to see just a few seedlings emerge during a 30- to 40-day period, with the majority emerging by Days 40 to 60. Any bare spots in production after 2 months will have to be filled in with transplants.

Seedling propagation, while being generally less expensive than vegetative reproduction, yields plants of varying traits. For the most part, seed propagation has been a positive experience for us. Most plants, even those discernibly different looking than most, grow up to be beautiful specimens. There is, however, the possibility, maybe even the certainty, that a small percentage of the seedlings will turn out to be inferior as adults. We simply rogue-out these seedlings.

One final note of caution I should add is: watch out for mice. Apparently, Japanese cleyera seeds taste like Hershey's Kisses to mice. You'll know they're around when you start to see small holes burrowed where the seeds are planted. Plain old mouse traps baited with peanut butter work well in combating these annoying little pests.