adjustable environmental controls would help our seedling crops come up faster and with more uniform germination than the more temporary enclosures we had been using previously. A chamber would also permit larger production windows and scheduling opportunities.

Instead of building a permanent structure we decided to purchase an insulated shipping container and modify it to suit our needs. We found a company close to the Port of Portland that refurbishes used containers and sells them at reasonable prices. The company delivered a 24-inch insulated container that was missing its refrigeration unit. After calculating the minimal light requirements of some of our seed crops we had a local electrical company install water-resistant fluorescent light fixtures. Our own technical services department built a new insulated wall and door where the old refrigeration unit used to be. Next, they installed a combination heating/air conditioning window unit with a small fan and circulation tube that ran along the floor of the container. Finally, we installed the wire-rack shelves and were ready to start sowing.

Seed Leaching Notes

Jason Julian
Monrovia Nursery, 13455 SE Lafayette Highway, Dayton, Oregon 97114
Email: jjulian@monrovia.com

Some seed contain chemical germination inhibitors that require leaching before germination can proceed. One of the groups that we have found benefit from a leaching treatment before sowing are the *Mahonia* taxa. In the past, we had simply placed the seed in a mesh bag and slowly run water from a hose through the seed. Success was somewhat inconsistent using this method. To more uniformly leach all of the seed, we created a new leaching system using material we had around the nursery.

We store many of our seed in clear, 128-oz, plastic containers with screw lids. These would serve as our new leaching environments. We cut out the top of each lid and replaced it with a fine mesh, stainless steel screen. A small hole was made at one of the top corners of each of the containers, just large enough to permit the insertion of 1/4-inch spaghetti tubing. The spaghetti tubing was attached to a pipe manifold with ball valves to control the water flow rate through each tube. The manifold has five ball valves on it, allowing us to leach up to five different seed lots at the same time. When the water is turned on, it travels through the tubing down to the bottom of the containers, mixing the seed as it leaches them, ensuring a more even treatment.

Dividing Tool

Jennifer Blanchard
Monrovia Nursery, 13455 SE Lafayette Highway, Dayton, Oregon 97114
Email: jblanchard@monrovia.com

At the Dayton, Oregon location of Monrovia Growers we make over 300,000 divisions of grasses, astilbes, and irises each year. One tool that we've found invaluable for this task is the Dexter Limelight Knife that has a 6-inch stainless steel blade. It is ergonomically designed and the bright colored handle makes it hard to lose. Our knives

last about 3 years. This knife is available at <https://www.hantover.com> for $13.65 and is part #45925.

Apex Versus Osmocote: Fertilizer Trial 2007

Valerie Sikkema
34825 Hallert Road, Abbotsford, British Columbia, CANADA V3G 1R3
Email: valerie@vanbelle.com

We propagate exclusively by cuttings, almost all year long, but I am going to focus on our summer softwood propagation. Our cuttings are usually taken from our container stock. We incorporate controlled release fertilizer (CRF) into the soil mix. The flats are mechanically filled and dibbled, and then two cuttings are stuck into each pot. We can do up to 40,000 per day on two lines. When full, the benches are moved into the Cravo greenhouse.

The pots are watered heavily for 3 days to leach out the initial salts, and then the water is cut back to misting until the plants are rooted. When the roots form, the plant is ready to grow since the fertilizer is already available. After the plants are well rooted, they are moved into the rail yard. This usually takes 3–4 weeks, depending on the variety and ambient conditions. The pots are placed on ground cloth over gravel. Several times through the summer, an automatic pruner runs along the rails to efficiently prune the liners. Most of the crop is overwintered outside; some plants are moved back into the Cravo, others are covered with hoops and plastic.

The Trial. We have always used Osmocote® as the CRF in the propagation mix and it usually works well, but I had some concerns about possible fertilizer dumping in hot weather and the coating breaking, especially as it goes through the flat-filler. Upon discussions with our soil and fertilizer suppliers, we decided to do a trial with what might be a safer alternative, Apex® with Polyon® coating.

The plan was to choose a couple of large crops, and put half into soil with Osmocote, and half with Apex, label them and then record electrical conductivity (EC) values (using a soil salinity meter). The expectation was that after leaching, the EC would stay low for a couple of weeks, but then it would slowly start to rise as the plants began to root. I expected also that the EC in the plants with Apex would rise more slowly, but that the fertilizer would last longer into the fall.

Unfortunately, we encountered a few difficulties along the way. There was a mix-up in the instructions so instead of switching back and forth, Apex was the only CRF mixed into the soil for quite a while, and as a result there weren't many crops of both Apex and Osmocote; most were one or the other. For the crops that did end up with both, often they were two different batches separated by a month or more which made comparison difficult. Also, the labels that indicated Apex fertilizer use were removed in the rails because they were too tall for the pruner. Thankfully Apex is bright green and easily recognized in the soil mix.

Results. Since most of the crops were entirely Apex or Osmocote, there was no possibility to compare the two fertilizers in those crops. There were some crops that had both types of CRF, but they were too far apart in time (e.g., May then July) to do a good comparison. Contrary to expectation, we did not get a significant rise in EC after a few weeks, and there was no difference in EC between the Apex and Osmocote in the