

# The quality control journey

From propagation to pulling orders, and every step in between, growers have many opportunities to impact plant quality



## By Kym Pokorny

Plants have personality. Each one grows at its own speed and habit.

For the wholesale nurseries turning them out by the hundreds of thousands, that's not necessarily a good thing. After all, customers tend to value an individual plant's quality, rather than its quirks.

"For anybody who has an interest in growing plants on a large scale and making money at it, it's important to adopt the mindset that a wholesale nursery is a plant factory," said Mark Buchholz, president of Skagit Gardens in Mount Vernon, Washington. "You want every plant to look like it came out of a plant-growing machine."

## Step one: Sorting and grading

In this uniformity-equals-quality world, grading is the first key to success. At every opportunity, from propagation to pulling orders, growers need to assess size and health and weed out the weak.

"Each time you touch a plant, you have the opportunity to grade it," said Buchholz. That's a lot of chances for sorting!

During its life at a nursery, a plant moves from liner or plug to ultimate commercial size after being transplanted several times. Humans put hands on the plants several more times for spacing and pruning. Even truck-loading time offers an opportunity for sorting.

At Oregon Pride Nurseries in McMinnville, salespeople and other staff who interact with customers make one final inspection of the plants as they are being readied for loading. If a plant or block of plants isn't up to par, it isn't shipped.

"We'll come back to the customer and say, 'You know, you had a viburnum on order, but what we have to pull from isn't what you expect,'" said Mike Lee, the nursery's production manager. "Then they have a choice. It's better than shipping a plant they won't want. It's our last measure of control."

From propagation (left) to the growing fields (middle) to shipping time (right), it pays to pay attention to quality control, so customers receive the caliber of plants they expect.

PHOTOS COURTESY OF VAN ESSEN NURSERY CO.

## Step two: Minimizing the uncontrollable

The challenges of consistency are many. Labor, shipping and weather can drive a nursery owner crazy.

"You can control pruning, spacing, irrigation and fertilizer," said Dave Van Essen, owner of Van Essen Nursery near Lebanon, Oregon, "but you can't control weather or shipping. If a truck driver turns off the refrigerator or is three days late, you can't control it. It's the most frustrating and difficult thing to deal with."

Lee knows exactly what Van Essen means. He cited the weather in the Willamette Valley last year when it rained constantly in May, keeping them from their scheduled fungicide applications — an unfortunate situation





Employees at Van Essen Nursery Co. use a custom-designed lawn mower apparatus to move down the rows of containerized plants and shear them to a uniform height.

in an area where rainy springs already complicate disease control.

But it's not just the local conditions that can pose problems. A bad forecast on the receiving end can be just as aggravating. No matter how ready the plants may be, they can't be shipped if the weather is terrible on the customers' end.

"You can plan the best you can, but you have to accept the fact that it's not always going to be 100 percent on," Lee said. "You have to tell the customer up front that you pruned a week ago and the plants are just starting to bud. That way you minimize surprise on the other side when they open the truck."

### Step three: Mechanizing uniformity

Like all growers, Robinson Nursery wants to ensure that customers receive what they ordered. To that end, the com-

pany started switching out some of their 300-variety stock of trees and shrubs from bare root to container grown using an innovative pot that allows roots to grow through slits in the side and be dried — or pruned — by the air.

That allows for more direct application of nutrients and water, which makes for more uniform plants and allows the company to produce trees that don't do well when grown bare root.

"Who drives that quality control?" said Chris Robinson, the nursery's production manager. "The customer does. They tell us what they need. That's the key."

Pruning is another area where uniformity can be graded. Machines, for some growers, are the way to go. Not only are they fast, they are also precise, according to Matt Gold of Gold Hill Nursery in Hillsboro. Once the parameters are pro-

grammed, the machine cuts to produce a cookie-cutter crop that satisfies the customer's demand for uniformity.

Optical sensors, calibrated for size, leaf density and color, are used in tractor-mounted systems and even drone applications. These machines help with inventory and sorting, which improves crop consistency.

"Aside from the obvious benefit of quality," Buchholz said, "these machines streamline, speed up and lower the cost of the tedious work of grading small plugs and liners."

The cost of such state-of-the-art systems is about the one-time price of a small, year-round grading crew. "You can purchase an optical plug-grading machine, significantly improving the quality of transplanted liners while at the same time easily quintu-

pling the output of the grading process,” Buchholz added.

Robots, which take on the task of spacing container plants, cost about half the yearly cost of a seasonal worker and can be employed full time, which makes it possible to complete critical work on schedule.

#### Step four: Training the right way

Machines are widespread and robots on the rise, but simple tools work, too, said Buchholz. He has used bamboo stakes, foot-long Felco grass shears, even marks on Levi's to teach staff to measure pruning height correctly.

“It takes out the variability of what this person thinks versus what that one thinks,” he said.

Training is important. Robinson said when the nursery was smaller they could count on employees to load an

order of plants of the same size, shape and high quality. Since the company has grown, maintaining this uniformity has become more difficult. With so many different people pulling orders now, it's become necessary to mark plants with tags or paint codes. Workers refer to the pull sheet and match the colors to the plants.

“You can't send someone out who's only been here two months and expect them to know which trees are which,” Robinson said. “Now we grade them. Keep them in sections of all the same size and color-code them. The staff learns that quickly. Anyone can look at a pull sheet and pull the plants for that order.”

#### Step five: Keeping the pests away

Trained labor is essential when it comes to weed and pest control, too.

As Robinson pointed out, shipping plants with pests or diseases can wreak havoc in the area where it ends up. That's not good for business.

To get a leg up on pest control, Oregon Pride was one of the first nurseries to get accepted into the Grower Assisted Inspection Program (GAIP) through the Oregon Department of Agriculture (ODA). Growers have to take a proactive approach on plant health by training employees, having a team of scouts documenting pests and implementing best practices.

“Through GAIP, we get priority in getting our phyto papers for Canada,” Lee said. “Because of our documentation to ODA, they know we're on top of it. That's really important to us. We put it out there on our sleeve.”

It's expensive to get a handle on pests, especially weeds. Gold esti- ▶



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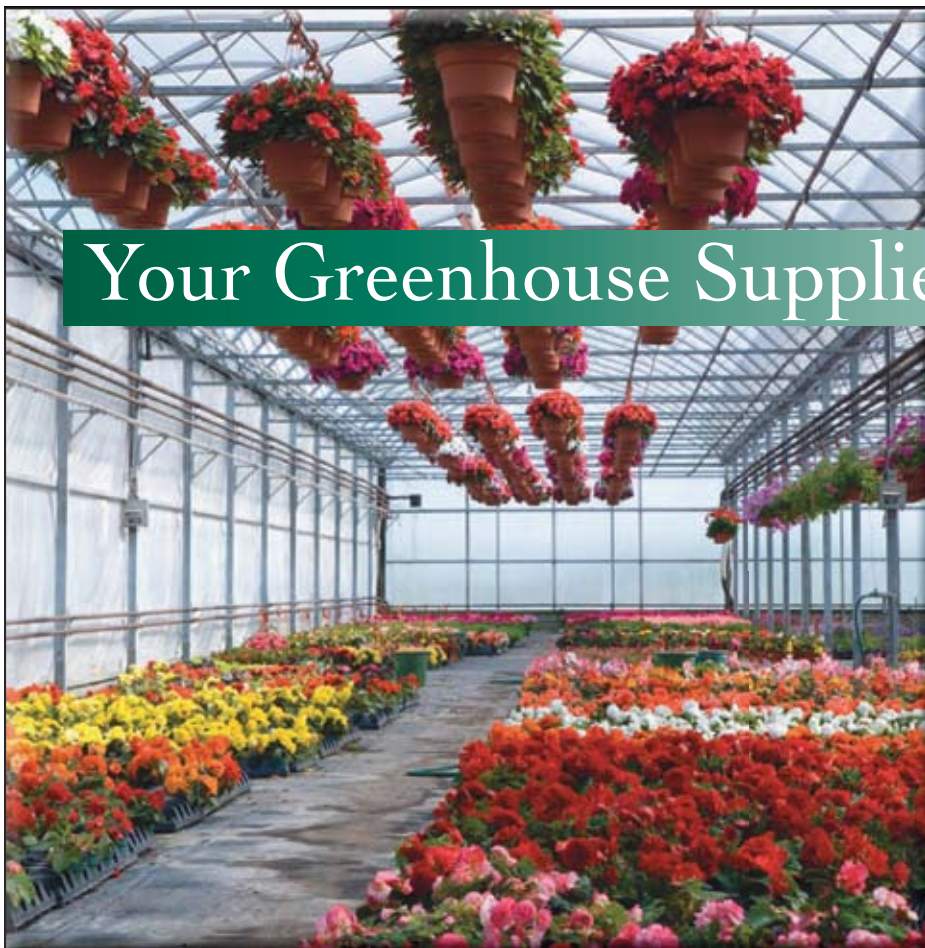
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mated that controlling weeds costs three to four times more than other pest issues, most significantly on labor for hand weeding.

“We use a preventative program for controlling particular pests,” Gold said. “If there are employees scouting, we can time things right and minimize the damage. That’s where knowledge and a program make a big difference. And that all goes back to training employees.”

As well as scouting, cultural practices minimize pests and diseases. All diseases need three things: the right pathogen, the right host and the right environment. If you’ve got the trinity, contamination will be high. If you reduce pest-friendly environments, you can minimize problems. Keeping plants spaced appropriately to give them good air circulation is important, Gold explained, as is avoiding over-watering.



**These soon-to-be-pink-blooming wallflowers (*Erysimum* ‘Bowles’ Mauve’) are close to shipment-ready.** PHOTO COURTESY OF SKAGIT GARDENS

“You can always remove a plant along the way because you think it will end up in the dump anyway,” he said. “We are a little more forgiving. We’re less likely to remove it early on. We

don’t throw away a lot of plants, so that tells me the system works.”

**The goal: Achieving consistency**

Much of what separates a so-so nursery from a successful one is consistency, which is driven by an eye for quality and an ear for customers. At every turn, that consistency comes from grading plants into the same size and similar shape.

“In the end, it’s uniformity that drives us,” Gold said. “In the nursery industry, we’re manufacturers. It’s a lot harder for us to make it uniform like someone who’s making Legos, but that’s what we’re trying for.” ☺

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