



## Part 4

# Keeping things moving

The Lean concept of continuous flow delivers big for Oregon's nurseries

BY JON BELL

**T**WENTY PEOPLE TO FIVE.  
A quarter-mile span to 20 feet.  
One week to 20 minutes.

What do these all have in common? They are all some of the head-scratching efficiencies that individual nurseries across Oregon have realized since they've implemented one key Lean concept — continuous flow. In short, it means efficiently moving materials through a streamlined production process from start to finish.

"It's made a big difference for us," said Tristan Wampole, continuous flow manager at **Kraemer's Nursery** in Mt. Angel, Oregon. "There's a big drive in the horticulture industry in general, because labor is getting more expensive and harder to find, to figure out ways to be more efficient."

For Wampole and Kraemer's, continuous flow has so far made the biggest dent in the company's process for building its shipping racks. That process had been a hectic, disorganized one that found workers trying to do too many tasks at once with no real direction or flow. After implementing continuous flow, however, the process became a tight assembly line that produces one shipping rack at a time, progressing from one step to the next until a rack is complete — and not starting on another until finishing the one being built.

The result? Not only has Kraemer's sliced its average time to build 10, four-shelf racks from about 57 minutes to just 30, but it's also all but eliminated any kinds of defects in the finished products.

"Before (continuous flow) we had an average of nine defects for every 10 racks," Wampole said. "After it, we only had one defect, and that was with a crew who had never done it before. We saw quite a big improvement."

### Beneficial array

So what, exactly, is continuous flow? In Lean manufacturing, it's about efficiently moving a single unit through each step of the manufacturing process from beginning to end, rather than multiple units at a time. The method works well in high-demand situations because it ensures a continuous flow of materials is

constantly passing from step to step.

Continuous flow can also be incredibly advantageous in a nursery setting for an array of processes. Kraemer's shipping rack example is just one.

At **Robinson Nursery Inc.** in Amity, Oregon, nursery manager Chris Robinson said he began incorporating Lean into the nursery about seven years ago. Two years ago, he said, they got serious about it; they also hired Lean consultants **The Peters Company** (Wilsonville, Oregon).

The nursery has implemented continuous flow on its potting line, mechanizing it so that the soil gets mixed, dropped into the potting machine, pots get filled — one at a time — plants get planted, they get a hazelnut top dress and then they're packed on a trailer.

Doing that alone boosted production by nearly 50 percent, Robinson said.

"The key to continuous flow is transforming one piece at a time," he said. (It was also Robinson Nursery that significantly shrunk its bare root processing area and saw production jump by close to 40 percent)

John Lewis of **JLPN Inc.**, a Salem, Oregon seeding operation and nursery, saw similar benefits with continuous flow in his soil production and planting line.

"At the start of the line, you have all of the soil components, and at the end of the line, a flat of Anderson band pots comes out, fully mixed, filled, planted, topped and watered, then off to the greenhouse it goes," he said. "The entire cycle might take 20 minutes from a pile of bark to a planted flat sitting in the greenhouse. In the past, this cycle from start to finish could have easily been a week."

Another area that has benefited from continuous flow is tending to trees in the nursery. Since the trees are in the ground, they can't be brought inside to an assembly line kind of process. Instead, Robinson has devised platform attachments for tractors, which workers ride on to tend to each required process, like staking and fertilizing.

"Basically, anything we do is one continuous flow," Robinson said. "Since the trees are stationary, we move the people through >>

## Lean: Keeping things moving



Previous page: JLPN employees assemble soil mixtures and plants in a production line JLPN. PHOTO COURTESY OF JLPN This page: Robinson Nursery employees ride tractor to prune in line. PHOTOS BY BILL GOLOSKI

the process and get the same kinds of results.”

### Buying in

One of the keys for successfully implementing continuous flow is identifying the problems that are causing the inefficiencies in the first place. That might be one of the easier tasks.

The more difficult part can be getting employees on board.

“I would say it was somewhat of a struggle to get the buy-in to change the way they’ve done things for 15 years,” Wampole

said. “But with our first big win, we’ve been trying to celebrate it as a company and hope that it inspires the team.”

Robinson said a similar resistance to change has been evident at his family’s nursery, so he’s tried to ensure that the workers play a big role in the continuous flow solutions.

“If they help develop their own process, it’s sustained, because they view it as their own,” he said.

At JLPN, Lewis said continuous flow has made longer, more difficult tasks easier and shorter, which helps ease stress and makes working less of a strain for

employees. JLPN workers also get bonuses when they save the company money, so there’s real incentive to make continuous flow work well.

And even though nurseries can see real improvements in their operations through continuous flow in just a handful of areas, as with all Lean components, the story never really ends. Even though Kraemer’s Nursery already improved its shipping process, it will revisit it again shortly. It will also be sizing up its propagation facility and working with its watering and planting crews as part of an annual set of improvement targets.

Lewis and Robinson will be soldiering on in the same way, too.

“This is just the start,” said Robinson. “We all strive for perfection, but we’ll never get there.” ☺

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