

Lean Flow in the Green Industry®

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LEAN FLOW

Lean Flow is a business strategy that has been around for decades, dating back to Henry Ford and the Ford Motor Company. The Japanese took Ford's concept improved it and added some key words like “Kanban,” “Kaizen,” and others that are now common words in Lean Flow. In recent years Lean Flow has become a buzz word in the green industry.

Typical Savings for Growers.

- Increased productivity: 15%–30% improvement.
- Optimized floor space: 3000 ft²–10,000 ft².
- Increased growing space turns: double the turns in the same space.
- Reduced shrink: up to 50% reduction.
- Improved sell-through: as high as 95%.
- Improved quality: fewer credits.

LEAN FLOW IN THE GREEN INDUSTRY

When implementing Lean Flow in your facility, you have to ask yourself, “where is my cost the highest?” In most cases, the greatest costs are in labor. So the focus is to improve productivity, but how can you improve it — old-school says push your employees harder and make them work faster. Lean Flow says focus on non-value-added activities and eliminate them. As you observe your operations, have you ever noticed the following?

- You have employees pre-labeling flats or pots, or pre-building boxes.
- You pre-fill flats, put them on a cart and then move them to the greenhouse so they can later be used for sticking.
- You pull orders 2 days in advance, or in some cases 1 week ahead of when they are going to ship, so you can inspect them, grade them, or do whatever you think is necessary to make them look good.
- A large crew bulk-pulls the day's product to be shipped, while a smaller crew prepares shipping racks laid out by truck load. As all bulk-pull products are brought to shipping near the end of the day, the entire crew hastily off-loads bulk products to multiple shipping racks in multiple locations, in a short and tight time frame, and trucks cannot be loaded until the last bulk pull has been off-loaded to shipping racks.

These are classic symptoms of doing work in a batch methodology. With Lean Flow, the goal is to flow product one piece at a time whenever possible. By producing in batches, costly extra touches are added that may impact the quality of the product, you have more inventory, you require more space to put the inventory, and in the end your productivity is lower.

LEAN FLOW IN THE PRODUCTION AREA

The goal of Lean Flow in the production area is to keep your people sticking, planting, or seeding more minutes and seconds of the day — not to make them do it faster. In many facilities, growers have employees sticking or planting on a belt conveyor, because the grower thinks that the conveyor makes the employees work faster. They may work faster on a conveyor, but are they more productive? Also, how is the quality of the work they are doing? Have you ever watched the *I Love Lucy* show where Lucy and Ethel are working in a chocolate factory, packing chocolate bon-bons on a belt conveyor? The belt speed is too fast; they can't keep up with the speed of the belt conveyor and are not packing the chocolates correctly. This is what your employees look like. When this occurs the quality of the product is compromised. Spend 10 min observing your employees on the belt and you will think of Lucy and Ethel.

The other problem with employees working on a paced belt conveyor is that they are less productive — contrary to intuition. You will notice that a portion of your employees are always waiting for product to come to them. The reason this occurs is because it is impossible to balance the work of employees when the product is moving.

With Lean Flow, we take the belts out and have the employees work on a stationary surface where the product moves only when the employee moves it. The line is set up as a Progressive Sticking™ or Progressive Planting™ line. Let's say that your employees are sticking cuttings into a 72-cell tray. Instead of having one employee stick the entire tray, have three employees each stick about $\frac{1}{3}$ of the tray (24 cells). Set up the workstations like an assembly line, you will be surprised how more relaxed your people are working, and how much more they will produce with much better quality.

There is one more person you need to have on the line, the material handler. The role of this person is to keep the stickers sticking more seconds and minutes of every day, by making sure they have cuttings, tags, filled trays, root hormone, etc. The Material handler is considered the non-value-added person on the line; yet his coordinated efforts ensure that the value-added people (stickers, planters, and seeders) are constantly working, not waiting for material.

The other key to improving the productivity on this line is to make sure that the changeovers are transparent. When you change from one tray size to another, change plant material or change soil, the line should not stop. To put it in perspective: if you have 12 people on the line and you have 10 changeovers a day that each take 3 min (stickers not sticking), by the end of the day you have accumulated 360 min of idle time. How long does it take to stick a cutting—perhaps 5 sec? The 360 min equals 4,320 cells, or sixty 72-cell trays. This is how we improve productivity—by eliminating waste, not by making people work faster.

Typical productivity improvement that you should see is anywhere from 15% to 35%. One grower who implemented Progressive Sticking™ got a 6-to-1 payback in the first season of running the lines. Another grower who was sticking in the greenhouses went to progressive sticking and realized a 33% productivity improvement.

LEAN FLOW IN THE SHIPPING AND PACKING AREA

The goal of Lean Flow in the shipping area is to improve the response time to the customer, productivity, and the product quality. In the shipping area, a “supermarket” is set up. A supermarket is a physical location where product is staged, typi-

cally a third of a day to a day's worth. The amount depends on the physical space available and how long the product can stay in the supermarket without affecting the quality. A crew of people pulls product from the greenhouses, ranges, and fields to the supermarket.

As one crew is pulling material, another crew is picking product from the supermarket to fulfill customer orders. With the supermarket you have product flowing into the supermarket and product flowing out at a steady rate.

By having material in the supermarket first thing in the morning, the order-picking crew can immediately begin fulfilling customer orders. Within the first 30 to 45 min, a truck should be loaded and ready to go. Having the ability to load trucks first thing in the morning allows you to load trucks throughout the day. By the end of the day (9–10 h), all the trucks should be loaded and your employees are ready to go home. Currently, during peak weeks, you are probably working countless hours of overtime, yet with a supermarket in place, the peak weeks don't feel like peak weeks.

A grower in Michigan that sets up a supermarket did not work any overtime during their peak weeks in spring. This was the first time in the company's history that they did not have to work overtime. Another grower was able to improve productivity 30% the first year and 12% the year after, simply by setting up a supermarket in the shipping area.

The two techniques described above are just two specific applications for growers. The same Lean principles that are implemented in production and shipping are also implemented in the office processes.