Improved Shipping Methods To Increase Profit

by John Bartok, University of Connecticut

A few cents saved on each flat of plugs or cuttings you grow adds up to many dollars over the growing season. In shipping, it's the details in each step that make the cents.

Timing is important in all stages of production and this extends over into shipping. Getting the plants to the customer when they are needed will result in repeat orders. There are several areas to look at when you want to improve your shipping operation.

Handling In The Greenhouse

There are two basic methods of assembling the plants needed to fill an order; individually - going from growing area to growing area picking the number of flats of each variety that are needed, or collectively - gathering the total day's needs of each variety; moving them to the shipping area, and then selectively picking the right number of each to fill the order.

For orders with a large number of a few varieties, the first method generally works best. If there are only a few flats of varieties, the second method will usually save considerable time.

The task of locating the right flat can be time consuming. I have seen growers walking up and down the aisles looking for flats to fill an order. Some growers are using wireless handheld scanning computers to aid in tracking product location. These can also provide inventory control and billing. UPC labels are attached to each flat as it is seeded and then are tracked whenever they are moved. When shipped, the flats are removed from inventory.

You can't afford to walk very far carrying a flat. Based on research that I did for the Horticultural Research Institute, the average time to pick up or set down a flat is 1.5 seconds. Walking at an average pace of 4 feet per second adds considerable additional time. Assuming an $8 per hour labor cost, a 15 foot trip in an aisle to select a flat adds 2 cents to its cost. How many times has that flat been handled already? Reducing the walking time by handling more flats at a time with either carts or conveyors can produce significant savings.

One of the best systems for larger growers with a local delivery area employs carts that are directly loaded in the greenhouse, pushed or pulled to the shipping are where they are shrink wrapped, and then loaded onto the delivery truck. This eliminates one or more handlings that can save money. It also reduces potential plant damage that can occur each time the flat is moved. Carts are available in many sizes and configurations that fit both the aisle dimensions and the truck body. Purchase the ones that have light weight shelves that can be easily adjusted for narrow shelf spacing. Larger diameter cushion wheels will keep flats from jumping around when the cart is moved in the greenhouse area.

A mono-rail conveyor is convenient when plants are grown in individual houses connected by a headhouse. Through the use of switches, plant carriers can be pushed from any greenhouse to the shipping area. Plant carriers should be fitted with adjustable shelves to accommodate different size plugs. The carrier can be designed to carry 30 to 60 flats at one time.

Packing Area Efficiency

If the orders are not assembled in the growing area, then assembly is done in the parking area. An efficiency routine needs to be developed to save time and handling. Some growers have adapted gravitational flow racks to make order picking easier. These consist of racks of sloping conveyors adjacent to a work aisle. Flats are delivered by cart to the back of the racks, loaded on the conveyor, and moved by gravity to the front edge. Workers select flats from the conveyors to fill the orders.

For growers that box their plants for shipment by common carrier or package delivery service, a workstation area is needed to do the packaging. An efficient workstation design can increase efficiency by 20 to 30 percent. The workstation should include a work table, space for supplies, space for the packaged boxes, and be convenient to the flat storage area. Workers should do a minimum of walking. Work tables should be at elbow height. Locate a conveyor at the back of the work table to carry the filled boxes to the shipping area.

Packaging

Developing a package that ships well has been a real challenge. Once the plugs leave your greenhouses, you have lost control over how they are handled. Even though they may be labeled "Plants - Handle With Care" or "This Side Up," the employees at the shipping company may ignore this as the boxes have to be handled rapidly to keep up with the flow on the conveyor belts.

Engineers in the package are design and development department of the larger common carriers, such as FedEx, UPS, or the airlines, can suggest ways to improve package design. Some growers have sent test designs through the system before making a commitment to large scale shipments.

With delays common with airlines, additional foam insulation may be needed to give cold weather protection. The temperature in the main cargo compartment of an airplane runs between 65 and 90BF. If the plants are shipped in the lower cargo compartment, the temperature could reach 0BF or lower. Some companies such as RoadWay Express and Javic, are set up to handle freezable items. They provide heated storage areas and guarantee a temperature above 35BF. If there is some leeway in your shipping schedule, you can help by monitoring the weather and avoid shipping in extremely cold or hot weather.

Most claims against shippers are related to damaged plants. Inserting bubble wrap or microfoam between layers can help to hold the

plugs in place when the boxes are tipped upside down or dropped. Some growers use plastic or cardboard sleeves around each flat. If you have large orders, shipping them on a pallet will result in gentler handling.

General recommendations for shipping plants by common carrier so that they arrive in good condition in the shortest delivery time include:

-Wet the plants before shipping and let them drain so the packaging doesn't get too wet.

-Use a box coated with plastic or wax so that it retains its strength when wet.

-Use distinct labeling located on the top of the box and make sure that the complete address and phone number are legible.

-Use a tough pressure-sensitive tape with a high edge tear and split resistance that will stick to coated cardboard.

-Try to avoid shipping over weekends, as this could add a day or two to delivery time.

-Use the tracking system employed by the delivery company to check on transit time.

Four plants that are directly shipped on carts, shrink wrapping is a good way to hold them in place. Heavy duty turntables are available from several manufacturers including Salsco Inc. Cheshire, Connecticut (203) 271-1682 that allow arts or pallets to be rotated while the wrap is applied.

Trucking

Local delivery of plugs is usually more economical and timely using your own or leased trucks. Setting up a delivery schedule to the different section of your market area can often reduce shipping costs and provide better service.

The price of the plugs should reflect the increased cost of fuel. Most common carriers now add a surcharge to cover this increase. Holding the costs down can be attacked in a number of areas. In a recent survey, the American Trucking Association found that driver skill, speed, equipment selection, tires and idling were the major factors that affected trucking efficiency.

If possible, select drivers that have taken a formal training course. This course teaches things such as when to shift, how fast to drive, how long to let the engine idle before shutting down, route selection, and refueling options. Awarding the best drivers for good performance, including fuel mileage, has worked well for some companies.

Increased speed decreases miles per gallon. Traveling at 65 mph instead of 55 cuts fuel mileage by ° to 1 miles per gallon (mpg). At 75 mph, the penalty is even greater. With the average trailer truck getting only 6 to 8 mpg, with increased speed, and with rising fuel prices, delivery cost to distant markets can increase significantly.

When purchasing new trucks, make choices that give greater efficiency. Strong, light weight materials may cost a little more but can be offset by the 1/10 mpg for each 100 pounds of additional weight. Also look for aerodynamic design. Curved hoods, roof deflectors, and non-air trapping bumpers increase efficiency.

Select a diesel engine. A diesel engine uses about 30 percent less fuel than a comparable gasoline engine. Installation of electronic control on the engines can also save fuel.

Instruct drivers to limit idling engines for more than 10 minutes. A large diesel engine will consumer about ° gallon per hour (gph) at idle speed.

For local delivery, consider contracting with a local gas station or distributor to lock in prices. With the volatility in the fuel industry, this could save considerable money. For local delivery, limiting the amount of fuel that is carried in the tanks can increase mileage. At 7.5 lbs/gallon, an extra 50 gallons can reduce fuel mileage by 0.3 mpg.

Provide the required maintenance. Besides saving fuel, it reduces breakdowns. A tune-up is one of the most important ways of maintaining peak performance. Savings of up to 20 percent can be achieved. Keeping an accurate log of route miles, fuel usage, and mileage can also help to identify problems before they get too large.

Developing delivery schedules and routes can help to cut costs. Software is available that can aid in this time-consuming job. With a fuel cost of 15 to 25 cents per mile of truck travel, direct routing is important. Additional driver time also adds to the cost.

From the above, you can see that there are many ways to improve shipping and reduce costs. Assigning someone the responsibility for keeping an eye on this part of the greenhouse operation could pay good dividends.

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