

Sattin Hill Farm Course

Module 19: Harvesting, Washing, Packaging, & Selling

Introduction

This module covers harvest tools and tips, including when to harvest and how to harvest specific things like lettuce, baby greens, root crops, and kale. In addition, Josh shares his methods for packaging, selling, and delivering produce.

Harvest Totes

On Josh's farm, he uses the 18-gallon Centrex Rugged Tote for harvesting purchased from [Lowes](#). He recommends designating different totes for specific tasks and them accordingly (i.e., Harvest, Field, Dirty, Clean, etc.). Harvesting root crops gets totes extremely dirty, so designating a few totes for that task is beneficial. It helps your clean products stay clean.

After harvesting, Josh rinses out the totes and puts them upside down on the drying screen in his wash pack station to drip dry.

Selecting harvest totes sized to fit in your walkways is crucial. Purchase more totes than you think you'll actually need. You'll find a need for more than initially estimated.

Harvest Scale

Josh brings an [analog scale](#) out to the field with him when he's harvesting. He prefers analog over digital while outside harvesting because he won't have to replace batteries. In addition, it's easy to tear the weight of the tote without the chance of the scale turning off as digital scales do.

While in the field next to the bed being harvested, Josh puts the tote on the scale, tears the weight of the tote, removes the tote, then carries on with harvesting. This allows him to periodically check how close he is to his target weight. When harvesting by weight, Josh recommends you harvest 15-20% more than you need. Returning from the field only to discover you haven't harvested enough to fill your order is avoidable using this technique. Once you're in from the field washing and packing, having to head back out to harvest a few more pounds is an inconvenience and loss of time.

Weighing your harvest in the field is helpful when working with a crew. It eliminates the margin for error and helps teach the crew how to get a feel for the yield of different crops.

Harvest Knife

Josh uses a serrated [harvest knife](#) with a red handle made by Victorinox. They are inexpensive, extremely sharp, hold their edge, and are easy to spot when dropped in the field due to the bright red handle.

Rubber Bands

Rubber bands are great for bunching crops like kale, chard, and green onions. They are also used for packaging produce.

Quick-cut Greens Harvester

The [Quick-cut Greens Harvester](#) from Farmer's Friend is an amazing harvest tool powered by a cordless power drill. Although expensive, Josh says it's an indispensable tool if you grow baby greens at any kind of scale.

Harvest Tips

Give A Little Extra: Always err on the side of being a little over the target weight when bagging produce. For example, if you promise five ounces and you're over 0.2, 0.3, or 0.4 ounces, leave it. The goal is never to be under the promised weight. Don't waste your time adding and removing tiny increments to match the target weight. This practice will ensure that your customers will never feel they were shorted.

Shelf Life: Extended shelf life is a huge advantage for the local farmer. The ability to harvest the day before or the day of delivery sets apart your product from conventional produce that was shipped far distances. Take preventive measures to keep your products fresh, or you lose this advantage.

Get your produce into the cooler as soon as possible when coming in from the field. This is more crucial in the warmer months of the year. When it's sweltering, harvesting in the morning when it's cool outside will also help to preserve freshness. If the crops are limp in the hot afternoon sun, it's not the ideal time to harvest. They may perk up a little from watering them, but they will be at their best first thing in the morning. Harvesting in the hot afternoon can also lead to bitter-tasting lettuce.

Avoid Bolting: Bolting refers to when crops grow upward in preparation to flower and go to seed. This is a natural part of the life cycle of the plant but happens prematurely if a plant is stressed from things like excessive heat, pests, and disease pressure. Harvest long before this. Learning the harvest window for each crop (the ideal time to harvest) comes with time and experience. In general, it's better to harvest a little sooner than a little later. Leafy greens, in particular, are more tender and better tasting when harvested sooner as opposed to later.

Harvest Strategy When Working Alone: Since Josh works alone, he harvests first thing in the morning and immediately puts the totes in the walk-in cooler. Then he preps the wash station and removes the totes incrementally as he is ready to wash and pack.

If you have a crew, you might start harvesting together and then have one person transition to the wash pack station to start washing while more harvest is coming in from the field.

Lettuce

Varieties: There are many ways to grow, harvest, store, and sell lettuce. Head lettuce often does well at farmer's markets. Larger loose leaf lettuce sells well to local chefs for burgers and sandwiches. It comes down to what the demand is in your local market. Josh primarily grows and sells washed, cut-leaf lettuce to restaurants. He prefers the Salanova Foundation Mix from Johnny's Seeds.

Mixing Seeds: When starting his seeds, he mixes them for a randomized blend. This translates to the varieties being randomized when planted in the field as well. While harvesting, he gets an even mix of different lettuces. This procedure saves him the step of combining post-harvest for his salad mix.

Harvesting Cut-Leaf Lettuce: If right-handed: use your left hand to take hold of a head of Salanova lettuce and your right hand to cut about 2" above ground level. While making a clean cut, hold the leaves in a bunch with your left hand. Don't cut too low (below the growth point). Avoiding a low cut will make regrowth possible. Quickly examine the bunch in your hand and drop any damaged leaves in the bed, then place the bunch in your harvest tote. You can harvest Salanova lettuce this way by straddling the bed or from a kneeling position in the walkway beside the bed.

Once the entire bed is harvested, Josh recommends taking a few minutes to clean up the area. Remove the remaining leaves around the base of each plant that are typically

touching the soil or damaged. Josh removes these leaves by hand while straddling the bed. This prevents them from rotting and infecting the fresh regrowth, and it increases airflow for the health of the plant. If you are aiming for a second cutting, this extra measure makes a big difference. During a particularly hot time of year, Josh won't attempt a second cutting because the plant will likely bolt if left to regrow.

Bubbling Lettuce: Turn on the water and fill your greens bubbler in preparation for rinsing lettuce. If equipped with a Hudson float valve, it will shut off automatically, which allows you time to work on other tasks while it fills. If your water is not naturally cool, add some ice to lower the temperature and preserve the freshness of the greens.

When the tank is full, shut the water off and add the cut lettuce. Josh recommends washing half a tote of lettuce at a time, about 6 pounds (+/-). Washing too much at once reduces the ability of the lettuce to move around while bubbled, lowering the efficiency of the cleaning.

Turn on the air blower and let it run for about four minutes. Bubbling for more extended periods can damage the greens, especially delicate baby greens. The air bubbles agitate the water like a jacuzzi and loosen up bugs or dirt, which will sink to the bottom. The greens float near the surface.

Spinning Lettuce: After the four minutes of bubbling, scoop the greens out and transfer them to the salad spinner. As mentioned earlier, Josh uses a fry basket for scooping. The timer is set for six minutes on the washing machine salad spinner.

Once the timer goes off and the spinning is complete, remove the basket of greens and dump them onto the drying screen. Turn on the box fans mounted above to complete the drying process. Spread the greens on the drying screen. A 2'x4' screen usually accommodates around five pounds of greens at a time. Temperature and humidity also affect the drying time. Keep a close eye on the greens, so they don't dry out and wilt. Periodically fluff them around a little with your hand to get a feel for the moisture content.

While the greens are drying, another round can be bubbled while another is spun. When all three components occur in tandem, a large volume of greens can be cycled through in a relatively short amount of time.

Packaging Lettuce: In the last step of the process, the drying screen serves as a final quality control area to visually scan for damaged leaves or bugs. This is the final product that your customers will receive.

Once again, while filling your bags of greens, err on the side of a little too much rather than too little. Never short your customers. Leave a little air at the top of the plastic bag before twisting and use a rubber band to close it. The bit of air in the bag helps prevent the product from getting squished while transported and stored.

Label the bag, noting the volume it holds (i.e., two pounds), and put it in the refrigerator or walk-in cooler to be stored until delivery.

Baby Greens

You make accurate cuts if you harvest baby greens by hand, but that procedure takes a huge chunk of time. The invention of the drill-powered [Quick-cut Greens Harvester](#) (by Farmer's Friend LLC) allows small-scale growers to make growing baby greens profitable; it reduces harvest time to a fraction of what it used to be. There will still be times when you opt to harvest by hand— Occasions when you only need a few pounds to fill an order or with a crop like baby spinach because the customer values all the leaves being cut at the stem. When harvesting spinach with the Quick-cut Greens Harvester, some of the leaves will inevitably be cut above the stem. Most farmers market customers won't mind this, but some chefs may be more particular.

When you use the Quick-cut Greens Harvester, pay attention to the height at which you hold it above ground level as you harvest. Hold it a little higher to get less stem. Or, if the crop was left growing too long and is taller than you think optimal, hold the harvester higher to only harvest the leaves, leaving the leggy stems. With time and experience, you will increase in speed and efficiency and gain an intuitive sense for adjusting the height.

You can also use the Quick-cut Greens Harvester to clear out an old crop in preparation for flipping the bed. Reference Module 6 for Josh's bed flipping procedure.

Josh's system for washing and packing baby greens is the same as his procedure for Salanova loose leaf lettuce.

Root Crops

Regarding root crops, Josh grows mainly beets, carrots, and radish.

Thin Harvesting: Josh practices what's called "thin harvesting" when he harvests root crops that grow above the soil, like beets, radishes, and turnips. Thin harvesting refers to selectively harvesting the largest roots first and then making another pass the following week to allow the smaller ones more time to mature. This can go on for several weeks until the bed is cropped out and ready to be flipped.

Regarding carrots, Josh harvests his on the smaller side as per the request of his chefs. You can harvest carrots as small, medium, or large, depending on the demands of your market. Periodically pull a carrot from your bed to gauge where they are at in size and maturity.

Tops or No Tops: Another aspect of harvesting root crops is whether or not to keep the tops (the greens) or to remove them. The demand in your market dictates this. If selling at farmers market, customers typically like to see the greens intact, showing they are freshly harvested.

Some chefs opt to have the carrot tops removed when buying in bulk. Removing carrot tops is best done in the field while harvesting, twisting the tops off, and leaving the greens in the bed. This step leaves a very small portion on top, which is a nice indicator of "locally grown." When harvesting this way, Josh uses one tote for the carrots and another for the tops. The tote full of carrot greens goes to the compost pile.

Beet greens look better at different times of the year. A lot of chefs cook with beet greens when they make a braising greens dish. However, if they don't want the greens included, Josh twists them off while harvesting and sells them elsewhere as their own product.

Josh fills his harvest tote with water and soaks any root crops he has removed the tops from for just a few minutes. This helps hydrate them and loosens the dirt allowing for easier and more thorough cleaning.

Washing Root Crops: When root crops are brought into the wash pack station, Josh sprays them off in the double-wide laundry sink he designated for this task. This can be done in the basin of the sink, or you can install a screen frame to go over the sink or a segment of plastic [greenhouse bench top](#).

After the root crops are sprayed clean, Josh lays them on the drying screen to drip dry before bagging them. For large crops, he uses a wire rack for laying out the root crops to dry. If roots are going to be stored for longer than a couple of weeks, the little bits of green should be completely cut off, as that portion will rot.

Packaging Root Crops: Josh uses the same U-line bags for packaging his root crops as he does for his greens. He puts 10 pounds of root crops in each bag for his restaurant customers. For selling at farmers market, you would typically bunch carrots, beets, and radishes with rubber bands. Most farmers bunch them in the field and then bring them in for washing.

General Harvest Tips

When harvesting crops that will be sold in bunches (kale, chard, green onions, etc.), count out the rubber bands you need in advance according to the number of sets you plan to make. This ensures you won't harvest too little or too much for your specific orders. This procedure works great for delegating the task to a crew or even when working alone. You can keep the pre-counted rubber bands on your wrist or your fingers.

Harvesting Kale: When harvesting kale, always harvest the most mature leaves around the perimeter of the plant. A quick back and forth motion produces a clean snap where the base of the stem meets the main stock of the plant. The smaller leaves in the center stay and continue photosynthesizing, and they regenerate for continual future harvests.

After gathering the leaves together for your desired size bunch, Josh recommends you use your harvest knife to cut the base of all the stems to a uniform length. After rubber banding the bunch, this step provides a clean, uniform look. It's a small step but presents really well to customers for a professional-looking product.

Harvesting Green Onions: When you pull up a cluster planting of green onions (typically around 5-7), shake as much excess soil from the root ball back into the bed. Then quickly separate the onions from each other, which detangles the roots. Josh recommends this step because it makes it easier to spray out all of the soil at the wash pack station. Then pull up another cluster, separate the onions in the same way, and rubber band the two clusters together to form one bunch. Josh prefers to leave the roots on as another way to show freshness, which sets them apart visually from standard grocery store green onions.

Selling to Restaurants

At Sattin Hill Farm, Josh sells exclusively to restaurants. He harvests just once a week on Tuesday. Wednesday is his delivery day. He settled on Wednesday as a result of

communicating with his chefs to get an idea of the best window of time for their schedules. Weekends are the busiest time for restaurants. Mid-week is generally the slowest time and the most convenient for receiving deliveries.

Texting Chefs: Josh has found that most chefs prefer text for their primary communication. He texts his chefs on the weekend to get orders for the coming week and to give them a brief update about new products coming from the farm. He emphasizes the importance of texting each of them individually, never group text. This fosters better business relationships.

Josh keeps his texts to a few sentences. He lists all of the items he has available and the prices. He doesn't send the same list to all of the chefs because some items may be in short supply or some items he grows specifically by request for a specific chef. He asks for his chefs to place their orders by Monday for a Wednesday delivery.

In general, the chefs are pretty good about getting back to him promptly. If they don't respond (with chef life being so crazy), Josh sends a friendly reminder on Monday, so he knows what to harvest on Tuesday. Most of the time they are happy to get the reminder and quickly place their order.

When orders come in, they are manually added to a spreadsheet. Josh prefers a blank spreadsheet printed out so that he can handwrite the orders on it. This procedure accommodates his farm size very well.

Invoicing: After harvesting his orders on Tuesday, Josh does his invoicing. There are many online invoicing companies available. Josh prefers to use Square. Invoicing is done only after the harvest to account for situations where there may not have been enough product to fill an order completely.

After preparing the invoice, Square emails a virtual copy to the chefs. This ensures they get a copy even before he shows up for delivery the following day. Then on delivery day, he prints two copies of the invoice for each chef. Upon delivery, he has them sign an invoice that he keeps for his records, and they keep the other copy for their records. He has them write him a check there on the spot. If they aren't there or no one else can write the check, he collects it the following week.

If a chef is consistently not paying invoices, consider not working with them. Josh, thankfully has not encountered this. After the check is received, he adds the check number to Square to keep a record of the payment. By dealing only with checks, you can avoid any fees from Square connected to card payments. This works well for

restaurant sales as most chefs often have a checkbook from doing COD for alcohol deliveries and other farm sales.

Delivering

With so much time and care put into harvesting at the right time of the day, washing, packing, and getting the product into the cooler to maximize shelf life, it's essential to make sure the product journeys to the customer safely.

Coolers and Ice Packs: Josh uses coolers to transport all of his products. He used to transport his coolers in a minivan but now uses a truck. Both work well. For his operation, he uses six [Coleman 150Qt coolers](#). They are standard coolers, but he likes them to all be uniform. He prefers one [Cooler Shock ice pack](#) per cooler since they are so thin and take up the least amount of space in the coolers. They stay cold for an extremely long time and stack really well in the freezer. They were a little pricier than other options but worth the investment.

It's important to remember that if bagged greens come in direct contact with the ice pack, they will freeze and be ruined. Previously Josh just used a towel over the ice pack to provide a buffer, but with the Cooler Shock ice packs, it wasn't enough. Now prefers a [Daisy tray](#) (a propagation tray he uses for soil blocks) inverted and laid over the top of the Cooler Shock ice pack. The towel is then placed over the tray. The tray acts as a cage that prevents direct contact with the ice pack. With this system, Josh fits up to seven of his two-pound bags of greens per cooler. The greens are pre-cooled from their harvest the day before, and their temperature is maintained in the coolers while delivered to the restaurants. This system works well to keep Josh's product undamaged and fresh for his deliveries.

Packaging for CSA

When filling orders for individual boxes for a CSA, your total weekly harvest is divided by the number of boxes you have to fill. Portion sizes and bunch sizes are calculated by how many boxes there are (within reason). Having cooler space for that volume of boxes is also a significant consideration. In a CSA, your primary goal is to cater to your customers and get them exactly what they want.

Packaging for Farmers Market

When selling at farmers markets, standardize package sizes and prices as much as possible to greatly simplify your flow, which is especially helpful when the market is

busy. Figure out a way for portion sizes of bagged items and bunched items to be all the same price. For example, one model that works well for a lot of farmers is to sell one item for \$3 and two items for \$5. It makes transactions smooth and quick.

Conclusion

This module concludes the Sattin Hill Farm Course. All video content was produced by Josh Sattin and sponsored by Paperpot Co. All video modules will remain indefinitely on Josh Sattin's YouTube channel for continual reference and review. We hope you have enjoyed this course and come away with some great tools to start your own small farm business.

Remember, you don't need a lot of land to start a farm. Josh's whole property is just a two-acre lot (primarily wooded), and his entire farm is on just an eighth of an acre! Don't let the size of the property you have discourage you. There has never been a better time to start growing your own food than right now!