

Innovative Production and Harvest Systems

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First a little background info about Sisters Hill Farm

I started Sisters Hill Farm for the Sisters of Charity of New York 17 years ago. We began as a CSA with 40 members; today we have grown to 300 members. We farm 5 acres of actual bed area and each year produce approximately 90,000 pounds of mixed organic vegetables on that with no double cropping. The farm crew consists of myself and 3 seasonal apprentices.

Special things about Sisters Hill Farm

Members rank our produce quality as excellent (4.9 out of 5) each season on our surveys. We have an 85% member retention rate. Our average member has been with us for over 6 years and 75 of our members have been with us for over a decade.

- We sell only CSA shares and give 10% to charity.
- We use no plastic mulch, yet have great weed control
- We don't have a transplanter, nor do we have belly mounted seeders.
- We work 45 hours a week regardless of the season. Less in winter.

Principles by which we operate.

Life is precious and finite. We want work to be fun and productive, so we can enjoy our time at work, but also get home to enjoy our families, hobbies and other passions in life.

Many new small farms and even established large farms that are growing rapidly, have put very little emphasis on efficiency and ergonomics. I decided many years ago to begin with the end in mind; to envision how I wanted my working days to go. How I wanted to streamline processes around the farm to make them more productive, less stressful to my body and those of my crew. Much of what you will see today is a result of that decision and that ongoing process.

So, let's get right to the principles of production at Sisters Hill Farm

Creating your beds is like pouring the foundation for a home. If the foundation is straight and true and square, all future tasks are straightforward and easy. I work hard to train my apprentices to till and mark accurately. We begin with a 5' chisel plow, then a 5 foot rototiller. The rototiller creates a nice uniform and flat seed bed. We then use a belly mounted row marker, (I make them for sale) mounted under a cub tractor to mark a grid on the soil. The grid creates 3

rows 15” apart running the length of the bed and makes a cross mark every foot. Using those marks, our crew can quickly and accurately plant up to 15,000 transplants/day by hand. We can also push an old Planet Jr seeder down the rows accurately enough to come back in later and cultivate mechanically. This is the foundation for all future work in those beds, whether it be thinning, weeding, or harvesting. If you are new to farming and are currently planting with no guidance for your seeding or transplanting, having an accurate bed marking system could easily cut your workload in half.

You may wonder, since we are so well established, why we don’t own a transplanter. Years ago I purchased a very sophisticated Mechanical 5000 3 row cup type transplanter. What I discovered was that for our size and scale, it just didn’t make sense. We have a rocky soil which created some misses, moving in creeper gear with a big tractor used burned lots of unnecessary fossil fuel, and the whole process was rather loud and stressful. So we sold it and went back to transplanting by hand. The way we approach it is very fast and efficient but it’s also nice from a social perspective. We always have great conversations while transplanting. There’s a nifty video of our system at this address. <https://www.youtube.com/watch?v=TplGzUcsNVw>

Weeding

We have 2 IH Cub (cultivating) tractors with the wheels spread to approximately 5 foot centers. The marker I mentioned earlier can be quickly mounted under one of them. The tractor wheels create the walking paths as the bed is marked. Under that same Cub, we can switch out the marker and replace it with sweeps (in a couple different configurations—one for 1 row cultivation—one for 2 or 3 row cultivation) or potato hillers. The second Cub tractor has a Budding Basket Weeder mounted under it all of the time. We could probably get by with just one Cub, but it would mean a great deal more switching of implements, which is a hassle. As you know, when things are a hassle, they sometimes go undone; it’s better to have 2 tractors and simply hop on one that’s ready to roll. Also, much of farming is about taking advantage of narrow windows of opportunity—like that stormy week where you finally have one dry afternoon to make some beds, yet you also have to basket weed some others. At these times, I can have the whole crew on different tractors performing vital operations before the next storm hits.

If you are small scale or just starting and don’t have a cultivating tractor, the principle still holds true. For a couple of years we used the same marker, pushing it by hand; we paired it with a wheel hoe with a 12” stirrup blade, and it was a very efficient way to cultivate. (The point is the rows do not wander in and out changing in width requiring you to do two passes where one would suffice.) We still use wheel hoes today when a crop has outgrown the Budding.

Harvesting

Simply put, if you are running an efficient diversified organic vegetable farm, harvesting will be the vast majority of your work load. To be profitable and enjoyable one needs to develop systems that make sense for your particular markets and mix of crops.

Being that we are exclusively a CSA and most of our members pick up their shares at the farm, the way we harvest, clean, and package produce can be very efficient. Many crops are simply

touched once, going straight into the containers that we will present them to customers in. Others need more processing. All crops are presented in a beautiful way and no crop is ever visibly dirty, except potatoes—we don't clean those at all.

Here are some important harvest principles at Sisters Hill.

- Process things only once. We make bunches in the fields, we clean off yellow and brown leaves while kneeling in the row.
- Be flexible. In the fall we do a lot more thinning of greens than we do in the spring. A good example is Tat-soi. In the spring we clear cut, but in the fall we thin periodically and they eventually become huge, increasing our yields with very little extra work.
- Specialize and batch process. A good example is when we are washing bunches of root crops. We place them around the perimeter of a low mesh bench and pressure wash them. One person lays them out, another follows, pressure washing them; the first person flips them over and they circle around again. The bunches are sparkling clean in 2 or 3 passes this way. One person working alone as a generalist is not 1/2 the speed of 2 specialists working this way.
- Don't be afraid to thin. Thinning beets is not a waste of time. The increase in yield and quality is well worth the time.
- Ergonomics are vital to the farm's long term success and workers health and happiness.
 - Match the harvest container size to the crop. Topped root crops go into a container that weighs about 35 pounds when full, greens containers are larger since they are so much lighter. Potatoes, melons, winter squash, and onions get harvested into bulk bins, using the forks on the tractor.
 - Lift things as few times as possible—Use hand trucks, mini pallets, pallet jacks and full size pallets to their full capacity.
 - Create a loading dock at your wash area that makes sense for your size and scale. We use an extended passenger van for both harvest pickup and deliveries, so we have a lower dock than a larger farm would.
 - Pour lots of level concrete areas to take advantage of hand trucks and pallet jacks.
 - A pallet sized scale recessed flush with the slab saves a tremendous amount of time and back breaking effort.
 - Create a height adjustable wash tank. You spend so much time over a wash tank. Why not invest a bit of money in having it be comfortable, making work more fun and avoiding injury.
 - Have a good system set up so everyone always has a sharp knife at hand. We use a belt sander for major blade work, diamond hones for our pockets to touch them up in the field, and a field ready knife rack with a magnetic back that sticks to the side of our harvest van

By the time I present this talk I hope to have numerous videos of many of these tools and topics posted on our YouTube channel. Check it out to find out more... And if you like what you see, click like and subscribe. <https://www.youtube.com/user/smallfarmsolutions>