No-till at Woven Roots Farm in Tyringham, MA

"My life has become so connected to the natural world, it's hard to make sense of it otherwise."

- Jen Salinetti, Woven Roots Farm

At a Glance

Woven Roots Farm is located in Tyringham, Massachusetts on five acres of land. Owner and farmer Jen Salinetti has created a sustainable and productive operation established by 14 years of no-till farming. Woven Roots is going above and beyond by continuously improving practices, extending the growing season, and finding environmental solutions through farming.

Farm

Jen Salinetti and her husband came to their 5-acre land in Tyringham, Massachusetts just over 5 years ago. Before they even began living there, they started farming there, bringing their 18 years of prior farming experience with them. Their practices have been completely no-till for the last 14 years. This was initially done because they wanted to get high quality crops and the biggest yield possible from their small plot of land. The farm is entirely organic, focusing on using regenerative practices and only selling within a 15-mile radius.

No till

Jen and her husband decided no-till was the way to go for a few reasons. In the early years, they felt that they were doing a disservice to the soil by tilling every year. They would build a beautiful soil structure during the season only to tear it apart again. They also found the practice of tilling environmentally unsustainable and they did not want to rely on petroleum if they were going to make farming a lifestyle.

They were initially working on only one acre of land, so more conventional methods of farming were not practical for the yield they needed to subsist. They saw it necessary to make the switch to no-till for economic stability. They first started no-till in the greenhouses, partly because they couldn't get a rototiller in there in the first place, but also because they were growing year round. One season later, they began converting their beds into permanent beds. They were convinced by the no-till method after seeing a complete switch in soil structure and quality of plants within only a couple of years.

The Process

Woven Roots operates with a permanent bed system. All beds are 30 inches wide with 12-inch aisles. These beds can be planted two to four times a season depending on the crop. Many of the beds are prepped using a similar cardboard method implemented

by other farmers in the area like Julie Rawson at Many Hands or Ricky Baruc at Seeds of Solidarity.

The first step in the process is to eliminate any weeds that may show up in the bed. Often, there are minimal weeds, sometimes none. The fields are solarized early on and that will often take care of weeds by encouraging them to germinate, but stifling their growth after emerging from the soil. Perennial weeds are forked out by hand to destroy the root systems and annual weeds are scuffle-hoed and then used as green manure.

Next, the beds are broadforked to aerate the soil. They broadfork every six inches and are able to complete the job in two passes per bed. At each planting, they will add five gallons of compost to the beds spread over 6-8 linear feet. They will then add soil amendments when necessary. They will use organic alfalfa or crab and lobster shells, which they sprinkle over the bed and incorporate with an iron rake.

Transplanted crops go in right after the beds have been prepped. About 70% of Woven Roots' crops are transplanted, while 30% are direct seeded. The direct seeded crops (carrots, turnips, radishes, salad mix, arugula, baby kale) require a little extra set up beyond the above-described process. After prepping, the area is stale bedded for 10-14 days. During this period, they will leave the beds exposed to the elements and sometimes water the soil to encourage weed germination then flame weed for those that have come up. They plant using a 6-row seeder and for crops like carrots, will plant up to 12 rows in a single bed.

Solarizing

Solarizing is not only a method of weed control, but also a season extension practice. Solarizing is done by laying down previous greenhouse plastic over the beds before the season would normally start. They are pulled down as tight as possible and reinforced with stones or sandbags over beds with exposed soil. Jen warns that if this is done over beds completely covered in snow, the plastic will insulate the snow and fail to heat the soil below. Over a week, or sometimes a few days, the soil temperature will go up enough that planting can begin.

Cover crops

Woven Roots has a mixed history with cover crops and often struggle with finding them useful. Jen says that they are tough to manage in a perennial system that doesn't till. She relies on her pathways to maintain erosion control. Sometimes she will use winter rye in the bigger pathways; even though it will burn out at some point during the summer, it is still maintaining a stabilized root system.

Furthermore, the season extension often does not allow enough time to establish a cover crop as she is harvesting as late as December. As a result, she uses quicker annual cover crops like buckwheat and oats, but often find that living mulches such as these take too many nutrients away from the crops

Season extension

Jen has mastered season extension. There will be crops on the field until early-mid December. She says it has a lot to do with being meticulous about timing for direct seeding and transplants being the right size when they go in. Toward the end of the season, she will set up quick hoops and a floating row cover (Reemay or Agribon) over the beds, sometimes double-layering or using solarizing greenhouse plastic in the last stretch of the season.

She will also over winter some crops to get an early start in the spring like lettuce or onions and use solarizing methods to get to the soil before it reaches a natural warm temperature. While the fields lay dormant, Woven Roots is still producing vegetables in the greenhouse. The greenhouses are active year round without supplemental heat. Jen says that as long as it stays sunny, the greenhouse will be warm enough to continue growing.

Soil amendments

Woven Roots is dependent on compost to give them a boost during planting and bed preparation. Beyond compost, they are not often adding amendments to the soil, but rather engaging in practices that promote and regulate the nutritional quality of the soil. The first of these methods is crop rotation. Woven Roots practices a crop rotation that ensures a single family of crops will not be planted in the same space until four seasons later. This practice allows the soil to retain certain nutrients that repetitive plantings of the same type of crop may exhaust.

Woven Roots also makes heavy use of mulching. Mulching is a common practice in no-till operations as it serves many functions like suppressing weeds, keeping soil covered, retaining moisture, and improving soil fertility.

Leaves are the preferred material for mulching at Woven Roots. As long as they are available, leaves can make ideal mulching to avoid importing other materials. Jen says that she has also tried using some living mulches like buckwheat and oats but has had mixed results. Living mulches tend to be more labor intensive and take nutrients away from the crops. When leaves are unavailable and living mulches are not ideal, Jen prefers to use woodchips. She uses woodchips that have been decomposing for about two years. This way, a vast array of microbial activity is established in the woodchips by the time they are applied as mulch, supplementing the nutritional value of the soil.

Weeds

Weeds proved to be the most difficult challenge on Woven Roots Farm in the early days of no-till production, but Jen has since fine tuned it into a system she is confident about. When she opens up a new space, she is aggressive about getting perennial weeds out. This is done by manual forking for the first few years. Being aggressive early on has allowed the farm to reduce their perennial weeds to next to nothing. Annual weeds are a more consistent burden. The annual weeds grow until they are less than three inches high, before they flower or seed, and then they are turned in as green manure using the methods described in the “Process” section. Finally, with no-till, Jen is reducing her weed populations by not continuously stirring up dormant weed seeds.

Why no-till?

No-till has had a profound impact on Jen, as well as others who have been in and around Woven Roots Farm. Jen identifies an urgency for resilient farming practices like no-till as environmental concerns like climate change and peak oil become increasingly problematic. In regards to the carbon cycle, no-till can help sequester carbon while providing food whereas other petroleum-dependent practices exacerbate atmospheric carbon dioxide. She says, "(no-till) has allowed us to build our soil fertility and sequester carbon all in the same breath." At their scale, no-till requires minimal overhead and the practices can sustain themselves as long as there are able bodies available. By relying on manual labor, Woven Roots is replacing the tractor with jobs for community members.

Jen also emphasizes that no-till can be a solution for access to land. What Woven Roots is producing on five acres is closer to what a conventional farm would be producing on 15-18 acres of land.

When asked why she thinks others should turn to no-till, Jen says, "I feel like no-till farming provides an opportunity to live in deeper synchronicity with the natural world, it enables us to be working with our environmental rather than against or seemingly above it. It's such a gift to be able to see this type of symbiotic relationship is all around us... We have this endless opportunity to be tapping into and connecting to a greater network of allies. By choosing to no-till farm we are essentially being willing to ask for support and to engage in a greater connection to the earth. In many ways I didn't see that before I was no-till farming... it carries over into all areas of my life and extends out to my community, whether it be through example, what they're seeing in the field, what they're tasting in their mouth, what they're feeling by being on this land, it's something that's tangible and I love being able to share that with people. I feel like I have become a better person, a better citizen, a better family member, community member, through this learning from the land and these no-till farming practices."

Results

Jen is consistently seeing higher yields, happier crops, and amazing tasting food. She can get into the fields after significant rain events while other farmers around her cannot, and she feels her practices allow them to be more resilient to weather and to environmental obstacles, especially as climate change becomes more dramatic.

Advice/important info

For those beginning in no-till, Jen encourages seeking education and consultation and bearing witness to a successful operation. If necessary, one can break up the transition over a period of a few years like she did. This helps to measure progress and to be able to see things changing. Jen recommends looking toward perennial crops, they diversify the soil structure so that there are less avenues of erosion. Overall, be willing to experiment, Jen says, "if done properly, once the choice is made, there's a total consciousness shift that happens, there's no turning back."