Year-round greens production at Kilpatrick Family Farm

Michael Kilpatrick
Kilpatrick Family Farm
Michael@kilpatrickfamilyfarm.com
Or 518-744-5448

Kilpatrick Family Farm was a mixed vegetable, fruit and poultry farm located in Middle Granville, NY, zone 4b, that operated from 2003- 2015.. The majority of our sales were through a 200 member CSA, up to 4 farmers markets in Saratoga Springs and Glens Falls, NY, as well as limited wholesale accounts. The farm was approximately 500 acres of owned, rented and leased land, 50 tillable acres, 100 pastured acres, and the balance woodlot and scrub. We planted between 12-14 acres of vegetables and fruit every year.

Greens have been an important part of what we grew at KFF. They appraised approximately 1/3rd of our total sales and drove our winter markets. People showed up for our greens and bought other crops.

Our rotation for greens was tough because of the amount we grew in relation to our land base. Also, with brassicas being a significant portion of our greens production, it was hard to keep those separated. We ended up using greens, which for us were baby kale, spinach, arugula, lettuce mix, radishes, choi's and Asian greens as one block in our rotation. It ended up working out for us on the timing and soil prep. We tried to give a minimum 4-6 weeks before planting greens in previously cropped areas. That gave us plenty of time for plant residue to break down.

Our field prep for greens was as follows: spread compost, chisel, and rototill the sections about 2-3 weeks before we wanted to plant. About a week later we'd come through and spread fertilizer (Kreher's chicken compost or peanut meal depending on what the soil tests showed) and use our bedmaker/stalebedder to make up beds. A few days before we wanted to seed, we came through again and refreshed the beds, killing more weeds with our bedmaker/stalebedder.

Our field seeding was done with a Jang 5 row seeder, rows set 9 " apart. For our winter greenhouse beds, we would double seed the beds, making a second pass so our rows were 4.5 inches apart. For transplanting, our stalebedder/bedformer had a rolling basket in the back which had markers on it. We would then plant based off those lines. Many of our greens were direct seeded due to the density and culture they desire, although we still transplanted lettuce, choi's, and some spinach by hand. A video about how we transplant in our tunnels is here:
https://www.youtube.com/watch?v=Bn1Y2HQiwdo

Cultivation was done with a basket weeder and lely tine weeder. We got to the point that we had an employee who every Monday (or next dry day) would cultivate the entire farm. We had a Super C set up with belly baskets and a lely time weeder in the back which we hinged so we could still run our wheel cleaners.

Crop Highlights

Our lettuce production morphed from direct seeded baby leaf to a complete Salanova type mix over our farming career. We found that our customers liked the increased crunch as well as the shelf life being better. We grew our mix 5 rows 9" apart, with 10" between plants in row. Cultivation was done with baskets and lely tine weeder. We harvested each plant twice or more, doing a dome cut to keep the center growing tip alive. We still grew direct seeded baby leaf lettuce in the winter, as the salanova types, while they would survive, didn't give the yield or reliability needed. Our focus on winter and summer varieties was disease resistance and cold hardiness. A favorite winter variety is is Lettony, as the yield, disease resistance, and cold hardiness is hard to beat.

Spinach was always a huge crop for us. We prefered to direct seed, but also transplanted in the spring and into our tunnels when a preceding crop didn't give us enough time to get seeds in the ground. Spinach can be tricky, but we found that consistent watering, raised beds so that it doesn't drown, and silty soils all played a big role in producing a great crop and achieving a good stand. We grew baby, large leaf, and bunching spinach, utilizing different varieties for each. Because of the rapidly changing spinach seed market, it was hard to give varietal recommendations, as varieties sometimes would only be around for a few years. That said, Space and Tyee are great older varieties, and Pigeon (for leaf) and Emperor (for bunching), were two of our new favorites. We felt that even with the increased cost of seed, it was worth planting the newer varieties for baby spinach for increased uniformity, disease resistance, and vigor.

We grew arugula year-round, direct seeding it 5 rows, 9" apart, 30-45 seeds/row ft. We used insect netting and Pyganic to manage flea beetles. Nothing beats a tight rowcover applied soon after seeding. During the summer, we planted once a week, waited 4 days, would blind cultivate lightly with the baskets, and then cover, removing only for harvest. For winter we doubled the rows up to 4.5" apart, planting 3-5 plantings over the winter to keep a good succession. We found that some of the wilder varieties had better cold hardiness, but lack the yield of newer varieties.

Kale and chard were grown very similarly in our system. For outdoor production, we grew on biotello on raised beds with living or straw mulch between. We planted several successions during the summer as well as a large fall planting to store. We also experimented with growing baby kale during the summer with the culture similar to Arugula. It worked, but because it grew so fast under covers, it was hard to keep a good stand for harvesting. We tried to grow both baby and large leaf kale during the winter. Baby kale doesn't grow well during the deep winter, but does okay in the February-March slot, being able to recut the same beds every 10-14 days. Our two favorite varieties in the winter for full size bunched or bagged kale were Western Front and Siberian. For chard, we used Fordhook giant with just enough bright lights to make the bunches pretty.

Asian greens and Boc choi were usually grown only in the fall through spring for us. We transplanted, then 5 rows on the bed, looking to bunch them 2-3 per bunch. During the winter, we interplanted them with chard and kale as they grew faster while the chard and kale need to be established in the fall but wouldn't grow very fast. During the winter, we harvest individual leaves, always leaving a center rosette of leaves to keep the plant growing. As the light changed, and spring approached, they would bolt and be ripped out, leaving the chard and kale to fill out the bed and be harvested.

Specialty greens

We tried every year to grow a good crop of mache. It's always disappointing until we ate the little that we could grow, what flavor! Our best success was seeding it tight (rows 4" apart) into a late hoophouse and harvesting it in late March, right before it bolts. The financial viability for us is just not there, although it has been our favorite winter green.

We have also tried claytonia, cress, and sorrel. For us, of the three, Sorrel was the only green worth growing in the greenhouse, like kale and chard, it really just sits there all winter and then takes off in early March providing 8-10 weeks of weekly cuttings.

Tips for Overwintered and Storage greens.

We are still learning a lot about overwintering greens. So far, we have successfully overwintered lettuce, spinach, scallions, kale, arugula, asian greens, and onions. Several keys for success: 1. raised, sandy or well-drained beds. 2. proper covers. Most times we were just using row covers but sometimes hoops and mini-tunnels, especially for lettuce. 3. it is key to achieve plants small enough to winter well but with a big enough root system not to heave out of the soil. To find out about our 2014-15 overwintered spinach trial, go to http://michael-kilpatrick.com/what-we-learned-from-our-overwintering-spinach-trial/ .

For storage greens, we would plant lettuce, spinach, boc choi, chinese cabbage, kale, celery and mache as late as we could and still get full size, healthy plants and then harvest and store them right before the weather turned. Depending on the green, we could get as much as 3 months of storage before they turned yellow or went bad. Greens that are planted this late and are subjected to multiple frosts tend to go into hibernation and concentrate sugars in their leaves therefore lasting much longer than a summer planting. The whole life cycle and plant physiology slowes. Storing greens allowed us to bunch up our greenhouse greens and therefore have a higher production of greens year round. A big part of achieving long storage life is excellent plant health and no cold damage going into storage. Excellent storage conditions, of course, is key. One of our best units for storage ended up being an old insulated truck box with a little space heater to keep it at 34 degrees. We would throw water on the floor for high humidity. The greens were stored in lidded rubbermaid totes. It is important that the greens are dry going into storage. We had problems with storing in 20 bushel bins (not enough air flow in middle) as well as greens that were too wet going into storage.

Harvest and packing of greens.

Most of our greens were hand harvested into rubbermaid tubs. For large wholesale orders of spinach, baby kale, and arugula, we would use the quick greens harvester. Greens were brought back to the packing house and submerged in our bubble washer which hydro-cooled, mixed, and cleaned the greens. They were then spun in our spinner, bagged and sent to the cooler. See video about spinning https://youtu.be/vFcbs9p3gqY, and video of full line https://youtu.be/10hgeQWCtkw.

Most of our greens sales are direct to consumer in .35 lb or .26 lb bags. We use a vented liner from Bunzl that costs us about 3 cents each. For a while, when were were selling retail at coops, we used a large clamshell but the cost was prohibitive. We ended up switching those customers to vented ziplock type bags which cost 7 cents each. We used a pre-printed sheet label on those bags for a good marketing presence.