Steve Groff
Cedar Meadow Farm, Holtwood, PA
steve@ceadermeadowfarm.com
www.cedarmeadowfarm.com

I have been no-tilling pumpkins for 12 years now. It was a natural transition since I had been no-tilling most of my other crops before. A significant number of growers have been trying it as well with some quite successful and others disappointed. The driving force behind no-till pumpkins seems to be cleaner fruit that is a result of the pumpkins laying on crop residue or a cover crop.

How the System Works

The foundation of this system is the establishment of a cover crop in the fall. My favorite for no-till pumpkins is a mix of hairy vetch (25 lbs.) and rye (30 lbs.) I credit rye/vetch giving #40-50lb. of N. Straight vetch will supply #75lb. of N but the vetch residue decomposes too quickly to keep the pumpkins clean. Vetch seed is expensive so I grow my own and sell any excess. Rye alone works well but you have to use more N to grow both the rye and the pumpkins. No-tilling into previous crop residues has been successful but you lose some of the advantages of a cover.

I control the cover crop mechanically with a modified 10-foot Buffalo Rolling Stalk Chopper and Glyphosate. The stalk chopper has two rows of rollers, four in front and four in back, with eight 23-inch blades per roller. I added parallel linkage so each roller floats independently. The turning rollers crimp the cover and push it down. It can be run at 8-10 miles per hour, so it's fast and economical.
Typically I will spray ½ -1 pt of Glyphosate into the standing rye and then roll 2 days later. **It is important to roll the cover before wind blows it in various directions so it is laid parallel to the direction of planting.** I always roll soon after the rye is 4 feet tall unless the cover is thin and will not blow down. After pumpkin harvest, I use the rolling stalk chopper to disperse the remaining pumpkins.

Soon after planting I spray Strategy and then pray for rain. If grasses break though Select is used to control them. Sandea will take care of pigweed but not lambs quarter. I have sprayed Sandea before crop emergence and then it will give a little lambs quarter control. Sandea does hold the pumpkins back at least a week even if used pre-emerge.

I've successfully eliminated all herbicides when I have a good thick mulch cover. This system does have potential for organic growers when a heavy cover is achieved.

I use a customized Kinze no till planter with Monosem row units to direct seed the pumpkins. This machine has Rawson coulters, Yetter parallel linkage, Martin spading closing wheels, and foam markers. I plant in 90” rows. The leading 13 wave 1” coulter is set on the row to cut 4” deep. This gives a nice clean cut thru the residue. Depending on conditions I set the row cleaners to just take out a bit of residue but not a whole lot. I don’t want to see much soil showing on the row. I like to plant the seeds 1-1.5” deep in the soil. I've also customized an RJ Equipment carousel no-till transplanter for no-till transplanting of pumpkin seedlings into killed cover crops.

This transplanter has a spring-loaded 20-inch, turbo coulter, followed by a double-disk opener and a short shoe to place the transplant in. Angled press wheels tuck the soil firmly around the plant. The package leaves virtually no soil showing after the crop is planted, giving good full coverage mulch for the whole season.

Fertilizer management evolves, as you have become more committed to the use of no-till, cover crops and the overall concept of sustainable ag. Any synthetic N I use is mainly ammonium sulfate. I need the sulfur it supplies, as well as its low volatility. I side-dress by broadcasting 40 - 80 lbs. of dry N (depending on contribution of cover) 3 weeks after planting. I do some foliar feeding as well.

Soil Compaction is to be avoided at all costs! However, once you've no-tilled for several years the soil becomes noticeably less susceptible to compaction. Cover crops are key in building soil structure. I'm real fussy about when lime and manure trucks can get on my fields. If you ever need to alleviate compaction, do so with as little surface disturbance as possible.

Controlling perennial weeds can be a challenge but I have found that with intensive crop rotation and occasional spot spraying, they can be managed effectively. Don't count on a cover crop to eliminate thistles, bindweed, hemp dogbane, etc.

Common mistakes

Allowing the cover crop to lodge before rolling. A cover such as rye is nearly impossible to plant into if the stems are lying across the pumpkin row.

Not enough N when rye is grown as a cover crop. Rye takes out a lot of N and releases very little during the growing season.

Improper seed to soil contact due to lack of proper planting equipment. You need to do whatever it takes to get the seed in the ground.

Pumpkins are a lot cleaner in this system because the soil doesn't splash up on them when it rains. I have found that this is the main selling point of no-tilling pumpkins. Over ½ of pumpkin acreage in Lancaster County is now no-tilled.