

This Amish farmer requested not to use his name.

No-Till Sweet Corn and Broccoli Case Study- Part 1

Nestled in the rolling River Hills of southern Lancaster County near Holtwood, PA is a produce operation managed by a young energetic farmer who desires to enhance his soils health by utilizing the benefits of cover crops. Increased organic matter, reduced compaction and forage for his flock of 20 sheep are short and long term goals that strategic cover crop management can achieve. About half of his 70 acre farm is dedicated to vegetable production which includes sweet corn, broccoli, watermelons, and high tunnel tomatoes. The balance is tobacco, corn silage, and hay. This diversity of crops is a great foundation to build a more resilient soil when coupled with strategic cover crop management. It also provides multiple windows of opportunity to plant cover crops from mid-summer on.

Mid-Summer

Early sweet corn is usually finished by the middle of July and is scheduled to be planted to broccoli the end of August. This 5 week window allows for sunn hemp- a tropical nitrogen fixing legume- to be established at 30lbs per acre immediately after the last ears of sweet corn are pulled. If need be, existing weeds will be controlled with a burndown herbicide and then the cover crop will be no-till planted directly into the sweet corn residue. Sunn hemp will provide intermediary weed control as it is a very fast growing cover crop that can grow 4 feet tall by the time the broccoli is ready to plant. It loves the summer heat and can withstand dryer soils as well as provide up to 40lbs of nitrogen to the succeeding broccoli crop. The farmer plans to terminate the sunn hemp by rolling or crimping immediately before transplanting the broccoli with a custom built no till tobacco planter. The rolled cover crop should provide subsequent weed control in the broccoli and may provide nearly all the fertility needed for the fall cash crop. Sunn hemp is also known for suppressing nematodes and is not to be confused with its more famous cousin, Industrial Hemp, which has been in the news recently.

Another popular use for sunn hemp is for grazing- especially for sheep and goats. There have been a substantial amount of testing done that indicates this crop is a natural parasitic. This farmer hopes to take advantage of this aspect as well as provide a summer feed for his 20 sheep. About an acre of sunn hemp, mixed with a few pounds of sorghum sudan grass to provide a more balanced feed, will be planted for this purpose.

It is important to note that sunn hemp can only be planted up to 2 months before the average first killing frost date and will be terminated when temperatures fall to the high 20's.

Late-Summer

Using a fibrous rooted cover crop like cereal rye or triticale can present a challenge for vegetable growers that use raised beds with plastic. The sod-like effect the cover crop roots cause, makes it difficult to get the soil in an ideal condition to create nice beds for plastic culture. Fields that are scheduled for these early crops in the spring of 2017 will be planted to cover crop radishes and/or oats which are expected to winter kill and will better accommodate making nice raised beds. Cover crop

radishes will also be planted where ever possible during the month of September for fields intended for corn silage or early sweet corn the next year. This will greatly help compaction issues and aid in a transition to less or no tillage with these crops next year.

Effective management of cover crops requires identifying what you want to accomplish, which cover crops are best suited for the planting window, and a desire to learn and try a few ideas on a scale you are comfortable with. Attending local field days and chatting with successful neighboring farmers go a long way to avoid common mistakes. Cover cropping is a time tested simple concept but fairly complex in maximizing its full potential. Farmers who do a little homework will undoubtedly be rewarded with enhanced soil health and a better bottom line.