

Strip Tillage

Strip-tillage system is in between a no-till and a conventional tillage system. The strips are created in either the spring or the fall to place fertilizers and the seed; they may range in size, however, they are typically about six inches wide, or about 1/3 of the row width, and between four to eight inches deep. When making a pass over the fields with this tillage equipment, residue-free strips are created, which aids in the warming and drying of the soil prior to planting. If the strips are created under suitable conditions in the fall, they will increase the early spring soil moisture evaporation and increase soil temperature more readily than the surrounding soils; this allows the producer to get into the fields earlier in the spring. It is recommended fertilizer be incorporated when the strips are being created because it will be closer to the seed and will benefit the plant by being more available to it.

There are some benefits of using a strip tillage system as compared to conventional tillage. A few of the advantages are:

- Reduced erosion
- Increased water infiltration
- Increased soil temperatures
- Improved organic matter content of the soil
- Increased available moisture throughout growing season
- Reduce CO₂ losses from the soil
- Seed placement closer to fertilizer
- Better germination rates
- Conserve energy and time/labor

With the advantages of using a strip tillage system there comes the disadvantages. If the ground is too dry the strips could crust, or dry out too much; possibly erode, increase losses of nitrogen and the pre-planting operation could get costly with the special equipment needed to create the strips. Looking at the lists, the benefits of using a strip-till outweigh the disadvantages.

There are a couple ways to implement strip tillage systems. The first way to use strip tillage is to create the strips in the fall while incorporating phosphorus and potassium into the strips. In the spring, planting is done using Global Positioning System (GPS) technology in order to plant directly into the strips that were previously created. Doing this type of strip till splits up the workload of the producer; he can concentrate on planting in the spring and not having to worry about making the strips beforehand. Also, if it is a wet fall and tillage cannot be done, then there is a little room for doing it before planting, which is another common way. Making one-pass across the field is the second option of strip tilling. The strips are typically made right in front of the planter in the spring and then seeds are placed directly into those strips. Specifically the one-pass system may be challenging if the weather is very wet in the spring time because it will not be dried out enough to get into the fields to make the strips and plant without risking compaction of the soil. Depending on the situation you could do a little of both, making some strips in the fall and completing the rest in the spring ahead of the planter; just be prepared to make changes to your system based on weather conditions.

Making the transition to a strip-till system is going to take time, patience and commitment. At first yields may decrease because of the reduced tillage, but soil quality will be improved in the next few years. On average it takes about five years to build up soil organic matter and to see a difference in yields. Commitment is going to be the main factor in sticking with the change. The first year of implementing strip-tillage, it's recommended not to put the whole farm in just to make sure it suits your operation; also, to custom hire the crop work done, so you can see different equipment used. If you would decide to go with the tillage change then it would be beneficial to purchase new equipment designed for strip-till, unless you do not have very many acres to justify purchasing new equipment, then have it custom done. Equipment is going to be the big cost in making the transition, so it is going to be important to make sure that you are happy making the switch.

"Strip-Till: Iowa Job Sheet." *Iowa NRCS*. Web. 25 May 2010.

<<http://www.ia.nrcs.usda.gov/news/brochures/StriptillJobsheet.html>>.