

## **No-Till Notes:**

### **Crop Rotations and Weed Control in No Till Farming Systems**

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We have looked at several cultural practices to control weeds in a no till farming system. Up to this point concerning weed control in a no till farming system we have looked at the soil "weed bank" and how we control this weed germination zone by stopping tillage operations and using minimum disturbance planting equipment so we don't disturb the top layer of soil any more than necessary to plant the crop. We also discussed the importance of achieving a rapid crop canopy to shade the soil surface and suppress weed seed germination. Residue management is also an important consideration in overall weed control. The types of residue and the amount of residue left in the field will determine how well residue can assist in weed control in the following crop. I have intentionally left the topic of crop rotations in controlling weeds till the end of my discussion on weed control in no till farming. There are many considerations that go into selecting crop rotations for your farming operation and I will devote some additional articles in covering this very important aspect of no till farming. Proper crop rotations will affect not only weed population control, but also soil quality, wind and water erosion, microbial activity in the soil, and in the end your bottom line economically. Give careful consideration to your crop rotations and the overall implications this management decision will have on your farming operation.

Crop rotations play an important role in weed control in no till farming. A well designed crop rotation will reduce a weed's ability to become established consistently in your fields. Weeds are opportunistic! They will lay in the soil until the opportunity presents itself for them to germinate. If you consistently follow a rotation which allows a weed the opportunity, they will thrive in your fields until you change your cropping rotation. A lot of times producers will rely on the technology of herbicides to try to fix their problem weed population rather than look at a cultural practice change that will eliminate the problem from their farming system.

An example would be cheat grass in winter wheat production. Cheat grass can be a real competitor with winter wheat for moisture and nutrients. In conventional wheat fallow rotation it is difficult at best to keep cheat grass out of the fields once it has become established. The reason for this is cheat grass has the same germination and growth pattern as the winter wheat crop. As a winter wheat producer, as long as you consistently plant winter wheat every other year, you are providing the opportunity for the cheat grass to establish itself and thrive in your winter wheat fields. There are herbicides designed to help control this problem weed, but they are expensive and not always effective in their control.

Crop rotations can help control the cheat grass by eliminating the opportunity for the weed to become established. Research has shown that a 2 year rotation away from winter wheat will control 87% of the viable weed seed in the soil. By planting 2 spring

crops and controlling the cheat grass with a herbicide such as glyphosphate you don't allow the cheat grass to go to seed for a few years. A 3rd year of rotation will be even more beneficial. When it comes time to plant winter wheat back into your rotation, you will have the cheat grass weed under control where it won't be so detrimental to winter wheat production.

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