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Press Release

No Till Notes

Date: For the week of January 11, 2009

No Till Notes: No Till Corn
By Mark Watson, Panhandle No Till Educator

Adopting corn to a no till crop production system is relatively easy and has been used widely across the United States. Numerous crop rotations have corn planted directly into the previous residue. Planting corn following corn, soybeans, wheat, alfalfa, edible beans, and other crops has all been done successfully. There are a few tricks to the trade which help insure a successful crop of no till corn.

I'll start off by looking at some past no till corn we have produced on our farm. As with other crops, water use under irrigation in a no till crop production system is significantly reduced when planting corn into a no till system. This past year we used between seven-and-a-half and eight inches of water to produce corn.

The amount of residue from the previous crop, the soil type which you have on your farm and rainfall will determine the amount of water required during a given year. This year on our sandier soils we followed winter wheat with corn. On our heavier silt loam soil we followed edible beans with corn. The water use on the corn crop was similar because the sandier soils had more residues on the soil surface to offset the lack of moisture holding capacity in the sandier soil. Our silt loam soils will store a few additional inches of moisture in a four-foot soil.

Our yields varied from 120 bushels per acre on our heavier silt loam soils to 173 bushels per acre on the sandier soil. We had significant yield loss to hail

and wind damage on the silt loam soil farm. We had some yield loss on the sandier soils due to wind damage. After visiting with some other farmers around our county, overall corn yields were fairly low this growing season. Last year the corn yields around the county were significantly higher, with over 200 bushels per acre on our farm. This year just wasn't a very good corn year and the yields reflected that.

An interesting side note on the sandier soil is we shared a circle of corn with a half circle of edible beans with a well pumping only 400 gallons per minute. With the low capacity well we were able to water about .65 inch every eight days. This forced the corn to use sub-soil moisture down to four feet or more for its water needs during the growing season. I found it interesting that the corn crop and yield didn't seem to suffer during a relatively dry year where we were three to four inches below normal in rainfall until the middle of August. I think our no till crop production system allowed us to produce a decent corn crop even with this low amount of water applied during the growing season.

Just a reminder to our southern Panhandle producers, I will be holding my winter no till meetings in Chappell at the Chappell Fire Hall on January 14 from 9 a.m. to noon; in Sidney at the WNCC Sidney Campus on January 14 from 1:30 to 4:00 p.m.; and in Kimball at the Kimball County Fairgrounds on January 15 from 9 a.m. to noon. For those who really want the best in No Till education, consider attending the 13th annual No-till On The Plains Winter Conference January 27-28, 2009 at the Bicentennial Center, Salina, KS. Registration and event details are available at http://www.notill.org.

No Till Notes: No Till Corn – Part II
By Mark Watson, Panhandle No Till Educator

Our typical crop rotation is wheat, corn, edible beans in our no till crop production system. Following winter wheat allows us to capture and store a significant amount of soil moisture during this relatively long fallow period between the wheat crop and following corn crop. We almost always have a full soil moisture profile to plant our corn crop into. The residue from the previous winter wheat crop also allows us to store soil moisture and reduce soil moisture evaporation from the soil surface. This is the reason we can get by with relatively little water use in our corn crop and still produce pretty good corn yields.

The flip side of this rotation is the winter wheat crop following the edible beans. The winter wheat is planted into low residue stubble, the edible beans. Following the edible beans with wheat there is no fallow period, so we typically have to irrigate the crop to get it established. There is usually insufficient moisture during the dormant phase of the winter wheat, so we seldom have a total recharge of the sub-soil moisture in our four-foot soil profile. The winter wheat crop breaks dormancy and starts using significant moisture early in the following growing season. Without significant spring moisture we never get a full soil profile with our winter wheat crop. This leads to more irrigation requirements to produce a good crop of winter wheat.

On average we have found that our winter wheat crop under irrigation often requires almost as much irrigation as a corn crop will require. The reason for this is a short fallow period which doesn't allow a full soil moisture profile to develop before the wheat crop starts demanding significant moisture and low residue cover which allows more soil moisture evaporation from the soil surface. Our corn crop is planted into a soil moisture profile that is full, with a heavy amount of residue on the soil surface with the irrigated wheat stubble. This difference in soil

moisture stored and reduced soil moisture evaporation evens out the water needs comparing winter wheat to corn in our no till crop production system.

In our no till crop production system winter wheat isn't necessarily the low water use crop. Our edible beans typically require the least amount of irrigation. The edible beans have a long fallow period between corn harvest and planting the beans to recharge subsoil moisture, a fairly high amount of corn residue on the soil surface, and a fairly short growing season. Our irrigation requirements for edible beans are usually one third to one half of what is required for wheat and corn production.

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No Till Notes: No Till Corn – Part III
By Mark Watson, Panhandle No Till Educator

Producing corn in a no till crop production system has been done successfully for quite some time across many different growing regions in the U.S. On our farm we have learned over the years some planting tips that help insure a successful crop.

Paul Jasa, UNL extension engineer and no till crop production specialist has presented numerous talks around the Panhandle. Paul always emphasizes uniformity in planting when it comes to producing no till corn. Producers need to look at uniform residue distribution during the previous crop's harvest which results in uniform soil and moisture conditions throughout the field at planting time. This leads to uniform crop emergence. Paul has determined through his research that a uniform stand with even emergence is critical when it comes to crop performance and yield.

Consistent seed placement is also very important when it comes to crop emergence. Having enough weight on the planter to eliminate planting units from riding up and over residue is important to consistent planting depth. The planting units need enough weight and down-pressure so the opening discs can slice through the residue rather than ride up on top the residue.

Corn seed needs to be placed a minimum of two to two-and-a-half inches deep. The closing wheels on planters are designed to close the seed vee at a depth of two to three inches, so planting shallower will cause poorer seed to soil contact. Seed planted shallow also interferes with root development in the young plants leading to poor crop performance.

Paul's message when planting no till corn is to think uniformity. Uniform residue from the previous harvest will lead to uniform soil temperature and moisture during the planting season. Uniform depth of seed placement will produce uniform crop emergence giving each plant an equal chance at success.