

## **No Till Notes**

Date: For the week of May 31, 2009

### **Spring Planting**

By Mark Watson, Panhandle No Till Educator

With the recent dry weather pattern around the region spring planting has been moving right along. On our farm the peas are up and growing and the corn has emerged. We are just beginning to plant the edible beans, and the planting season will come to an end till fall. It's always a challenge to get the crops in the ground timely. I hope all your plantings have gone well.

I wanted to share with you the results of our soil food web analysis. The analysis is complicated and I don't know exactly how to interpret the results at this point. I'm hoping to develop a better understanding of the soil food web over time.

Earlier in an article I talked about the basics of the soil food web. The bacteria and fungi have a carbon to nitrogen ratio of 30 parts carbon to 6 parts nitrogen, or 30:6. The bacteria and fungi provide the food source for the protozoa and nematodes which are predators of the bacteria and fungi. The protozoa and nematodes have a carbon to nitrogen ratio of 30:1. As the nematodes and protozoa digest the bacteria and fungi, the excess nitrogen is released and is available for plants.

Basically, we had very high numbers of bacteria and fungi for our soil type. Both bacteria and fungi numbers in total amount and active were in the very high range. Our total protozoa numbers were also high. The nematode numbers however were in the low range. This would indicate we need to figure out a way to increase their numbers. Our active and total numbers of fungi to bacteria were very good in that their numbers were close to a 1:1 ratio at 1.66:1. Our active fungi to active bacteria ratio were 1.49:1, which is also good. I've been told the ideal healthy soil has a 1:1 ratio.

What all this means is the soil food web analysis indicates there will be between 100-150 lbs. of available nitrogen during the growing season for our irrigated corn crop. To test this we applied a full rate of nitrogen fertilizer to ½ the field according to our soil sample, and the other ½ the field we applied a ½ rate. We will tissue sample during the growing season to determine how the 2 halves of the field compare.

This should be an interesting test of the soil food web analysis. My thinking is we may be able to use soil samples to determine nitrogen availability in the soil, and the soil food web to determine potential availability during the growing season and use the two samples to determine our nitrogen fertilization requirements for our crops.

I have scheduled a field day for June 15, 2009 at 9:00am at the Barney and Jerame Steger farm. The farm is located in north of Chappell, Ne. Directions from town are to go to the east edge of Chappell, go north on Road 167 to Road 26. East on 26 to road 171, then north 1/2 mile.