

From the Ground Up



Soil Solutions, LLC · 303 Lamp Kastner Drive · Holstein, IA 51025

August 2008

Will Late Planted Corn and Soybeans Mature Before a Killing Frost?

Corn hybrid maturity is based on heat unit accumulation from emergence to black layer. Typical hybrids in this part of the world need 2400 to 2800 heat units to mature, depending upon the particular hybrid. In a year like this when planting dates were delayed there is some worry among producers that corn may not mature before the first killing frost. The good news is that recent results from studies evaluating hybrid response to delayed planting dates would indicate that corn has the ability to adjust their development in response to a shorter growing season. Corn planted the last week of May or later senses that it has been planted later and speeds up maturity, especially once pollination occurs. This would suggest that corn does have some sensitivity to daylength as well as heat unit accumulation. A hybrid that is rated as 2700 heat units planted the middle of April will only need 2500 heat units when planted in late May or early June. Since the period of kernel fill is usually shortened most significantly there is less time for the plant to put starch into those kernels. Therefore yield is usually lower. Moisture may be higher depending upon the dry down characteristics of your particular hybrid.

Soybean maturity on the other hand is regulated by day length and to a lesser degree temperature. For this reason a cool fall will not significantly delay maturity of the soybean. The increasing length of nights (dark period) in late August is what signals the soybean plant to begin filling grain. Therefore soybeans will usually mature prior to the first killing frost.

Any management practices that you can use to increase plant health will allow for greater yield in these later planted crops. Since there is a shorter period for putting starch into the kernel you must make the “factory” more productive. By getting the factory producing more sugars you should get more into the kernel during this shortened period. This may include using a fungicide to keep as much leaf area producing photosynthates as possible. It may also include a foliar fertilization during early



Yellow soybeans (to the right of black line) were sprayed with a fungicide and insecticide in early August. They retained their leaves longer, were healthier and yielded greater than 7 bushels better than those that were not sprayed (brown soybeans to left of black line in picture). Harvest date was delayed about 1 week.

kernel development. In soybeans, fungicide applications will keep leaves healthier. This may delay leaf senescence somewhat, but will have a positive impact on yield.

Alfalfa responses to PRO CAL 40

Alfalfa has responded very well to PRO CAL 40 again this summer. To the right is an alfalfa field from Northeast Nebraska that has not received any PRO CAL 40. Notice the yellow area on the hillside. This picture was taken about two weeks after the first cutting. The field below had these same yellow areas on the hillsides in



it last year, but last fall we applied PRO CAL 40 to the field and now you can see that



there are no longer any yellow areas appearing. This picture was taken at the same time as the picture taken above. This field yielded better than two tons per acre on the first cutting. This field is five years old. We have had many of our customers tell us that they are amazed how well their older stands produce after PRO CAL 40 has been applied.

New Seedings Too

However, don't forget to also apply it before a new seeding of alfalfa. Our customers tell us they get better stands when seeding where they apply the PRO CAL 40. If you are considering planting alfalfa this fall now is the time to get PRO CAL 40 applied. We can also apply gypsum and lime together if your soils need both.



Preliminary Infiltration Results are Very Impressive.

As mentioned in our last newsletter we have initiated a study with the University of Nebraska to compare runoff rates from soils treated with PRO CAL 40 and those untreated. Recently while the irrigation system was running across one of the repetitions (see picture to the left) I took pictures of the amount of runoff from each treatment. The runoff from each plot is funneled down to the pipe that then runs into each of these covered holding tanks. Inside the tanks is a bucket. If the runoff volume is larger than the bucket it will run over into the tank. If the first tank gets full the water will run over into the second tank. The following pictures of each treatment were taken within seconds of each other. The picture to the left with the orange bucket shows how much runoff has occurred in the untreated plot to this point. You can see that the bucket is full and nearly a whole additional bucket full has overflowed and collected inside of the tank. The next picture to the left of the blue bucket is from the treatment that received a 1X rate of PRO CAL 40. You can see that the bucket is nearly full, but none has run into the tank. At this point it appears that runoff has been cut in half.



The last picture to the left is from the plot that received a 2X rate of PRO CAL 40. You can see that the bucket is almost half full. At this point it appears that runoff is about 1/4 of that from the untreated plot. This is a significant difference

between the two treatments. This is just results from one replication and one irrigation event, however, it is representative of what other studies have also shown. What can this mean in water efficiency? If you have water going into your soil rather than running off you have a much greater yield potential especially when water becomes limiting. A recent report said that it costs \$1000 each time a producer runs his center pivot around. I'm sure this varies somewhat, but assuming this is correct, by getting better water efficiency, you may limit one or two irrigations per season. This could mean an additional one or two thousand dollars in your pocket. In times where water limitations are being proposed, this could also mean big benefits. What could this mean in less soil erosion and nutrients leaving the field? With increases in costs of plant nutrients this is a major advantage as well.

Soil Solutions, LLC has moved to a New Shop and Office



As of June 1 Soil Solutions has moved their mechanic's shop to Onawa, Iowa. Previously we were renting space in a building in Blair, NE. With this new shop we have more space to get our trucks serviced and to park our trailers, trucks and applicators. It has been a busy summer trying to keep up with the everyday work load plus get the new building retrofitted, but our employees have worked hard and everything is nearly complete. We feel this will increase our efficiency when we get into the busiest time of the year when we are hauling and applying in the field. We also have office space and a conference room for meetings. Our address there is 2120 Pearl Street. It is next to the Pamida Store. If you are in the Onawa area, we welcome you to stop by and say hi.

Website has been Improved!

Check it out!! Go to www.soilsolutions.net. We have recently redone our website and will be updating it on a regular basis so be sure to check it out occasionally to see what is new. Of particular interest may be the "Newsletter" section. We have our past issues of

“From the Ground Up” on the website now in .pdf files for your downloading if you prefer. We will also be adding more pictures of fields where we have applied PRO CAL 40. In addition we have links to many websites and reports that discuss the benefits of gypsum.

Order Today

We have a lot of orders for fall application of PRO CAL 40 on the books already and are getting calls nearly every day for more fall work. Call your retail dealer and get your PRO CAL 40 ordered today or call our salesman, Gene Kenkel at (712) 579-9540 and he will get the connections made for you. We are making every attempt to keep the price of our product down, but with ever escalating fuel prices we anticipate there will be a modest price increase this year. By planning ahead and allowing us to take advantage of back hauls where possible the costs can remain low. Call today and get your order in.

Has your email changed?

Please notify the Soil Solutions office if your email address has changed or is going to change. We will make the corrections in our database so that you won't miss any future newsletters. Also, if you are currently getting this letter by mail please send us your email address to vickie@ruralwaves.us so that we can email this letter to you instead. This all helps in holding down our costs and giving you a more economical product.