From the Ground Up

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Another Study Shows Benefits of Gypsum

Information presented at the American Society of Agronomy meetings this winter demonstrated that gypsum reduced soil erosion from ridge tilled ridges. This research (unpublished) was conducted by the USDA at Manhattan, KS by Hagen, Mamedov, Skidmore and Wagner. They used the following soil surface amendments to compare soil loss: manure, shredded newspaper, PAM, and gypsum. The soil where the test was conducted was a sandy loam soil with low organic matter and aggregation. The comparison was both on the south slope and the north slope. Although wind and rain erosion were not separated the south slope of the ridge probably received more wind erosion than the north slope.

The results showed that both wind and rain erosion was significantly reduced by the addition of the amendments as is shown in the chart below:

	% Reduction in Soil Erosion	
Treatment	North Slope	South Slope
Control	0%	0%
Manure	3%	62%
Manure + Gypsum	42%	61%
PAM + Gypsum	15%	74%
Paper	70%	54%
Paper + Gypsum	87%	90%

PRO CAL 40

Gypsum reduces soil erosion through improved soil structure and better water infiltration. Unfortunately, there was no treatment using just gypsum in this study. Soil Solutions provided the gypsum source for this study so it was PRO CAL 40 that was being used to demonstrate control of erosion.

Alfalfa-Getter Done!!

Once again fields of alfalfa are looking beautiful where the PRO CAL 40 has been applied. It's said that a picture is worth a thousand words so I am going to give you several thousand words below.

This picture above to the left was taken on June 22, 2010. The picture above to the right was taken Sept. 30, 2009 of the same field (slightly different angle). The PRO CAL 40 was applied last October to this field. What a dramatic change!!

The picture above to the left was taken from another field on June 22, 2010. This is the same field as the one on the right; slightly different angle, but if you notice the trees are the same. The picture on the right was taken last fall prior to an application of PRO CAL 40. Notice the alfalfa is stunted and yellow on the hillside. Why wouldn't anyone want to put PRO CAL 40 on their alfalfa?

The picture to the left is taken from alfalfa that was treated with PRO CAL 40. The picture to the right is taken from alfalfa that was untreated. These close up shots reveal the difference in leaf size that many of our customers report when they use PRO CAL 40. Leaf petiole is also longer in length where PRO CAL 40 is used.

PRO CAL 40

Rates of PRO CAL 40 in these fields were 1 ton per acre. There is nothing better looking than an alfalfa field where PRO CAL 40 has been applied. It will "wake up" your alfalfa stands.

Now is the time to give us a call and schedule your application of PRO CAL 40. We can apply between cuttings or shortly after your last cutting this fall.

Soygreen Shows Promise in Soybeans

Several producers in Nebraska have cooperated with Soil Solutions to try Soygreen and the early results look very promising. Soygreen is a new chelated iron product that is applied in furrow or as a foliar application. The treatments shown here are from fields where Soygreen was either applied in furrow or in a band over or near the row.

The picture to the right shows a field near Duncan, NE where Soygreen was applied. The cooperator did not leave a check strip, but you can see the soybeans at the end of the row that did not receive any Soygreen. He applied it at planting with his herbicide band turned 90 degrees so it was parallel with the row. It was applied on the soil surface. The rate of Soygreen was 6 gallons per acre. This is a field that historically has had severe iron chlorosis. So far it looks like a big improvement.

Here is another picture from a field of one of our cooperators from near North Bend, NE where Soygreen was applied on part of the field. The row on the right received Soygreen. The row on the left was untreated. The Soygreen was applied in a band 2 inches to the side of the row on the soil surface. This is not the recommended application method, but was the way the farmer's planter was set up. He used 6 gallons of Soygreen per acre also.

Yield responses in other areas of the country last year showed yield increases in soybeans from 4 bushels to over 20 bushels per acre. We hope to get some yield data this year from Nebraska. If you are interested in still trying this product this year as a foliar on your soybeans which are chlorotic due to high pH soils then give us a call and we can discuss its use.

Call Us if You Want to Know

There are many soybeans this year that have been yellow and stunted due to the wet soils and cool soils. One of the products we applied on our farm this year seems to have helped our soybeans through these stressful conditions. To the left are a couple of pictures from our field. In the top picture, the two rows to the left were untreated. A couple of clues are that it is not a change in variety, no change in tillage and it is not PRO CAL 40. The pH of this soil is 6.5.

In the field to the left the darker soybeans in the foreground were the treated soybeans. They were healthier and darker green in leaf color. We will continue to monitor these through the growing season and compare yields at harvest.. If you are interested in knowing what the difference is give Gene a call at 712-579-9540 and he will let you know.

Wakeup Improves Uptake of Foliar Nutrients

Users of Wakeup this past year have seen the benefits of "nanotechnology" in increasing the uptake and absorption of foliar applied nutrients. Some South Dakota producers last year used slow release nitrogen on their spring wheat and experienced a two bushel increase in yield, but where they used Wakeup with the slow release nitrogen the yield response was 13 bushels per acre. Others have seen this benefit when using foliar micronutrient programs on soybeans and also in several vegetable crops. If you are using a foliar nutrient program on your crops you may want to try Wakeup to enhance your response. Call us at 712-433-0000 if you are interested.

How Healthy are Your Plants?

Below are excerpts from notes by Reginald Destree, organic consultant from Madison, WI. They are good reminders as we move into mid-season and are evaluating our crop status and assessing our fertility, tillage, and crop protection programs.

*Biologically active soil is necessary to have healthy plants. Healthy soil should translate to healthy plants.
*If stress moves into healthy plants, corrections can be made with a foliar spray program to compliment the soil nutrient program.
*Three factors known to determine if a plant is healthy is plant sap pH, Brix and Electrical Conductivity. These can all be done in the field.
##Sap pH—Reading should be between 6.2 and 6.4. If pH is low (< 5.8) the plant is short in calcium, potassium, sodium or magnesium. If the pH is high (> 6.6) the plant is low in nitrate nitrogen, phosphates, sulfates or trace minerals.
##BRIX—This test shows the dissolved solids in the plant. The reading should be between 13 and 20. The higher the dissolved solids, the healthier the plant.
##Electric Conductivity—This test indicates the level of simple ion uptake into the plant sap. The reading should be between 12,000 and 16,000. A high energy field in the plant is a natural defense for insects and plant pathogens. With low BRIX and low sap EC, elements are not being made available to the plant. If sap EC is too high, elements or ions are not being "complexed" and ions such as nitrate nitrogen may be at excessive levels.

The table below shows how soybean aphid levels correlated to SAP pH and BRIX levels in Wisconsin, Illinois and Michigan.

SAP pH	BRIX	Aphid count
6.2	9.5	0-10 aphids
5.8	8.0	50-100 aphids
5.6		200-500 aphids
5.4	5.8	200-3500 aphids
5.3	5.7	Over 3500 aphids

The relationship to the levels of aphids appears to be plant health.

*You may also want to do leaf tests by a commercial laboratory to determine nutrient status of the plants. Be sure to inform the laboratory of the stage of growth of the crop when you submit the samples.

*Using these testing parameters will allow you to foliar the nutrients necessary to balance the plant before critical production stages.

If you would like to discuss these tests or would be interested in having Soil Solutions perform some of these "in field" tests for you give Gene a call at 712-579-9540.

Time to Apply Safestrike and Procidic

The demand of these two products have been growing the last two years. ***Safestrike*** is a unique blend of Neem Oil and Karanja Oil which is used to maximize the plant's natural defense systems reducing the need for many insecticides or fungicides. ***Procidic*** is a combination of ascorbic acid, citric acid and lactic acid and phytoalexin elicitor compounds. It will control grey leaf spot, northern corn leaf blight, southern corn leaf blight, common rust, anthracnose, bacterial stalk rot, Goss's wilt, and Stewart's disease.

Procidic
Natural Bactericide & Fungicide

SafeStrike

The rate of ***Safestrike*** is 8-10 oz./acre with 10 gallons of water (3-5 gallons if applied by airplane) and ***Procidic*** should be used at 2-3 oz./acre. The two products can be used together. Both of these products have low human dermal toxicity and a zero re-entry period. Last year our clients observed healthier plants and higher yields without the delay in maturity or the higher moisture grain that is sometimes experienced with fungicides. Remember that the water pH of the spray solution should be lowered to below 6.0 before adding any herbicide, fungicide or insecticide for best control. Both products are certified for organic production as well. Give us a call so you too can profit from this natural defense system for your crops.

PRO CAL 40 Price Remains Unchanged

With most crop inputs increasing significantly in recent years most customers assume that our price has increased also. We can boast that our price for PRO CAL 40 hasn't changed over the past seven years. Soil Solutions has worked hard to curb expenses and increase efficiency even though much of our costs have also increased. Fuel prices have gone up and the cost for delivery has increased as a result, but product cost remains unchanged. PRO CAL 40 remains one of the best buys in crop production and in improving your soil's nutrient status and condition. Give us a call and get yours ordered today or call your local retailer to get it scheduled. We are currently taking orders for fall application.

Send us your e-mail!!

We would appreciate it very much if you are currently getting this letter by mail that you send your e-mail address to Andrea at soilsolutions@qwestoffice.net so we can e-mail this newsletter to you instead.