



May 2001 Articles

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Veris Correlates To Yield

*By Randy Simonson, Ph.D.
Technical Services Manager*

Last fall, we borrowed a Veris Soil EC (electrical conductivity) Mapping System with GPS from Helena Chemi-



cal in Berne, Indiana. This is a small two-wheeled trailered unit with six coulters.

Two coulters send out an electrical current while the others record the current after it goes through the soil. The unit will map the conductivity from 0-1 foot depth and from 0-3 feet depth. The machine basically

measures the amount of clay in the soil.

We used this machine on all of the TSM research plots at Catlin. We were particularly interested in what the Veris unit showed on the Holden Farm just north of I-74. In this field, the plots on the southwest side of the field, yielded an average of 59 bu/acre. But plots on the east side of the field averaged only 32 bu/acre. The EC from 0-1 had a very low correlation with yield of 0.06. However, the 0-3 feet EC had a fairly high correlation of 0.51. The closer to 1.00 the correlation is the higher the relationship between the two properties.

The correlations table below reveals some interesting things. Looking at the correlations between the yield and everything else, we see that the **highest correlation is between the yield and the EC deep**. PH, organic matter and CEC also have some correlation to yield, but phosphorus and potassium levels in the soil have almost no correlation to yield. It also is interesting that the EC deep has a higher correlation with yield than with organic matter or CEC.

| Correlations | | | |
|---------------------|---------------------|-------------------|----------------|
| | Yield (bu/A) | EC Shallow | EC Deep |
| EC Shallow | 0.06 | 1 | 0.68 |
| EC Deep | 0.51 | 0.68 | 1 |
| pH | 0.38 | -0.08 | -0.1 |
| O.M. | 0.42 | 0.15 | 0.19 |
| P1 | 0.17 | -0.15 | -0.33 |
| K | -0.15 | 0.08 | -0.34 |
| CEC | 0.43 | 0.22 | 0.28 |

Now you may be asking, "what good is this information?" I think the main way to use this information we get from the Veris unit is in making yield goals. The changing yield goals will then cause changes in the amount of fertilizer applied. A farmer can put his fertilizer where it will do the most good. The TSM program already does this on field by field bases. Now it could be done more accurately within the field.

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Make The Most Of Fertilizer

*By Randy Simonson, Ph.D.
Technical Services Manager*

Every farmer is trying to cut costs this year. With low commodity prices, cutting costs is imperative. How do you cut fertilizer costs while minimizing yield loss?

Nitrogen prices have skyrocketed this year and nitrogen can be a tricky element to recommend. Weather plays a big part in how much is going to be available or lost. The TSM program does a good job in estimating the nitrogen need of a crop. We take many factors into consideration to make it more accurate. Other ways to fine tune nitrogen recommendations is to use the one-foot soil nitrate sample and then sidedressing what is needed. Sidedressing is in general a more efficient way of applying nitrogen just because there is less time for loss compared to fall or spring applications. The soil nitrate test can be used to fine tune nitrogen recommendations, however, each state has a different recommendation with it. We discussed this at length at the TSM Winter Conferences.

Another question we often have is whether starters are needed. I really like starters (2 x 2) or germinators (on the seed). We usually recommend 100 lbs of starter per acre and 5 gal of germinator per acre. In addition to nitrogen and phosphorus, we like to see some potassium, sulfur and micros in the starter or germinator to make sure the crop has everything it needs to get up and going. Starters and germinators get the crop off to a good start especially under adverse conditions. Considering the price of seed and all that a farmer has riding on the crop, it is imperative to give the plants as good a start as possible. We did a big germinator trial a few years ago at the research farm and saw a 14 bu/acre increase over no germinator. This was on conventionally tilled corn. Starters or germinators are even more important for no-till crops.

Many growers have gone to the germinator from starter just because it takes less product, thus fewer fill ups. One more advantage of the germinator is that it is immediately available to the germinating seed, whereas the seminal roots have to find the starter.

Some growers may be considering taking out the micronutrients from their broadcast fertilizer. Our research shows that it is better to just go with a lower TSM budget. That is what the budgets are there for. Even high amounts of phosphorus and potassium do not take the place of micronutrients. Lower TSM budgets are yielding better and costing less than other fertilizer recommendations using just phosphorus and potassium.

TSM has been recommending that growers fertilize every crop. Most soybeans are not fertilized in a corn/soybean rotation. Our research has shown that fertilizing every year is beneficial and recently the University of Illinois has shown that fertilizing every crop produces more profit. This goes along with what I have discussed above. The closer you can get to spoon feeding the crop the better. Even some foliar fertilizers have worked very well in our test plots. TSM-2 is a foliar fertilizer containing both macro and micronutrients. It has produced yield increases of 4 to 9 bu/acre in corn and soybeans.

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Is Veris Better Than Grid Sampling?

*By Randy Simonson, Ph.D.
Technical Services Manager*

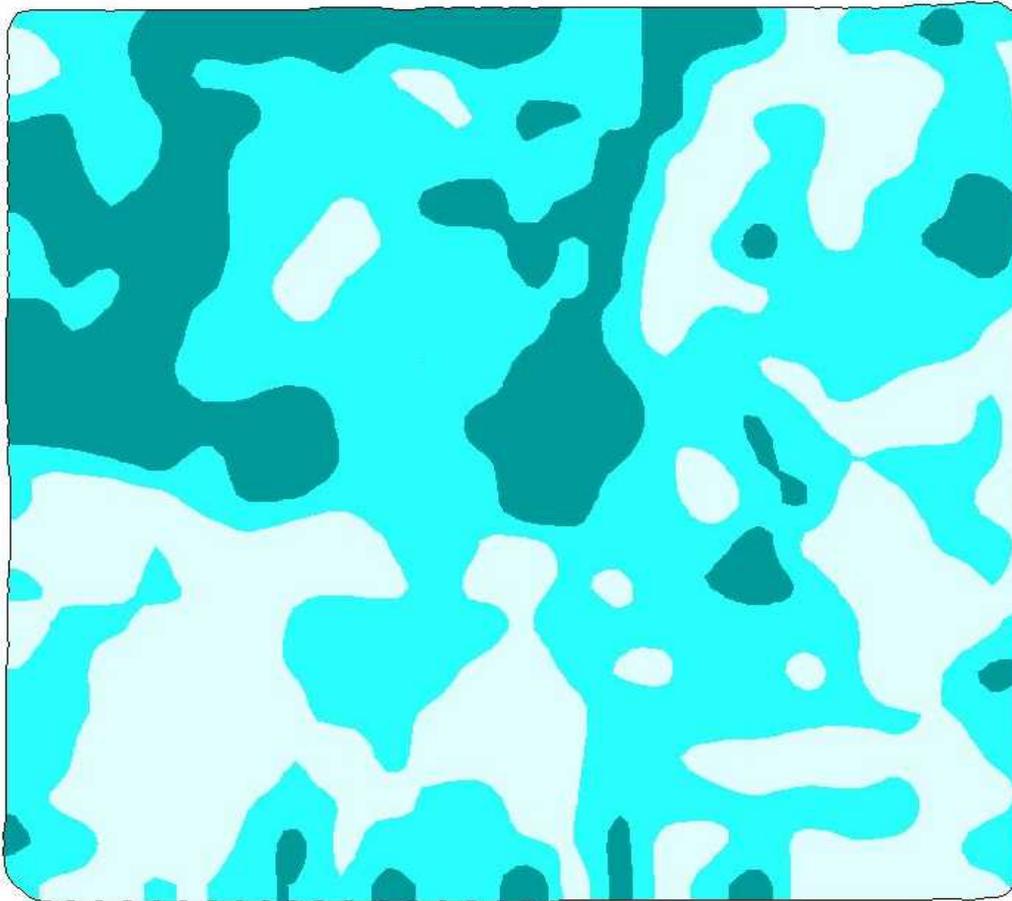
Grid sampling is synonymous with precision farming. Using smaller grids is

considered the means to more intense precision ag. But is it the best way to take soil samples? Some growers and ag retailers are mapping by soil types. The Veris unit produces a map similar to the soil type map in that the Veris will show differences between light and heavy soil.

Helena Chemical at Berne, Indiana and the Helena Information Lab at Bluffton, Indiana have made some correlations comparing grid sampling and sampling using the Veris unit. In one particular 41-acre field, soil samples were grid sampled at 2.5-acre grids. Sixteen samples were taken. The Veris unit was also run across the field. Then soil samples were taken within three zones produced by the unit. The three zones respond to more dense, medium and less dense areas. (See Chart #1 below.) Although several samples were taken in this case, we combined the results into the three zones. Thus, only three samples needed to be taken.

Chart 1

Soil EC Management Zones



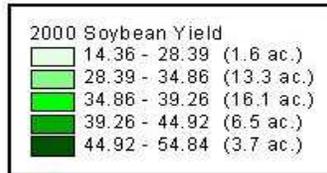
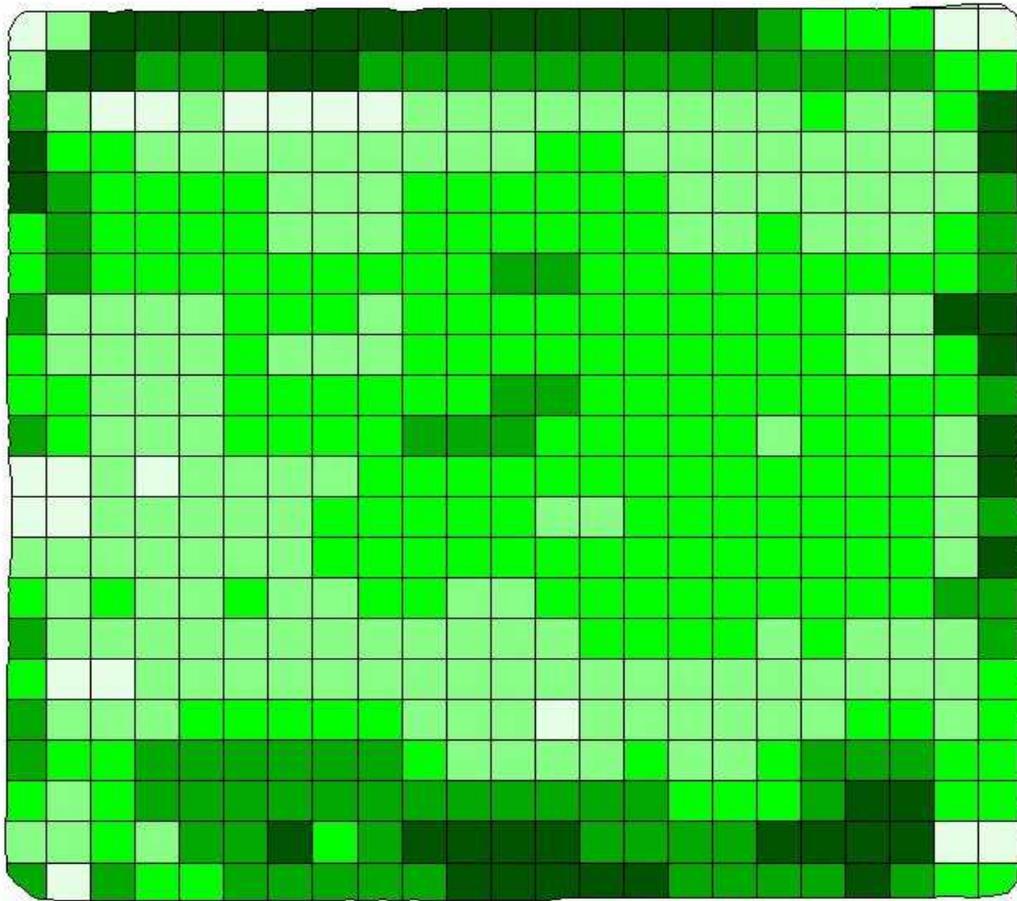
100 0 100 200 Feet

R2 Surface Polygons
Zone 1: less dense (12.8 ac.)
Zone 2: (20.5 ac.)
Zone 3: more dense (7.9 ac.)



The results using both methods were correlated to yield. (See Chart #2 below.) For each soil-tested nutrient, the Veris method showed a higher correlation to yield than did soil test values from grid sampling. And the correlation was always positive with the Veris unit whereas there were some negative correlations using the grid method.

Chart 2
Soybean Yield



The Veris unit produced much better correlations to yield than the grid sampling method and it took 1/5 the soil samples. However, this is only one field, and the next field may show different results. It certainly should be studied further on more fields.

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TSM® Road Signs

*By Larry Schonert
Account Executive*

Perhaps one of the easiest ways to increase interest in the TSM® Program is by using the TSM® Road Signs. Consider the advantages that road signs offer:

- 1. Advertisement - for both your business and the TSM® Program.**
- 2. Attention Grabbing - will cause people to come in and inquire about the TSM® Program.**
- 3. Sales Tool - can increase the interest in getting into the TSM® Program.**
- 4. Information Source - lets customers know you are the exclusive dealer of the TSM® Program.**
- 5. Perception - the customer can see how fields in the TSM® Program are doing compared to non-TSM® fields.**

We have had several dealers tell us the best way to advertise the TSM® Program is through road signs. Don't overlook the importance of what they can do for you! Now is the time to get your signs ordered - don't wait until you need them. Remember that the road signs are available with your dealership name and logo imprinted right on the sign, and "matching dollar funds" can be used when you order. If you have any questions, contact your TSM® Account Executive or the TSM® Main Office.

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Puzzle of the Month: "Pennies"

Two youngsters were playing with pennies. Neither of them had many. They did figure out that if you squared the number of Abe's pennies and added Lizzy's pennies, you'd have 62; but if you squared Lizzy's pennies and then added Abe's, you'd have 176 pennies. Since they didn't have either amount, they gave up, but how many pennies did each one actually have?

(The answer will appear in the next issue)

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The Answer to March's Puzzle!

We appreciate the entries for March's contest, "A Lady's Age". We had 10 winners on this month's puzzle!

The answer to the puzzle "A Lady's Age" is : **Cressida is 4 years old.**

Congratulations to March's big winners!! The big winners are:

Tom Hennings - Landmark Ag Services, Dunkerton, IA

Larry Coombes - West Ridge Agri-Service, Tuscola, IL

Scott, Adam & Beth - Universal Analytical Lab, Carlyle, IL

Melanie Latamondeer - MFA Agri-Services, Salisbury, MO

Ron Whaley - Royster-Clark, Inc., Otwell, IN

Russel Hoffmeister - Agway Crop Center, Knowlesville, NY

Alan Wright - Avlin Agway, Caledonia, NY

Sam Allen - Agway, Inc., Concord, NH

Randy Hellert - Agway Crop Center, Lyons, NY

Ron Dolbow - Agway Feed & Nutrition, Salem, NJ

Good luck next month!

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Kent's Korner

By Kent Durbin, President

A lot of things have happened since the last newsletter. You have perhaps figured this out for yourself that the newsletter is now coming every other month.

Ron Taylor left our company just recently. Ron is heading up a three and one-half state region for Helena Chemical Company on Proprietary Products. We wish Ron all the best.

This season is really going slow and even through our office. Usually, we get a "slug" of tests all at a time. This year, the tests are coming very evenly. We appreciate this and will be spoiled.

Our new program is closer than ever. We are very anxious to get our first copy to start testing. Testing should start in the month of May.

If you want to get a copy of our "new and updated" TSM[®] Dealer Manual, just mail us the old book. We will return a new one. The new one is completely revised.

You have about 60 days to use up your "Dollar Matching" fund for this year. It means that you can get items at half price.

If you have any questions on fields sampled or not sampled for this crop season, just give us a call. We can run a detailed account and tell you the last time a test was taken on all samples you have had in the past.

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