Newsletter Title

Minnesota Agricultural Services   *Phone: 320-981-0161*

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As I write this, the forecast has the term 'blizzard' in it. An unusual forecast for this winter but a late winter storm to bring some moisture is certainly welcome. I had better get the 4-wheeler and sled ready…I know what I'll be doing if school is cancelled tomorrow.

Yield Monitor Data Interpretation for VRT Seeding

One of the great mysteries in precision agriculture today is the philosophy used to determine the seeding rate, and variations in seeding rate, in a variable rate seeding program. Everyone, myself included, has been working with all the available data to us to come up with an accurate, repeatable, rationale when suggesting seeding rates, and so far I am not sure there is a consensus on what should be recommended.

Unlike variable rate fertilizer applications, there are no standards to use as a bench mark to give standardized recommendations. In VRT fertility applications we have a lot of data that we can use to determine the 'what and where'. Every variable rate fertilizer application we rely on yield maps, soil tests as well as decades of fertility recommendations to generate the equations that control the variable rate spreader. We simply do not have anything to rely on when making variable rate seeding equations. Every one of them used so far has been based on best guesses, though those best guesses have probably been the best that is available. Unfortunately, they do not provide any consistency between fields, varieties or seasons. There may be something available now…

Last week I attended the 2012 Precision Ag Conference in Aberdeen South Dakota. The entire conference was dedicated to learning about precision equipment and research. The most intriguing part of the entire conference was a talk given by Kurt Reitsma, a researcher and extension educator for South Dakota. He discussed some research he was involved in using yield monitor data to determine proper seeding rates. After listening to Kurt talk about the thought process that Kurt and his colleagues used to develop a VRT plan, my first thought was 'no kidding, why didn't I think of that'.

In order to develop a good VRT seeding plan, two things need to be known: where in the field to change seeding rates and at which rate should they be changed. In general, everyone had done something similar to determine where in the field a differing rate is justified, we break the field into seeding zones based on soil types, topography and

VRT Seeding... continued

so forth. What Kurt has done is look at yield monitor data in tabular form, that is, by looking at the actual numbers and not the maps, and breaking the field into four separate zones. He does this by taking each data point (over multiple years) and assigning it one of the following characteristics:

1. High yield and low variability

2. High yield and high variability

3. Low yield and high variability, or

4. Low yield and low variability.

Since each data point is geo-referenced, a spatial map can then be created to visualize the field. Now seeding rates can be applied accordingly. A high yield and low variability means that that spot in the field is always higher yielding and doesn't change much. The same goes for the low yield and low variability areas of the field. Now that these zones are created, adding the right seeding population is the next step.

Planting Populations

Now that an accurate assessment of where to change seeing rates is described all you have to do is plant the correct population.   An easy task, right? Actually it is if you know what the optimum seeding rate is for your particular variety. Unfortunately, we do not know this. We can surmise a few things reading the seed guides that come out every year, like not going with too high of a population on a flex hybrid and so forth. However, Pioneer does have this information. Pioneer has done a fabulous job collecting data and they do have literally thousands of trials where the optimum seeding rates are calculated. Using

data from trials like Pioneers allows you to make sound decisions on what seeding rates to use on the newly organized yield zones talked about above. Finally, there is some sound basis to use when developing a VRT seeding plan.

I think Kurt's methodology for making variable rate seeding zones is the most sound I've seen. I plan on following his ideas in the field and both he and I would be anxious to have someone VR their seed with this method. Let me know if interested.
Finally, something solid to work with!!