



VARIABLE RATE FERTILITY

Background

Throughout the fertility and plant nutrition world “4 R Nutrient Stewardship” is commonplace. The 4 R’s refer to the right rate, right place, right time, and right source. As a producer this stewardship plan can help you adjust rates accordingly to soil changes within the field, providing a greater return on your fertility investment and maximizing your land’s potential.

How?

360° Ag Consulting uses geo-referenced field borders that exclude marginal areas of the field (example; sloughs). This allows us to use 5 m resolution satellite imagery to identify high and low producing areas of the field.

We take this information and use it to further “ground truth” out in the field, see **Figure 1**. This figure is a infrared satellite image of a 240 acre wheat field taken in July 2012. As the color changes suggest, the production on the North ¼ of this field is a lot different than the South ¼ of the field. Past cropping history as well as elevation changes between the north and south quarters cause a distinct difference even though the field has been treated the same for several years. In order to fully appreciate the differences in this field we must split it and soil test it separately.

Soil Testing

At 360° Ag Consulting we believe that a variable rate fertility program is not complete without soil testing and “ground truthing” field zones by an experienced agronomist. For example, take the field shown in **Figure 1**. We have split the north and south examples into separate fields. The NE and SE of 1-2-3 is split into 5 zones, see **Figures 2 and 3**. Zone 1 has lower vegetation cover and Zone 5 has the highest vegetation cover. Within these zones a minimum of 8 cores are taken per zone.

Figure 1: Un-analyzed Satellite Image of E 1-2-3

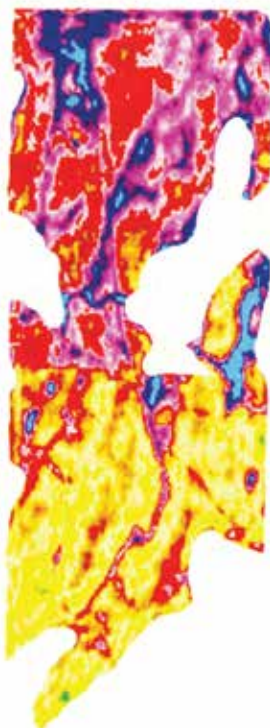


Figure 2: NE 1-2-3 Zone Map



Client: John Smith
Farm: FIELD 2
Field: NE 1-2-3

5	18.44 ac
4	30.92 ac
3	27.29 ac
2	27.04 ac
1	18.44 ac

Figure 3: SE 1-2-3 Zone Map



Client: John Smith
Farm: FIELD 2
Field: SE 1-2-3

5	24.80 ac
4	35.26 ac
3	29.98 ac
2	22.35 ac
1	11.41 ac

Results

After your samples have been tested, your agronomist will sit down with you to review your results. Together you will set yield targets by zone, based on your experience with the land and compiled data from both the map and the zone test. In this example there are 10 different management zones on this piece of land (5 zones in each map). Upon completion, we will have your total amount of fertilizer per field as well as overall yield expectation to help your budgeting process.

See **Figure 4** for an example of a urea map based on soil test result and yield goals for E1-2-3.

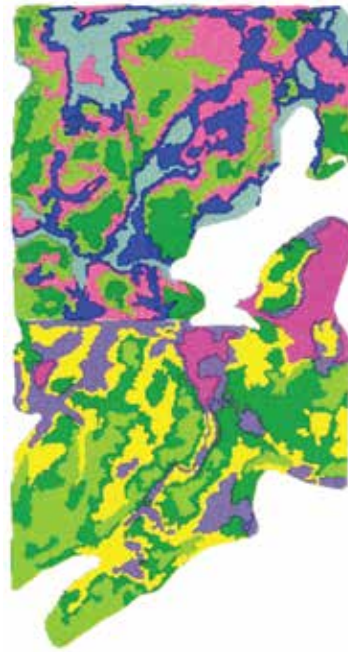








Figure 4: Urea Map for E1-2-3

Client: John Smith

Farm: FIELD 2

Field: E 1-2-3

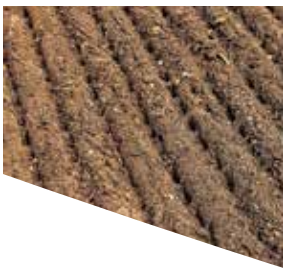
Product: Urea

	282 lbs/ac
	263 lbs/ac
	256 lbs/ac
	248 lbs/ac
	246 lbs/ac
	242 lbs/ac
	239 lbs/ac
	215 lbs/ac

Field Ready

Prior to seeding you will have your prescription maps loaded in your monitor as well as paper copies in hand. Your 360° Ag Consultant, along with your local equipment dealer, will help troubleshoot your equipment and ensure you are ready to go!

To get your farm started with a Variable Rate Program, please contact your local agronomist today!



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