

# Zone Fertility Management



## Zone Fertility Prior to Sugarbeets

*Managing nitrogen in a sugarbeet rotation is a key component to producing a high quality crop.*

The best way to achieve this goal is to identify the areas of the field that have different levels of nitrogen. This can be achieved by sampling utilizing topography, sampling from different yield zones, or by zone sampling utilizing satellite imagery. From this data, apply nitrogen fertilizer where it is needed, thus setting the stage for a high quality crop across the entire field.

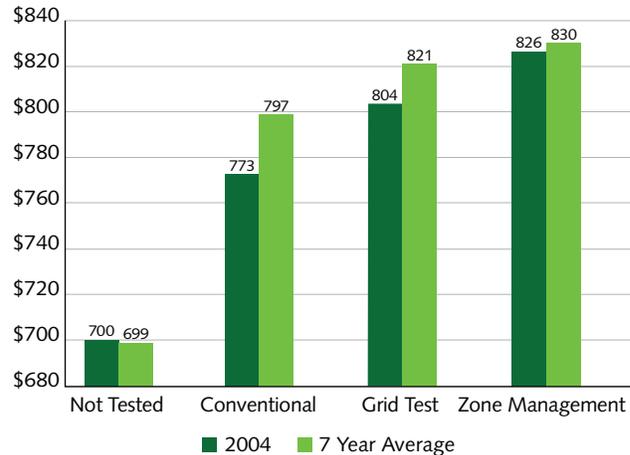
### Advantages of Zone Fertility Management

- Placing the fertilizer where it's needed.
- Lowered sugar loss to molasses.
- Potentially using less fertilizer.
- Increased sugar percentage.
- Increased tonnage.
- More environmentally friendly.
- Wise use of costly nitrogen.

### How do I get started with a Zone Fertility Management program?

- Talk with your agriculturist.
- View prior years satellite imagery.
- Export satellite imagery to soil sampler.
- Review sample results.
- Make a decision to go or not.
- Request a variable rate disk.
- Disk gets sent to applicator.
- Field is variable rate spread.

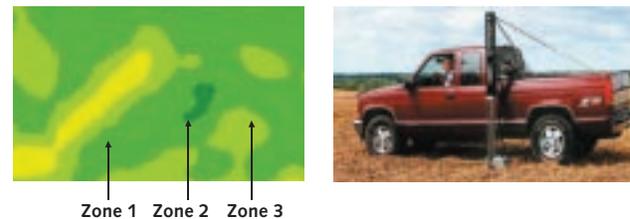
Revenue/Acre



### Revenue per Acre Chart

Zone fertility management has averaged over \$30/acre gross revenue advantage compared to conventional sampling. It has proven to be an economical farming practice even under slight variability as low as 15#/acre. The extra costs are typically less than \$5.00 per acre and include extra costs for zone sampling, spread disk creation and extra cost to apply the fertilizer. The benefits can potentially give a return on investment as soon as the fertilizer is applied. Contact your agriculturist for any additional information on zone fertility management.

Example of different zones within a field derived from satellite imagery.



YOUR WAY TO GROW

## Zone Fertility Following Sugarbeets

*A sugarbeet plant is an excellent scavenger of nitrogen pulling it from the soil and storing it in the tops of the plant.*

By utilizing Near Infra-Red satellite imagery of sugarbeets that shows different canopy density, the establishment of nitrogen zones can be achieved. Managing these zones helps reduce the amount of lodging in grain and also reduces carry over nitrogen for your next sugarbeet crop on this field. There is no need to soil sample following sugarbeets, as samples consistently show less than 20 #/acre of nitrogen.

### Advantages of Zone Fertility Management

- Better utilization of fertilizer.
- Decreased potential of lodging in small grains.
- Less white mold in edible beans.
- Potentially using less fertilizer.
- Evening out the carry over nitrogen for the next sugarbeet crop.
- More environmentally friendly.
- Review maps before having to commit to the program.
- Most effective use of costly nitrogen.

### Management Zone Map

The management zone map shows the amount of variability within a field. The upper right of the page shows the amount of acres in each fertility zone and the fertilizer needed to achieve a chosen crop yield. Fertilizer savings are calculated from a user defined price per ton. Average savings in 2004 was \$10.80 per acre. The program cost is \$1.50 per acre to develop a variable rate disk and any additional application costs that may be incurred. Sit down with your agriculturist and review your options before you commit to the program.

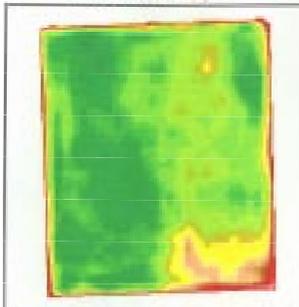
### How do I get started with Zone Fertility Management following Sugarbeets?

- Talk with your agriculturist.
- View the Management Zone Map.
- Make the decision to go or not.
- Request a variable rate disk.
- Disk gets sent to applicator.

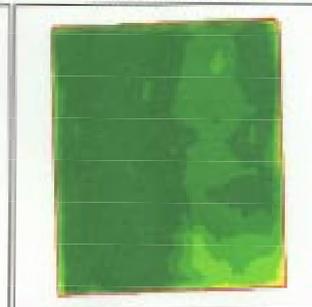
## How to Spread Less Fertilizer This Fall by Managing Nitrogen The Year After Your Sugarbeet Crop

Prepared For:	Field Information:
American Crystal Sugar Co.	County: Marshall Township: Augeburg Section 32 SE Quarter 152.802 Acres

NIR Satellite Image



Management Zone Map



There are many reasons to consider using nitrogen application based on sugarbeet canopy. One reason is to reduce the amount of nitrogen that is applied without reducing yield. This will reduce input costs, and help to prevent lodging in crops that are susceptible to that problem. Lodging can reduce yield by up to 20 %! In this way, this technology will help increase yields. Applications of this type will go a long way towards preventing variability of nitrogen from becoming a problem in the years between your sugarbeet crops. This map is based on the Near Infra-Red satellite image of your 2003 sugarbeet crop. In some cases, a soil test of the zones of the field with the predicted levels of excessive beet-top nitrogen may increase savings and prevent adding more N to an already high nitrogen area. Please call your agriculturist for more details.

Wheat	Acres	#/Acre	Price/Ton	Cost
Conventional	184.0	81.00	\$100	\$8,100
Zone 1	2,340	150	\$100	\$234
Zone 2	8,000	125.0	\$100	\$800
Zone 3	17.55	145.0	\$100	\$2,535
Zone 4	88.45	115.0	\$100	\$1,017
Zone 5	81.50	140.00	\$100	\$1,141
Variable Rate Totals	127.80		\$100	\$12,780
Fertilizer Savings	27.80			\$2,780

**AMERICAN CRYSTAL SUGAR COMPANY**

Agriculturist  
PO Box 190  
Drayton, MO 68225  
www.crysalsugar.com



For additional information contact your agriculturist or extension specialists.

#### Web sites:

www.crysalsugar.com  
www.precisionpartners.com/

