



Precision Agriculture: A New Era in Fertilization

With the end of the cold war, satellite-based technology that was only available to the armed forces has now been released for civilian use. The use of satellites for geo-referenced data collection, computers to convert the data to soil fertility maps, and machines for the site-specific application of nutrients have resulted in the development of a new farming system called precision farming. This process includes a process of data collection through soil sampling, conversion of data to knowledge and application of the knowledge to site-specific management of spreading fertilizer and lime within a field.

This new technology is very fascinating. For nutrient management this technology is based on collecting soil samples in a systematic fashion, and using soil sample results to produce soil fertility maps. The soil fertility maps are then used to apply variable rate nutrients or lime to a field.

Through the use of this new technology producers are able to:

1. Increase production on areas that are generally, less productive than the rest of the field
2. Decrease excess nutrient runoff by only providing nutrients needed by the plant
3. Increase knowledge of fertility levels within a field

Soil Sampling



Soil sampling is the first step when using precision agriculture technology. On crop fields samples are generally taken on a grid system, where by the boundaries of the field are

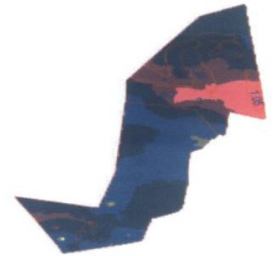
marked, then a computer designates the sample points in the field. On pasture with wide variations in topography, samples are best taken to where the topography differs in the field.



75 acre pasture field, depicting 47 sample points

Data Analysis & Nutrient Application

Once the sample data is returned from the lab, results are entered into a database to build the soil fertility and application maps.



0-46-0 Application Map

When applying nutrients, the variable rate spreader truck travels in the field as if it was spreading conventionally, but by using GPS, when the truck passes over a different recommended rate, the rate is changed automatically to deliver the specific nutrients to that specific area.

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