

Regional Crop Management Project Under Way

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In 1998, we began to participate in a regional crop management project that is designed to address some common concerns we have in the mid-Atlantic region regarding crop production.

A key emphasis is to find ways we can use technologies to increase yields on the drought-prone soils of our region.

In the next few issues of *Corn Talk*, we'll discuss some of the projects that are under way in Maryland, Virginia, North Carolina, and here in Pennsylvania. The project is being coordinated by the Foundation for Agronomic Research with industry support from a number of regional ag suppliers.

During the summer we were able to visit some of the research sites our colleagues had established in Virginia

and North Carolina. In Virginia the main study site is located on Camden Farms, near Port Royal, Va. There our project director, Dr. Mark Alley, and his research team are evaluating various no-till corn wheat soybean rotations using precision ag technologies on the variable soil in the area.

The fields at this study site are large, flat, and seem uniform, but the soils actually vary from sandy loams, which are fairly productive to loamy sands which are quite droughty. The aim of the project is to determine of field mapping and variable rate applications can improve crop productivity on these soils.

One activity they reported on this summer was a project where they have begun to evaluate the effectiveness of various soil sampling strategies: a 2.5-acre grid, a 1-acre grid, a whole field composite,

and composting by soil series. They compared these results to those obtained with a very intensive sampling system on a 60 x 100-foot grid. Then they compared the results of phosphorous and potassium fertilizer recommendations from each method by calculating the how far off the fertilizer recommendations would be in each of the small grids for the various soil sampling systems.

Results varied by fields and are apparently influenced by the source of the nutrient variability. In one fairly uniform field, the average miss for Potassium with the normal composite method was only nine pounds/acre and composting by soil type reduced it to four pounds per acre. Using 2.5- and 1.0-acre grids resulted in average misses of 6 and 5 pounds per acre, respectively. In another field compositing the whole field resulted in an average



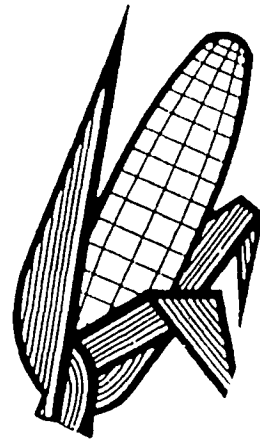
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miss of 23 pounds per acre in the recommendations compared to 17 where composited over soils. Going to the 2.5- and 1.0-acre grids reduced on this field reduced the average miss to 13 and 11 pounds per acre, respectively.

These results suggest the need for "smart sampling" as some researchers have advocated, where the sampling system for precision ag purposes is dependent on the characteristics of the individual field. We will probably do our best if we let the field conditions and nutrient levels dictate our sampling system.

This research project is only one of many involved in the overall study. In future issues of *Corn Talk*, I'll provide updates of other projects, including those under way in Pennsylvania.



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