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AGRICULTURE'S PRODUCT PIPELINE CONTINUES

Last week I attended "Solution Days" sponsored by Syngenta. The field day was held three miles north of York along Highway 81 with corn and soybean topics. University of Nebraska Extension was actively involved in many of the presentations. Data from eleven "Solution Days" sites across the country will be posted after harvest on the Internet.

Primarily through the NK brand, Syngenta currently sells several corn and oilseed biotechnology products. In addition to insect resistance and herbicide tolerance, Syngenta's biotech research and product pipeline includes several new projects. Within the next 3 to 5 years, Syngenta will bring forward amylase corn, Quantum phytase enzyme feed supplement, longer-shelf life bananas, fusarium resistant wheat, vegetative insecticidal protein cotton, and second-generation products for insect resistance in corn and cotton. Further down the road, this company is managing projects for drought tolerance, biopharma crops and disease resistance. One product coming through the development pipeline is amylase corn which was highlighted at "Solution Days."

A Syngenta scientist from North Carolina was impressed with Nebraska's crops at the field day. He was excited about demonstrating amylase corn and its benefits to the growing ethanol industry. He took field corn flour and amylase corn flour, mixed them with water and heated the mixture up over a burner. The amylase corn mixture converted to sugar quite rapidly.

Amylase corn is field corn genetically modified to express high levels of a novel alpha amylase enzyme which is a critical ingredient in the production of ethanol. Amylase, in general, is an enzyme that has been utilized in ethanol production and other processes for quite some time. In fact, it is even present in human saliva to aid in the process of digestion. This enzyme additive is currently used in the dry grind ethanol industry to accelerate the conversion of the starch in corn to sugar.

Syngenta scientists learned how to locate the enzyme in the corn grain. The high amylase corn has the potential to significantly improve the ethanol process and thus the overall efficiency of ethanol plants, including yield increases, process improvements and possibly reduced ethanol production costs. More work needs to be done to put numbers to this. Syngenta's amylase enzyme is thermostable which allows more efficient utilization of the enzyme during the ethanol production process.

Syngenta is seeking full food and feed and export approvals for the amylase corn. It is expected in the year 2009. They are currently conducting field trials. Look for this company to provide 8 to 9 new traits in the next 5 to 7 years. The trait changes in varieties will either come from gmo's or native trait enhancements.

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