APPLYING PHOSPHATE ON CORN

As area farmers are making decisions for this year's growing season, new UNL research shows applying additional phosphorus is beneficial for high-yielding, irrigated fields planted to continuous corn.

UNL soil scientists conducted 34 irrigated corn trials across the state. Researchers found in areas where high-yielding, irrigated fields are planted to continuous corn, current UNL phosphorus recommendations need revision. This is being reported by Charles Wortmann, UNL nutrient management specialist in the Institute of Agriculture and Natural Resources.

Current UNL recommendations do not recommend adding phosphorus to corn when soil tests for phosphorus are greater than 15 parts per million. Research recommendations are based on using the Bray-1 soil test. However, current research updates that figure and now recommends applying phosphorus up to at least 20 parts per million for continuous corn. Fields vary in phosphorus levels and grid sampling has shown within field large variations can occur.

This revision does not apply to corn that is planted following soybeans. The current recommendation still does not recommend phosphorus above 15 parts per million for corn after soybeans. These research findings will be published in the May-June issue of the Agronomy Journal.

Nutrient recommendations change as farming practices change. Recommendations have been based on old information when yield levels were much lower than they are now, varieties were different, as were management practices. Much more tillage was practiced then. UNL conducted the 34 irrigated corn trials to find out if those recommendations were still adequate for today's higher yielding conditions.

When it comes to potassium and sulfur, recommendations did not change. UNL results validated that potassium recommendations for high-yielding corn stay with the critical level of 125 parts per million, as the probability of profitable response to applied potassium is very low when soil tests are above that. In fact, there is evidence that applying potassium where not needed can have a negative effect on yield.

The research findings also confirm current recommendations for sulfur. One way to interpret soil test results is to use software tools to calculate recommendations. UNL has an online soil testing software tool at http://soiltest.unl.edu.

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