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University of Kentucky
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Farm Update
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Irrigated Corn Fertility Research

There have been no changes to UK's recommendation for irrigated corn fertility for a long time, but that doesn't mean research is not annually conducted to confirm our recommendations are not inadequate. Specifically, a great deal of research has been conducted in recent years pertaining to new nitrogen sources and studies advancing the use of new nitrogen placement and timing. Last year, Dr. John Grove partnered with Cam Kenimer of the UK Corn Yield testing program to conduct basic irrigated corn nutrition research on the farm of Jason and Richard Strode at Scuffletown in conjunction with the UK Corn Yield test location. Their goal was to determine if the baseline UK fertility recommendations for irrigated corn are adequate. Their objective was to establish soil test phosphorus, potassium, zinc, and boron levels at which irrigated corn will not respond to further additions of these nutrients. This research received funding support from the Kentucky Corn Growers Association to ensure corn growers can continue to profitably produce corn when optimizing irrigation resources.

The field was conventionally tilled, and the fertility plot area was planted in Pioneer P1464VYHR, the previous crop was soybean. Spring soil test samples were collected prior to treatment applications. Ear leaf tissue was taken at silking. The study was two nitrogen rates, UK recommendation and UK recommendation plus 50 units of N/acre. Two phosphorus rates,

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UK recommendation and UK recommendation plus 50 units of P/acre. Two potassium rates, UK recommendation and UK recommendation plus 50 units of K/acre. Two rates of a zinc, boron, and sulfur package, UK recommendation and UK recommendation plus 10 units of zinc, 1 unit of boron, and 20 units of sulfur.

The result of the research was that none of the yields were statistically different from the UK recommended fertility rates. The site average yield of all 16 individual treatments was 215 bushels per acre. The UK nitrogen recommendation yielded 218 bu/acre, and the UK nitrogen recommendation plus 50 units of N/acre yielded 212 bu/acre. The UK phosphorus recommendation yielded 217 bu/acre and the UK recommendation plus 50 units of P/acre yielded 213 bu/acre. The UK potassium recommendation yielded 216 bu/acre and the UK recommendation plus 50 units of K/acre yielded 214 bu/acre. The zinc, boron, and sulfur package of UK recommendation yielded 217 bu/acre and the and UK recommendation plus 10 units of zinc, 1 unit of boron and 20 units of sulfur yielded 214 bu/acre.

The yield results were interesting in several ways. First, the researchers were surprised that there were no statistically significant effects due to the addition of any extra fertilizer either as a main effect, or as interaction among the added materials. The results indicate that the UK recommendations for the initial soil fertility levels were adequate for optimum yield and the additional fertility would reduce the overall return on investment in a commercial corn field. In addition to final yield results, the corn ear leaf nutritional data indicated the concentrations of leaf nutrients from all treatments were within the sufficiency range, regardless of whether more fertility was added to the treatments.

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The study indicated that corn grown in that irrigated, high-yield environment is supplied adequate nutrition when following UK's nutrient recommendations. Thanks to the Strodes for hosting this research location and for hosting one of the UK corn variety performance test locations for the past several years.

Safety on the Roadways

Planting season is approaching and with it comes farm machinery returning to the roads. All drivers need to use patience and keep alert as slow-moving vehicles will soon be on the roads throughout the area. The most dangerous place to encounter machinery is on the by-pass. Not only are tractors and sprayers on that road, but trucks slowly moving anhydrous ammonia are on there as well. Use caution, look ahead, and stay off the phone. The distance between a car traveling 75mph approaching an ammonia transport traveling 45mph closes dangerously fast.

Accidents between farm machinery and cars and trucks occur each year and near collisions happen every day. It's scary, causes property damage, results in lost time, and causes personal injury in the worst scenarios. If you've not visited with your insurance agent lately to evaluate your liability protection, it may be time to do that as well.

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