MESSENGER-INQUIRER

Cooperative Extension Service

Farm Update

daviess.ca.uky.edu
AGRICULTURE & NATURAL RESOURCES EDUCATION
Clint Hardy
Daviess County Extension Office

November 22, 2025

Liquid or Dry Fertilizer Products and Placement

University of Kentucky Extension Soils Specialists Drs. John Grove and Edwin Ritchey wrote the following article comparing dry and liquid fertilizer options and their placement onto the soil.

First, a pound of a nutrient is a pound of a nutrient, regardless of the source. The difference is the percentage of nutrient in each source. The nutrient concentration is simply the nutrient weight by percentage of total weight. Using nitrogen (N) for this example, there are 46 lb N/100 lb dry granular urea, and 32 lb N/100 lb of 32% liquid urea ammonium nitrate solution, or about 3.5 lb N/gallon.

The second part of the liquid versus dry discussion comes down to the difference in nutrient availability. Liquid fertilizers are often promoted as being more available to plants since the nutrients are already dissolved in the liquid source, unlike the dry solid form that must dissolve before being available for plant uptake. Dry forms do have to dissolve in the soil water, but this process usually takes minutes to hours, not days to weeks. The amount of water needed for dry fertilizer dissolution is minimal. Regardless of using a dry or liquid source, there must be soil moisture sufficient for nutrient movement to the plant root. Both forms are equally available and effective in providing crop nutrition.

MESSENGER-INQUIRER

The second consideration in this discussion is fertilizer placement. Fertilizer form and placement are strongly linked. Generally, fertilizer placement in a band, both on or below the soil surface, is easier with a liquid product than a dry product. The most common band applications occur at planting, either in the row (in-furrow) or 2 inches over from and 2 inches below the seed furrow depth (2x2). The placement of either dry or liquid fertilizers will provide equivalent amounts of available nutrient to the plant, assuming all other factors are the same. However, there are some different fertilizer properties to consider when banding nutrients, dry or liquid. In-furrow placement raises the potential for seed damage/delayed seedling emergence/reduced stand. Products like potassium chloride (dry product) have a high salt index that can have detrimental effects on seed germination. A similar response due to high salt index can be observed with potassium thiosulfate (liquid product). Band applications of both products are based on pounds of K2O per acre, regardless of the form. Liquid sources are typically easier to handle in many situations and often require fewer stops at planting.

Most micronutrients are available in both dry and liquid forms, but micronutrient source choices are more dependent on effective placement because of the small amount of nutrients needed to meet crop needs. Some dry micronutrient materials are difficult to use and spread via bulk blends. Dry micronutrients can be found co-granulated with either MAP or KCl, which improves their distribution spread as a bulk blend. A liquid micronutrient source may be favorable to a dry source when applying nutrients at planting or sidedressing, but plant availability will be similar regardless of the form.

When it comes down to using a liquid or dry fertilizer source, make sure to consider all the factors behind the decision: price and management options. When deciding which nutrient

MESSENGER-INQUIRER

source to use, it simply comes down to two things. The first consideration is the cost of different sources. Unless there is an agronomic performance reason or management advantage for one source to be a better choice than another, price matters. The second consideration is what works best in the individual operation, especially given the various equipment requirement considerations.

University of Kentucky corn and soybean variety trial

The University of Kentucky corn and soybean variety trial information is now available online at https://varietytesting.mgcafe.uky.edu/ and in the Daviess County Plot Books. The data was collected from seven corn locations including a Daviess County field hosted by Richard and Jason Strode and six soybean locations including a Daviess County field hosted by Scott Kuegel and family.

Multi-location county and state summary data is the best resource for making variety selection decisions. Growers can use the state summary data to identify varieties that performed well both across the state and in our county plots.

Extension Office Closing

The Daviess County Extension Office will be closed November 27 and 28 for the Thanksgiving Holiday.