

KQ Fertility Facts

Grower Edition
May 1998

Precision Nitrogen Management with the Power of Synergism...

KUGLER KQ353

KQ353 is a specially-formulated fertilizer containing a combination of four essential nutrients - nitrogen, potassium, sulfur and zinc. These four nutrients work together through the power of synergism to get greater results than when nitrogen alone is used.

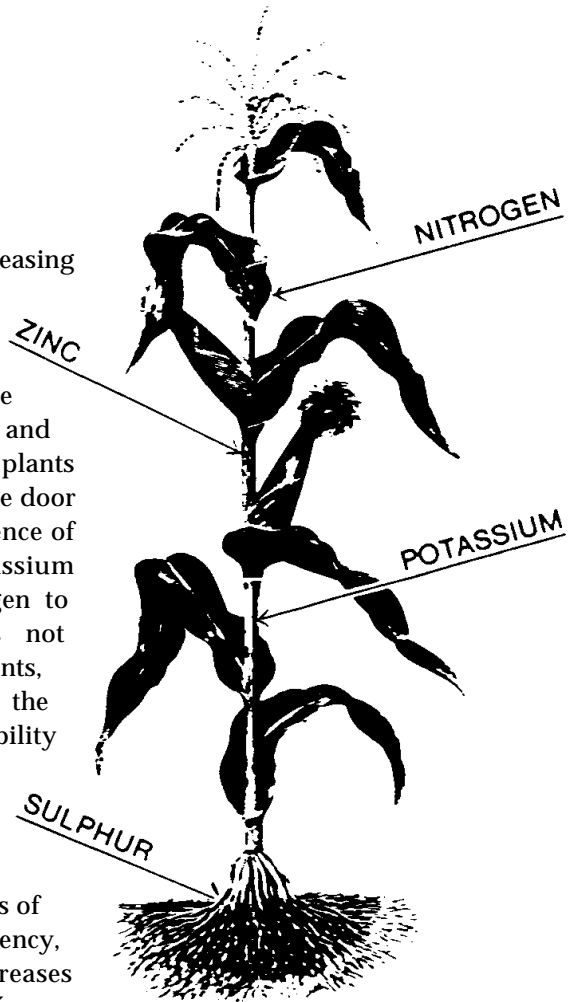
Sulfur and potassium play an important part in the utilization of nitrogen. The most common form of nitrogen taken up by the plant is in the nitrate form. To utilize nitrate nitrogen, plants must first reduce or change it back to ammonium form. This process creates an imbalance that the plant corrects by increasing the potassium uptake.

Sulfur is also needed to properly metabolize nitrogen. If sufficient potassium and sulfur are not available, then nitrate nitrogen

accumulates in the stalk increasing the probability of stalk rot, reducing plant performance and lowering yield potential.

Research studies at Purdue University concerning nitrogen and potassium relationships in plants found that "potassium opens the door to nitrogen uptake." The presence of optimum amounts of potassium facilitates movement of nitrogen to the kernel. If nitrogen is not available in sufficient amounts, nutrients are stripped out of the stalk. Stalk quality and standability suffer; and, so do yields.

KQ353's combination of nutrients helps to open the door to optimum nitrogen uptake. Using split applications of KQ353 increases nitrogen efficiency, improves plant health, increases yields and ultimately profits. ▽



KUGLER KQ353: *Balanced Nitrogen Grade for Fertigation*

The four essential nutrients making up KQ353 each play an important part in grain production, bringing about high yields and high protein content.

Nitrogen is the main building block in KQ353, as it builds protein and amino acids, and actively affects the manufacture of sugars, starches and carbohydrates. Adequate nitrogen is

vital for meeting the corn plants' nutritional requirements.

Zinc helps achieve good seed production and helps with water intake and all metabolic reactions.

Potassium helps strengthen corn stalks, fights disease and increases test weight. Uptake of potassium is slow during the first month, after which the quicker uptake finishes before actual

grain production.

Sulphur assures nitrogen uptake when it is needed most, and it is essential to the formulation of protein.

The first application of KQ353 should be placed at the 4- to 5-leaf stage, when ear and tassel

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Corn Blend, cont'd

development is taking place, and any type of stress, such as heat, wind, minor hail damage, moisture stress or low nutrient availability from cold soils, will adversely affect ear size.

Subsequent applications should be scheduled as further need for nitrogen is shown during the period of rapid uptake - 20 to 90 days after emergence - with the total amount of nitrogen applied no later than 20 days after silking.

FOOD FOR THOUGHT...

It's time to start cultivating and sidedressing your spring row crops. If you are planning to supplement your "N" needs, you couldn't ask for a better product to use than KQ353.

KQ353 can also be used in a fertigation application at any stage of growth (try that with anhydrous ammonia!).

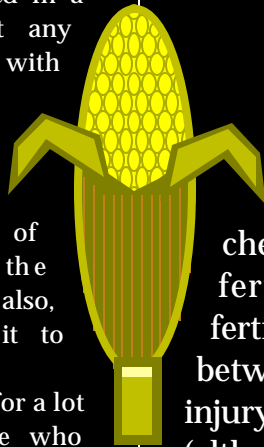
If you are presently using straight nitrogen or a nitrogen-sulphur mix, try using KQ353 on some of your acres. You will see the difference in the field and, also, in your yield. Prove it to yourself!

KQ353 has been around for a lot of years, and the people who have used it are not likely to change. The proof has been shown at harvest time!

So if you are not using KQ353 on your farm, you are using just plain

nitrogen!

**REMEMBER the ones
that are
"FULL OF HOLES:"
32-0-0
and 28-0-0**



CAUTION: When checking row crops fertilized with KQ fertilizers, please stand in between the rows to avoid injury. It has been reported (although we cannot verify) that there have been some minor injuries when straddling the rows while checking crops, due to the

Synergism -

What Is It?

Synergism is the combined action of two or more nutrients that results in an effect greater than that of which each is capable individually.

NUTRIENT	32-0-0 100 lb/acre	KQ 353 100 lb/acre	% Increase
Nitrogen %	2.17	2.50	15.2
Phosphorus %	0.30	0.35	16.6
Potassium %	1.83	2.09	14.2
Sulfur %	0.15	0.18	20.0
Zinc ppm	33	67	103.0

(Applied at tasseling time. Results obtained from a leaf tissue sample.)

KQ353 Synergism Increases Nutrient Uptake

The above table shows the results of a comparison of 100 pounds per acre of 32-0-0 versus 100 pounds per acre of KQ353 (26-0-3-5-.3 Zn). Note the increase of all nutrients where KQ353 was used. Even though six pounds per acre less of nitrogen was applied with KQ353, the nitrogen level increased by 15.2%. KQ353 also increased the P₂O₅ level by 16.6%, even though no phosphate was applied. Levels

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