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For Cotton, Potassium Helps to Ensure Quantity, Quality in any Season

By balancing potassium with other essential plant nutrients, cotton producers can ensure the quantity and quality of their crop in any given season, says a Potash & Phosphate Institute (PPI) soil expert.

Potassium soil levels, in particular, are sometimes just assumed to be adequate, says Rob Mikkelsen, western director of the Potash & Phosphate Institute. In more arid regions, potassium soil supplies had been high, but producers later discovered years of neglect allowed soils to be mined down below optimum levels limiting yields in many areas.

"Cotton demands high amounts of potassium during the early squaring to early bloom stage," he says. "Letting potassium soil supplies dwindle has very negative consequences for both quality and yield."

Mikkelsen suggests that cotton growers pay special attention to their potassium applications in non-irrigated production systems or where irrigation water is limited. Research indicates positive drought tolerance results when potassium is at optimum levels.

"Plants depend on potassium to regulate the opening and closing of their leaf pores to allow water vapor through," Mikkelsen says. "When potassium is deficient, pores become sluggish and plants are even more susceptible to water stress."

In addition to contributing to yield and quality, potassium promotes quality root systems by enabling them to capture available soil water that allows for rapid re-growth of roots and shoots. It's essential to supply an adequate amount of potassium on compacted soils, where a shallower rooting volume limits access to water and nutrients lower in the soil profile.

Mikkelsen says soil and plant tissue testing are critical in order to monitor the crop's nutrient status during the season. If soils were already sampled and tested this past fall, growers should review previous yield and fertilizer program records before applying their spring fertilizer.

According to Ray Hoyum, vice president of market development and communications at IMC Global, producers can provide cotton with the necessary amounts of potassium and other essential nutrients in the form of potassium-magnesium sulfate (K-Mag®, also known as Sul-Po-Mag®).

"Growers need to team individual nutrients, like potash, magnesium and sulfur with nitrogen and phosphorus for a balanced fertility program - a prerequisite for a healthy, profitable crop," he says. "K-Mag provides the proper balance of these nutrients needed to produce a high quality, yielding cotton crop."

Mined and processed by IMC Global, K-Mag is a 3-in-1 fertilizer combination that consists of 21-22 percent potash, 10.5-11 percent magnesium and 21-22 percent sulfur, all in a readily-available sulfate form.

"Since K-Mag contains potassium, magnesium and sulfur, growers may be able to reduce the amount of these nutrients from other sources in the overall mix," Hoyum says. "A low salt index, low chloride content and the fact that K-Mag is virtually 100 percent water-soluble are additional product features that are attractive to cotton producers."



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