AGRI-BRIEFS
AGRONOMIC NEWS ITEMS

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HEDGING AGAINST SOYBEAN RUST WITH MURIATE OF POTASH

Asian soybean rust is THE topic on every U.S. soybean producer's mind this year, since plant pathologists documented the disease very late last fall, after the hurricane season, in a number of southern states. Fortunately, the majority of the soybeans had been harvested and little yield loss occurred with the disease.

It is certain that if Asian soybean rust is detected in the South this coming season, an arsenal of fungicides will be used to defend against the disease. Proper application timing and appropriate rates will be critical to success.

There is an additional line of defense that many soybean growers may wish to consider: the use of agronomic rates of muriate of potash, also known as potassium chloride. It contains 50 to 52% potassium (or 60 to 62% K_2O), and about 47% chloride. Don't forget that chloride is also an essential plant nutrient. Muriate of potash is the dominant source of potassium fertilizer used and farmers are receiving nutritional chloride, in addition to potassium, when they apply muriate of potash to their fields.

Potassium is essential, increases soybean yields, improves water use efficiency, and is removed from fields with soybean harvest at about 1.2 to 1.4 pounds per bushel. Potassium deficiency symptoms can appear as thin cell walls, weakened stalks and stems, smaller and shorter roots, sugar accumulation in the leaves, and accumulation of unused nitrogen. These factors can encourage disease and reduce the ability of plants to resist entry and infection by many fungal, bacterial, and viral disease organisms. For example, the incidence of leaf spot disease caused by *Cercospora, Stemphylium*, and *Alternaria* in cotton; stem canker infection in soybean; and *Helminthosporium* leaf spot disease in Coastal bermudagrass have all been associated with low soil potassium levels and have been reduced with agronomic potassium fertilization.

Chloride, the other essential nutrient in muriate of potash, has reduced the severity of many diseases in crops: take-all, common root rot, tan spot, Septoria, leaf rust, and stripe rust in wheat; common root rot, spot blotch, Fusarium, and root rot in barley; stalk rot in corn; stem rot and sheath blight in rice; hollow heart and brown center in potatoes; Fusarium yellows in celery; downy mildew in pearl millet; gray leaf spot in coconut palm and sudden death syndrome in soybean. And there is anecdotal evidence in Brazil that muriate of potash may help reduce the severity of Asian soybean rust.

A great deal remains unknown about the effects of plant nutrition on Asian soybean rust. However, the importance of potassium and chloride in producing healthy, high-yielding crops is clear. Apply recommended potassium for soybeans this spring to help hedge against soybean rust. Let good plant nutrition be the other barrel in your shotgun aimed at soybean rust this year.

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