AdvanSix | Ammonium Sulfate

Sulf-N® News

Did you know that winter wheat crops may end up suffering from sulfur deficiency in the spring, even when root zone soil test levels indicate adequate supplies of sulfate? As you think about how to ensure this year's crop has the proper balance of nutrition it needs, here are some key sulfur facts from the experts:

- Tillers formed between early November and late December produce as much as 80 percent of a winter wheat crop's yield, according to a study at North Carolina State University. Sulfur is a key nutrient in the development of those tillers, and a fall application of ammonium sulfate improved yield 13 percent in the study
- Dorivar Ruiz Diaz, associate professor of soil fertility and nutrient management at Kansas State University, notes that winter wheat's root system is not deep enough in the early spring to access sulfur more than a few inches deep in the soil. "The guideline of soil profile sulfate might not apply to winter wheat because of root depth," says Diaz. According to Diaz, sulfur deficiency early in the spring delays growth and maturity of winter wheat. "We need to emphasize the form of sulfur more," says Diaz. "The sulfate form is a highly soluble source that will be immediately available. With winter conditions, microbial oxidation of elemental sulfur into sulfate is probably taking longer than we think."
- Tiller production improves yield directly, and also helps wheat outcompete weeds in the spring, as observed by Midwestern researchers
- Greg Roth, professor of agronomy at Pennsylvania State University, notes that in the spring, sulfur helps with protein development

Sulfur Application Tips:

- Though a preplant or starter application of sulfate sulfur is the most effective way to ensure the availability of sulfur to a young wheat crop, a topdress application of immediately available sulfate sulfur can also boost yields, says Diaz
- Roth says applying sulfur with the second application of nitrogen in late winter or early spring on wheat is common in Pennsylvania. Ammonium sulfate is an effective source of both nitrogen and sulfur
- According to Roth, high-residue seedbeds can reduce the availability of nitrogen to winter wheat in fall and early spring, due to their cooling effects on soils and the immobilization of soil nitrogen by microbes that are decomposing the corn residue. "There are a couple of times in the wheat's development when the wheat needs nitrogen but the microbes won't release it."
- An Alabama study documented a 23 percent increase in winter wheat yields where ammonium sulfate was applied
- In Pennsylvania, topdressing wheat with Sulf-N® ammonium sulfate increased winter wheat yield by 7 bushels per acre
- Missouri researchers found that 20 pounds of sulfur per acre increased wheat yields by 5 bushels per acre at one site and 8 bushels per acre at another

Significant removal of sulfur by high-yielding crops and minimal replacement of sulfur from atmospheric depositions have left many soils sulfur deficient, even in areas where sulfur has not traditionally been a concern. "We have great corn crops this year that may have depleted soil nutrients, which may create a need for additional nitrogen and sulfur as we go into the fall," notes Roth.

For more information on the use of Sulf-N® ammonium sulfate, click here. Also feel free to contact Mercedes Gearhart, Senior Agronomist for AdvanSix.

Contact AdvanSix
To learn more about the benefits of Ammonium Sulfate, visit Advan6.com or SulfN.com or call:
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