

AMMONIUM SULFATE STARTER BOOSTS WINTER WHEAT PERFORMANCE



Nitrogen (N) and sulfur (S) levels in the soil are likely to be low in many winter wheat fields this fall because it has been a wet year combined with high rates of nutrient removal by the season's large corn crop. Therefore, using a starter fertilizer can help build an important foundation for achieving high yields for winter wheat.

"I think it is good practice to have some ammonium and sulfur at planting," said Greg Roth, Professor of Agronomy at Penn State. "It might be the case this year, with wheat following very high corn yields, that soil nitrogen gets exhausted."

More Fall Tillers

Although he warns growers to minimize the chances of nitrogen leaching from winter rains, Roth noted that making adequate nitrogen available to the young wheat crop helps the plants develop more fall tillers.

In fact, research demonstrates the benefits of early applications of ammonium sulfate in winter wheat:

- **More fall tillers.** Scientists at North Carolina State University documented yield increases of 13 percent in winter wheat as a result of better fall tillering following applications of ammonium sulfate.
- **Improved root growth.** Purdue University researchers attributed better root growth and reduced damage from soil-borne fungus take-all in their trials with ammonium-N — the form of nitrogen in ammonium sulfate.
- **More productive tillers.** Tillers formed in late fall and winter tend to produce 30 kernels or more per spike; these are the tillers that produce 80 percent of winter wheat yield.

Immediately Available

Ammonium sulfate is an excellent source of nitrogen for starter fertilizer because it delivers nitrogen in the ammonium-N form, which is immediately available to plants and creates a healthier root environment. When fertilizing near seeds and seedlings, ammonium sulfate is much preferred over urea or ammonium thiosulfate given the latter two fertilizers' potential for ammonia toxicity.

Virginia Tech Professor and Extension Grains Specialist Wade Thomason added that ammonium sulfate has a relatively low salt index and brings sulfate-S to the crop in an immediately usable form, which can be vital in soils that tend to be sulfur deficient.

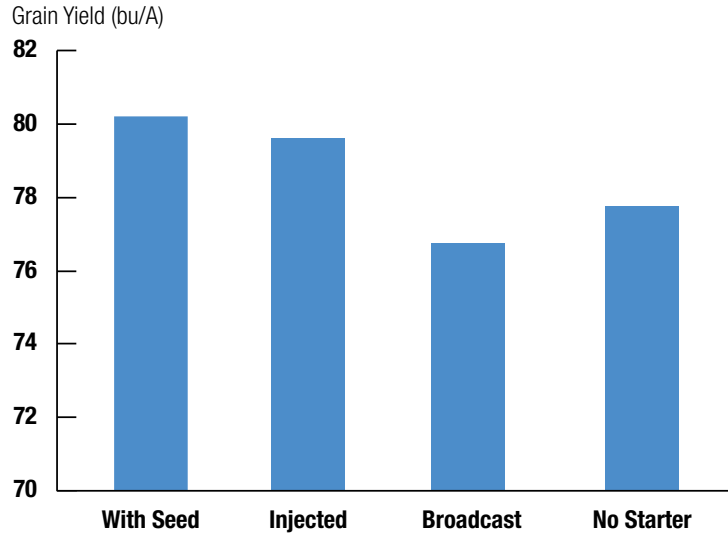
"On some of our sandiest soils, we need to split-apply S just like N in order to maintain availability throughout the year," Thomason noted.

Close Placement

“Having nutrients present in adequate amounts is crucial for early growth and tillering,” Thomason said. “Placing fertilizers near the seed can allow faster access to nutrients, as the roots don’t have to explore a large volume of soil in order to access them.”

Thomason shared that placing a starter fertilizer N-P-K-S blend (with sulfur provided by ammonium sulfate) via a seed firmer in the row, or injecting it two inches below the seed and three-quarters of an inch to the side, delivered the greatest yield in an eight site-year Coastal Plain starter study, outperforming broadcast application.

Winter Wheat Response to Starter Fertilizer Placement



Source: Dr. Wade Thomason, Virginia Tech study, 2005-2009

Useful Resources

Sulf-N® ammonium sulfate is an excellent source of ammonium-N and sulfate-S, which are both immediately available to plants and ammonium-N. For more information about Sulf-N® benefits, [visit this page](#) or contact [Mercedes Gearhart](#), Senior Agronomist at AdvanSix.

Contact AdvanSix

To learn more about the benefits of Sulf-N® Ammonium Sulfate, visit [AdvanSix.com](#) or [SulfN.com](#) or call: **1-844-890-8949** (toll free, U.S./Can.) **+1-973-526-1800** (international)

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