

Feature Story



Taking wheat yields to the limit

Innovation and sound agronomics are key for maximizing yields

RESEARCH TRIANGLE PARK, NC, December 7, 2017 — There once was a time when the conversation around pushing yield boundaries was almost exclusive to corn growers. As a result of advances in genetics and more intense management practices, corn yields climbed a steep slope up. This was followed by a similar trend in soybeans, where new products and agronomic practices helped make soybean plants grow bigger, faster and stronger.

In recent years, this trend expanded to wheat, where growers are using new innovations and advanced agronomic practices to fuel plant growth. From increased education and field trials to industry yield contests, BASF has been involved in helping wheat growers achieve success. This includes recent involvement in two industry initiatives.

Expert insights from Wheat U

Dr. Pete Berry was the keynote speaker at this year's Wheat U event in Spokane, Washington, where he presented his research on improving wheat yields in Michigan and Ohio. As the Head of Crop Physiology at ADAS, the U.K.'s largest independent provider of agriculture and environmental consultancy, most of his work has been with growers in the U.K. However, Berry believes U.S. wheat growers can improve yields by paying attention to three key areas.

Nitrogen management

Wheat requires nitrogen throughout the growing season. The challenge for growers is getting the crop the nutrition it needs while minimizing nitrogen loss. A more precise nitrogen management plan can protect both yields and the environment.

"I'd emphasize that you only want to increase nitrogen fertilizer to match the crop's demand for potential yield," said Berry. "Be careful to not over apply the fertilizer to the extent it might cause nitrate leaching pollution."

If the crop is producing a high yield, then more nitrogen is being absorbed and used by the plant. Therefore, as growers produce higher yields, they should apply greater amounts of nitrogen.

Fungicide applications

Early fungicide applications are important to set the stage for a successful crop, but it's also important to reapply fungicides later in the growing season. This later application prevents leaf diseases from becoming established. The top three leaves of a wheat plant provide 80 percent of grain yield. Therefore, healthy leaf tissue helps build yields. Products such as Nexicor™ Xemium® Brand fungicide could help reduce yield-robbing infections and diseases.

Lessening soil compaction

Berry noted the use of heavy machinery has resulted in deep soil compaction, which is restricting the wheat rooting at depth.

"We're recommending growers dig soil pits to check soil structure and whether roots are able to penetrate deep into the ground," said Berry.

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Compaction can be managed using a combination of sound operational and agronomic practices. An example of a good preventative management practice is to avoid having equipment repeatedly travel on the same wheel tracks. Load seeders and unload combines on the headlands of fields to reduce the heavy weight. When it comes to agronomics, deep tillage and crop rotation are good soil management practices.

Most importantly, Berry believes that an open mind and a willingness to try new ideas can help growers produce the best results.

“The growers that get the highest yields have great attention to detail for the management of their crops,” said Berry. “They’re not just putting the right amount of inputs in, they’re putting them on at just the right time.”

Winning yields

With optimizing wheat yields in mind, BASF became a founding sponsor of the National Wheat Yield Contest (NWYC) created by the National Wheat Foundation (NWF) in 2015. The group recently announced the 2017 yield winner, Phillip Gross of Warden, Washington, with a yield of 184 bu/A.

This contest continuously encourages growers to think outside the box, and how every success can not only be put into practice, but can also help advance the industry. The NWYC has continued to grow over the past two years of competition, as growers achieved wheat yields 30 to 405 percent higher than their respective county averages, pushing innovation, advancing seed varieties and furthering the future of wheat growing.

“With growers in mind, BASF will continue to support innovation among wheat growers, by encouraging the exchange of knowledge on successful practices and techniques,” said Scott Kay, BASF Vice President for U.S. Crop Protection. “We’re excited for the future and growth of wheat yield possibilities.”

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