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Video: Trials examine management practices, fungicides, UAN

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Alberta trials showed yield increases with a second fungicide application but more research is needed to guide producers, says an expert. | File photo

Wheat, barley studied | Effects of a second fungicide application and factors affecting growth regulators were tested

MEDICINE HAT, Alta. — A 30 bushel per acre wheat yield increase from a second fungicide application? Few farmers would turn that down.

Sheri Strydhorst's research achieved that result at several sites this past crop year, but a few provisos are attached.

Strydhorst, an agronomic research scientist with Alberta Agriculture, said the stellar results came on plots where the wheat variety was susceptible to disease and weather was conducive to disease pressure.

“But did it pay? Probably not as well as what a single well-timed application would have,” she said.

“Everyone wants to break yield barriers, of course, but to do it on large acres you have to have the economics guiding you as well.”

One site year of data is not enough to guide producers, and Strydhorst has just finished the first of a three-year project that will examine in-crop supplemental UAN, plant growth regulators and foliar fungicides in both wheat and barley.

She will have 15 site years of data once she completes the studies, which examine 48 combinations of management practices in wheat and 64 different ones in barley at Magrath, High River, Killam, Bon Accord and Falher in Alberta.

She is also testing 14 barley fungicide management practices.

Last year’s trials on wheat have given her slightly more data.

Strydhorst said she was surprised to see the big increase in wheat yields this year following a second fungicide application.

An application at flag leaf is generally assumed to give 14 days of protection. A second pass 14 days after the first one resulted in the yield boost.

Results from plant growth regulators also proved interesting. Yields increased at several sites where one product was tested, even though growth regulators are designed for harvest management. She said some manufacturers make yield claims on their growth regulators.

“Problem is, how consistently does that happen?” said Strydhorst.

“Because plant growth regulators are kind of finicky and they interact with a plant’s hormonal system, they can do wacky things when combined with other agronomic practices.

“My job is to make mistakes on a small plot so they’re not made on a large scale. And if we consistently see a trend, then we can warn farmers against that certain practice so they don’t have a yield and economic loss from them.”

Results from supplemental UAN were highly dependent on precipitation totals for each of the sites. Those with little moisture obviously did not benefit from extra nitrogen.

Less data is available on barley, so Strydhorst said she has less confidence in results at this early stage.

However, fungicide modes of action and timing showed that the decision to spray was often more important than fine-tuning the application.

Strydhorst's project is an offshoot of the Wheat 150 and Barley 180 field trials in Alberta, which hope to achieve those numbers in bushels per acre.

The trials tested the same three management practices that Strydhorst is using.

"I think one of the problems with the Wheat 150 and the Barley 180 ... is the yield potential across Western Canada just isn't there because we do have moisture limiting our yield in so many of the regions," she said.

Strydhorst, who discussed her early findings at the Farming Smarter conference Dec. 2, said wheat provides 20 percent of humanity's calories and wheat demand increases by 1.7 percent every year.

Wheat crop productivity will have to rise markedly if the world expects to meet the calorie needs of nine billion people by 2050.

It now increases 1.1 percent per year globally and 1.4 percent per year in Western Canada.

She said crop breeding will make up some of the needed increase, but advanced agronomic practices will also play a major role.