Try Side-by-Side Trials to Check Fungicide Impact on Corn Yield

Roger W. Elmore
Iowa State University, relmore@iastate.edu

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Abstract
The decision of whether we should apply a fungicide to corn in mid-season will depend on two sets of factors. First are the main economic drivers: the value of the corn produced, and the costs of the fungicide and its application. The second factor that balances these is the degree to which yield is actually affected.

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Try Side-by-Side Trials to Check Fungicide Impact on Corn Yield

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By Roger Elmore, Department of Agronomy

The decision of whether we should apply a fungicide to corn in mid-season will depend on two sets of factors. First are the main economic drivers: the value of the corn produced, and the costs of the fungicide and its application. The second factor that balances these is the degree to which yield is actually affected.

If yields are not affected or if the yield gains are real but when translated into dollars per acre are less than the costs of the fungicide and its application, then the application was not profitable. However, if the yield changes are real and the price of corn is high enough to push the return over the cost of the fungicide and application, then it may be profitable.
But how can we know if the yield changes are real or not? The only way to really know is to put out some check strips in your own field and do some side-by-side testing with replication. It is not fair or accurate to compare year to year because too many other variables play into yields from one year to the next. Instead, split the field into equally sized portions and randomly apply different treatments to each. The harvest area of each treatment needs to be identical.

For example, this could be accomplished by treating a 16-row section with fungicide, leaving the next 16-row section untreated and then harvesting the middle four rows for comparison. If the fungicide is applied by air, wider strips are necessary to accommodate the spray pattern and alleviate possible drift concerns.

The best way to compare is by replicating the process within a field or across multiple fields. For example to replicate across fields, if 10 farmers in the area are interested in using preventive fungicide to increase yield, they should all conduct the tests in about the same way. This will provide the most accurate results.

Whatever you do, you have to do it in a fair and nonbiased way.

_Roger Elmore is a professor of agronomy with research and extension responsibilities in corn production._

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