

Use Of Strobilurin Fungicides By Top-Yielding Corn Producers In 2012

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Fungicides in the strobilurin class (or “strobi” class) are highly effective products for control of certain important corn diseases. Brand names such as Headline®, Quadris®, Stratego®, Evito®, Fortix® and Approach® contain strobilurin fungicides¹. Strobilurin fungicides are excellent for preventative control of gray leaf spot, northern leaf blight, and southern rust, all of which are concerns in Kentucky corn production.

According to the 2012 National Corn Yield Contest results (report available at: <http://www.ncga.com/for-farmers/national-corn-yield-contest>), 40 percent of top-yielding producers² used a foliar strobilurin fungicide at least once in their contest-winning field. Of course, of this also means that 60 percent of the top-yielding producers did not apply a foliar fungicide treatment in their contest-winning field.

If we look at the 2012 Kentucky Yield Contest results (at http://www.uky.edu/Ag/Grain-Crops/YieldContest/CornYieldContest/2012CornContest_WinnersProductionSummary.pdf), we find that only one of nine Kentucky winners used a foliar spray of a strobilurin fungicide in the contest-winning field.

The above indicates that high-yield corn producers sometimes – though not always – perceive a benefit from applying a strobilurin fungicide in high-yield fields. Some of the national winners reported applying fungicide in order to reduce stress on crops, whereas others reported applying them for disease control.

Strobilurin fungicides do sometimes promote growth and leaf health even in the absence of significant disease pressure, and this can sometimes result in an economic benefit (even a very substantial one). However, these stress-reducing and growth-promoting effects are variable from field to field and year to year, ranging from

a yield loss of 5+ bushels to a 20+ bushel yield increase. Given that many of the national winners that applied fungicide farm in states with high humidity, we suspect a substantial number of them applied fungicide for reasons of disease control (though we don't know for sure, since survey data are unavailable).

What does this mean for producers?

Strobilurin fungicides are effective sometimes, but cost money when they are not. Disease risk is still the best guidance for deciding whether a strobilurin application might provide an economic return. Figure 1 provides a summary of disease risk factors. The more of these that are in place, the more likely a producer is to see an economic benefit. For example, it may make sense to apply a strobilurin to a bottom field under irrigation, or a field of corn-after-corn under conservation tillage.

Since crop response to strobilurin fungicides can be so variable, there is no substitute to running your own strip trials. Extension agents can provide guidelines on ways to optimize the information you get from a strip trial. Always be sure to leave agronomically similar untreated control strips for comparison.

1 Note: Strobilurin fungicides include *pyraclostrobin* (the active ingredient in Headline®), *azoxystrobin* (the a.i. in Quadris®), *trifloxystrobin* (one of two a.i.'s in Stratego®), *fluoxyastrobin* (the a.i. in Evito® and one of the two a.i.'s in Fortix®), *picoxystrobin* (the a.i. in Approach®), and several other pre-mix fungicides.

2 The report provides state-by-state results for anywhere from one to three growers in each production class. All of these were included in our count. Δ

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Risk Ladder to Determine Likely Response to Foliar Fungicides in Corn

Factors that Increase Risk

- Susceptible hybrid
- Continuous corn
- No-till
- Late planting
- Overhead irrigation
- Field history of disease and lodging
- High plant population and/or yield potential
- Disease activity at tasseling
- Disease-favorable weather forecasted



Figure 1. Decision guide for determining the likelihood of an economic response to foliar strobilurin fungicide in corn in Kentucky. The higher on the list, the more important the factor.