

Spray timing is not everything

By JOHN VOGEL

Key Points

- Disease control, plant health benefits boost fungicide allure.
- Growth regulator effects, alone, may help or hurt yield potential.
- With corn's early tassel window, applications must be timely.

YOU'VE heard the pitch: "X' fungicide boosts plant health and increases corn yields 12 to 16 bushels per acre over untreated corn." And, you've seen the corn and soybean yield contest reports noting fungicide use.

Strobilurins such as Headline and Quadris are excellent corn and soybean fungicides, particularly for plants under heavy disease pressure, says Arvydas Grybauskas, Extension plant pathologist at the University of Maryland. "Their allure comes from the fact that they also have secondary plant-growth-regulator effects that delay senescence, keep the plants green longer and produce a number of other temporary physiological benefits."

Secondary benefits have been, in part, the basis for aggressive sales pitches and even trademarking of "plant health." But there are other important considerations, he cautions.

Maybe you didn't hear this

In the absence of disease pressure, responses due to the plant-growth-regulator function

are unpredictable. They may occasionally result in higher yields — or hurt yields.

The bigger question is whether they should be used regardless of field disease potential. "Indiscriminant use of any fungicides is not a best management practice," he asserts. "It's very tempting to use an insurance approach, especially if you might get a response even if there's little or no disease pressure."

But widespread use over large acreages of a single pesticide class leads to resistance development. "In Europe, where fungicides are used more heavily in field crops, resistance to strobilurins in some plant pathogens has already been demonstrated," he warns.

Fungi also serve as natural biocontrol agents, keeping some insect pest populations in



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SKINNY WINDOW: Corn fungicides tend to have a narrow application window, requiring high-clearance or aerial application.

check. Indiscriminant fungicide use can lead to an increased use in insecticides because pests formerly not an issue suddenly become more of a problem.

The first defense against diseases is selecting hybrids and cultivars having resistance to them. In-plant resistance is still the cheapest, most environmentally sound disease-management tool.

Crop rotation still is the single most important disease-risk reducer. But when you

grow back-to-back crops of a relatively susceptible hybrid or cultivar, deciding to use a fungicide suddenly is a lot easier and much more likely to give an economic return.

Timing is still critical

The optimum application window for Headline on corn, for example, is from full tassel through blister, or prior to onset of disease, according to BASF's label. That necessitates application via a high-clearance

ground rig or aerial applicator.

Gray leaf spot is the primary target of this fungicide program, says Grybauskas, because it tends to develop relatively slowly. Too early an application won't provide a disease-control benefit because the fungicide doesn't last forever.

Not all high-clearance ground rigs can run in tasseling field corn, and Headline's label recommends an adjuvant for ground applicators.

Low-volume airplane applications require a crop oil to keep the fungicide from drying up in the aerosol before reaching the target. The non-ionic surfactant and crop oil improve canopy penetration and spray distribution on the leaves.

Some surfactants, applied before tasseling, can cause poor pollination and damage developing kernels, cautions Grybauskas. That's why the best timing is at or very near tassel formation and no later than post-pollination early kernel development, adds the plant pathologist. U.S. EPA also set that narrow window to keep chemical residue levels at or below legal limits in harvested seed.



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