

A mixed review for fungicides in alfalfa

THE use of a foliar fungicide on alfalfa has been a popular topic at winter forage meetings and internet chat rooms as producers attempt to reconcile university research with the experience of many alfalfa growers. The approval of fungicides such as Headline (BASF), Kocide (DuPont), Fontelis (DuPont) and Quadris (Syngenta) for use on alfalfa has spurred interest in this tool to help reduce stem and leaf diseases, allowing for higher harvestable yields.

In an example of desirable collaboration across universities, researchers from the University of Wisconsin, University of Minnesota and USDA-ARS conducted field trials over the past three growing seasons to test the effect of fungicides alone or in combination with insecticides.

The response to fungicides has been very inconsistent across locations and cuttings. In 2011, there was a statistically significant gain in alfalfa yield with Headline application (6 ounces per acre) in 6 of the 14 comparisons. In 2012, with a relatively dry spring, there was a significant yield response to Headline in only 9 of the 28 comparisons. Results in 2013 with a wet spring showed a positive response to Headline in 5 of the 12 comparisons over an insecticide alone (Warrior II, Syngenta, 1.2 ounces per acre) with an average improvement of 0.17 tons of dry matter per acre (range of 0.07

to 0.28 tons of dry matter per acre).

Another unexpected result of these trials is that many locations showed no correlation between a reduction in fungal disease and a rise in crude protein or relative forage quality (RFQ) of the crop. It is difficult to understand why saving leaves would not result in more crude protein and a dilution effect on stem yields to improve RFQ. However, it may be that sampling protocols and analytical methods simply do not detect the relatively small gains in yield and quality obtained by improved leaf retention.

Still find value

Despite the lack of consistent and statistically significant results from small-plot university research, farmer testimonials seem to suggest many producers are observing a positive response to fungicide application. This is certainly evident in their comments about the visual appearance of their fungicide treated stands.

Even though grower ability to measure small differences in yield may be challenging, it appears that many growers are convinced of the economic advantage of fungicide treatment. It only requires about 0.1 to 0.2 tons per acre of added yield to justify the price of fungicide and application when the crop is selling for upwards of \$200 to \$250 per ton.

The required yield improvement necessary to justify fungicide use

is also less if growers are adding it to tank mixes of insecticide that they are already applying to control leafhoppers. Positive grower observations may also be the result of greater variability in their production-sized fields compared to smaller, replicated research plot studies in terms of canopy humidity levels, fungal loads, trash content and less than optimum soil environments (low pH, low fertility, poorly drained soils) across larger acreages.

While there are other options, most of the fungicide research on alfalfa has been with Headline. Recommendations from BASF are to apply Headline at a rate of 6 to 9 ounces per acre (depending upon disease pressure) to 6- to 8-inch tall alfalfa prior to first cutting. The label states no more than two applications per cutting or three applications per season with a maximum use rate per season of 27 ounces per acre. Spray volume by ground is 15 to 20 gallons per acre and 5 gallons per acre for aerial application. Water volume by chemigation is recommended to be less than 0.5 inches.

Headline may be tank mixed with other labeled herbicides or insecticides and applied at least 14 days prior to harvest. Producer testimonials and company literature suggest early application to prevent fungal growth rather than thinking later maturity applications will eliminate disease problems after

they have become established.

Need a broad platform

More research is certainly needed on the effectiveness of other chemistries given the potential concern of resistant fungal populations. The good news is that, as growers continue to drive this market, more fungicides will likely add alfalfa to their approval list. As more research and producer experience is accumulated, there will likely be improved diagnostics as to when fungicides make the most sense such as in wet springs or on older stands.

From a scientific, published literature perspective, the jury is still out on the value of fungicides. However, fungicides would be expected to be most beneficial in growing conditions that are conducive to the development of stem and leaf diseases.

Wet growing conditions coupled with a heavy crop should theoretically respond to a greater degree to fungicide application. Application in the fall may improve plant health to help stands weather the winter. Fungicides should also be more beneficial in stands which are harvested at later stages of maturity and thus more susceptible to greater leaf drop. 🐄

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