

Foliar Fungicides On Alfalfa

DR. PAUL VINCELLI & DR. RAY SMITH

LEXINGTON, KY.

Last year, Headline® fungicide received a federal label for control of foliar diseases of alfalfa. Headline® may be applied on all alfalfa production: for seed, for hay, or for silage (with a 14 day pre-harvest interval in all cases). See additional label restrictions.

The active ingredient in Headline® (*pyraclostrobin*) is in the strobilurin family of fungicides. This family is known for excellent control of many fungal diseases. There are numerous important alfalfa diseases in Kentucky that are reportedly controlled by Headline® (spring black stem and leaf spot, Lepto leaf spot, Stemphylium leaf spot, summer black stem and leaf spot, and common leaf spot). In addition to providing disease control, strobilurin fungicides, including pyraclostrobin, are also known for sometimes improving the overall physiological health of plants. Various physiological benefits have been observed in numerous plant species. However, these effects have been sporadic and unpredictable in the field.

Summary of public research

There are few public fungicide trials on alfalfa nationwide. Thus, last year we initiated a long-term spray trial on alfalfa. We also reviewed all the reports we could find reporting on field experiments evaluating strobilurin fungicides on alfalfa. The tests were conducted in 2010-2012.

The results of these analyses are shown in the table below, and key points are summarized:

1. In almost all comparisons, application of strobilurin fungicide reduced damage from foliar/stem diseases.

2. In spite of the reduction in disease damage, yield increase was observed in only five of 24 comparisons. Most of those yield increases occurred in earlier cuttings, consistent with manufacturer reports. When they occurred, yield increases were in the range of one- to two-tenths of a ton dry matter per acre.

3. Forage quality (measured in various ways; see table) was improved in very few compar-

isons. There were also several instances where quality was slightly reduced in the fungicide-treated alfalfa (data not shown, available on request).

4. The physiological “greening” effect of strobilurin fungicides was not reported in alfalfa in experiments where such observations were included in the report.

Significance

It seems clear that application of a strobilurin fungicide generally reduces levels of foliar disease in alfalfa. However, in research thus far, strobilurin fungicide was associated with in-

Parameter	Total no. comparisons*	No. beneficial responses**
Disease damage	24	21
Yield	24	5
Crude protein	16	2
Net energy for lactation	13	1
Relative feed value	5	1
Greening/senescence	5	0

Figure2. *Each strobilurin fungicide in each cutting = a discrete comparison **“Beneficial responses” refers, for example, to the fact that 21 times out of 24 evaluations, strobilurin fungicide reduced levels of disease. Statistical discrimination among treatments at 10% error rate (P<0.1)

creased forage yield in only about 20 percent of comparisons. Forage quality has not been meaningfully improved by strobilurin fungicides in research thus far. This latter finding surprises us, because we would expect that improved leaf health would translate to improved forage quality, since leaves represent high-quality forage. Continuing research is advisable, since the weather last year was unusually hot and dry, and results economically favorable to fungicide use could occur in wet growing seasons. Δ

DR. PAUL VINCELLI: Extension Plant Pathologist, University of Kentucky

DR. RAY SMITH: Extension Forage Specialist, University of Kentucky