

## To spray or not to spray – Will foliar fungicide be routine in the new corn production economics?

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In 2007, many acres of corn in Wisconsin were sprayed mid-season with fungicides, strobilurin or a strobilurin/triazole combination, (in Iowa and Illinois an estimated six million acres of corn were sprayed). Most acres applied had little or no disease at the time of application. Reasons for spraying vary and include the high price of corn, potential to control diseases, and a possibility of improved yield from "plant health" benefits. Until this year, fungicide applications to production cornfields were rarely practiced because they were not profitable. Many of the hybrids grown today have good overall tolerance to foliar diseases.

Results of fungicide trials have been mixed in Wisconsin (Table 1). In 2 of 11 trials a significant yield response occurred that covered the fungicide cost.

Some plant damage has been reported when using fungicide, some of it severe. There is NO confirmed correlation between damage and fungicide. There is no real evidence that continuous corn (no-and strip-till), routinely needs fungicide more often, but Anthracnose and Gray Leaf Spot inoculant potential is higher. Fungicide damage was related to weather and crop conditions in 2007, but it could happen again, so you may not want to apply pre-tassel.

The 2008 growing season is several months away, but decisions are already being made regarding purchase of fungicides. Fungicides should be used as a "tool" (along with other IPM practices) – to control diseases that are present and/or almost certain to be a problem. Consider the following factors before spraying:

- hybrid susceptibility,
- disease pressure at VT,

- weather conditions at VT and during grain fill,
- previous crop,
- the amount of crop residue present in the field,
- fungicide and application cost ,
- grain price, and
- read directions and restrictions on product label.

In general, a fungicide application is not recommended on *resistant* hybrids. On *susceptible* hybrids, a fungicide application may be warranted if disease is present on the third leaf below the ear leaf or higher on 50 percent of the plants at tasseling. With *intermediate* hybrids, a fungicide need only be applied if conditions are favorable for disease development. Spray if disease is present on the third leaf below the ear leaf or higher on 50 percent of the plants at tasseling, *and* the weather is warm and humid, *and* the field has a history of Gray Leaf Spot and/or Anthracnose, *and* >35 percent corn residue is present.

**Table 1. Corn and Headline™ fungicide response in Wisconsin. All applications were applied at labeled rates at VT. An asterisk indicates significance at  $P \leq 0.10$ . Fungicide cost is ~ \$22 an acre (cost of product and application), the breakeven yield response was a minimum of 6 bu/acre, assuming a corn price of \$3.75**

Year	Previous Crop	Tillage	No Fungicide	With Fungicide	Fungicide Increase	Did it pay?
			----- bushels per acre -----			
2007	Corn	No-till	216	222	6	?
	Soybean	No-till	203	230	27*	Yes
	Wheat	No-till	205	210	5	No
	Soybean	No-till	206	208	2	No
2006	Soybean	Chisel	226	229	3	No
	Corn	Chisel	214	217	3	No
	Corn	Chisel	227	227	0	No
2005	Corn	Chisel	181	186	5	No
	Soybean	Chisel	199	211	12	?
	Soybean	Chisel	212	213	1	No
2004	Soybean	Chisel	200	211	11*	Yes