

Plant Health or Disease Control?

There are two reasons to consider using fungicides on corn and soybeans. The first is to protect yield by controlling or preventing disease. The second is to increase yield by improving overall plant health.

The threat of Asian soybean rust (ASR) spawned a proliferation of products that can prevent or control ASR, but also work on many of the lesser fungal leaf and stem diseases, as well.

Most of these lesser diseases have not been considered economic threats in Iowa. In fact, even though they may be present in fields, they're seldom even scouted, much less treated.

In putting out test strips of fungicides as part of preparing for a possible ASR outbreak, growers from the Midsouth to through the Midwest have noticed that treated beans are healthier. Some have reported that plants are leafier, greener, and hold their leaves longer in the fall.

The question is whether this can be attributed to a general boost in plant physiology or to control of low-level chronic disease(s). Either way, this plant health effect has been responsible for yield differences ranging from little or no difference to as much as 15 bu., by some reports.

In ISA On-Farm Network™ replicated strip trials, the range of response last year was from -2.9 bu. to an increase of 8.6 bu. per acre. While an 8.6 bu. increase would more than pay for the product and application costs, only about a third of participants in last year's trials would have done better than break even, even if they were selling beans at today's prices.

Economics of Fungicide Use

Soybeans

Soybean Market Price	Total Fungicide and Application Cost						
	\$14.00	\$15.00	\$16.00	\$17.00	\$18.00	\$19.00	\$20.00
\$5.00	2.8	3.0	3.2	3.4	3.6	3.8	4.0
\$5.50	2.5	2.7	2.9	3.1	3.3	3.5	3.6
\$6.00	2.3	2.5	2.7	2.8	3.0	3.2	3.3
\$6.50	2.2	2.3	2.5	2.6	2.8	2.9	3.1
\$7.00	2.0	2.1	2.3	2.4	2.6	2.7	2.9
\$7.50	1.9	2.0	2.1	2.3	2.4	2.5	2.7
\$8.00	1.8	1.9	2.0	2.1	2.3	2.4	2.5

Corn

Corn Market Price	Fungicide and Application Cost						
	\$14.00	\$15.00	\$16.00	\$17.00	\$18.00	\$19.00	\$20.00
\$2.00	7.0	7.5	8.0	8.5	9.0	9.5	10.0
\$2.50	5.6	6.0	6.4	6.8	7.2	7.6	8.0
\$3.00	4.7	5.0	5.3	5.7	6.0	6.3	6.7
\$3.50	4.0	4.3	4.6	4.9	5.1	5.4	5.7
\$4.00	3.5	3.8	4.0	4.3	4.5	4.8	5.0
\$4.50	3.1	3.3	3.6	3.8	4.0	4.2	4.4
\$5.00	2.8	3.0	3.2	3.4	3.6	3.8	4.0

To be profitable, the projected return from a fungicide application must be more than enough to pay for the product and application costs. Areas in yellow show needed yield response to break even at two different recent commodity prices and three different estimates of product and application costs.