Effect of Foliar Fungicides on Corn Yields in Iowa in 2012

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Abstract
Every year we evaluate foliar fungicides on corn at several locations across Iowa for disease management and yield response. In 2012, we tested foliar fungicides at six Iowa State University Research and Demonstration Farms: southwest (Lewis), southeast (Crawfordsville), north (Kanawha), northwest (Sutherland), northeast (Nashua) and the agronomy farm (Ames). Fungicides were applied at either growth stage V5, R1, R2 or both V5 and R1.

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Effect of Foliar Fungicides on Corn Yields in Iowa in 2012

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Table 1. Fungicide treatments evaluated at six locations in Iowa in 2012.
The 2012 growing season was characterized by extremely hot and dry conditions. Very low foliar disease occurred in all trials and consequently disease severity was not assessed. A windstorm caused severe lodging at the northern and northeastern research farms. Standability and ear rot severity (percent ear with mold) were assessed within 48 hours of harvest at each location. Standability was assessed as the percent of plants lodged in a section of row in the middle of the plot. Ear rot severity was negligible to low (southwest research farm). There were no effects (P<0.1) of fungicide on standability or ear rot.

The mean yield response of corn to a fungicide application across all locations was 5.7 bu/acre and 54 percent of the treatments yielded more than 4 bu/acre compared to the untreated control, although no statistical differences in yield between the untreated control and a fungicide application were detected (P<0.1) for any treatment at any location. Fungicide responses varied widely among and within locations. Mean yield response for each treatment timing at each location is shown in Table 2.

Table 2. Mean yield response of corn to a foliar fungicide application applied at either V5, R1, R2 or both V5 and R1 at six locations in Iowa in 2012.
In general, fungicides resulted in more of a positive effect on yield at the northern locations than the southern locations. The mean yield response of an application of fungicide at V5 (4.9 bu/A) was lower than that of an application during the reproductive growth stages (5.5 and 6.2 bu/A for R1 and R2 applications, respectively). A double application of fungicide at V5 and R1 resulted in a similar yield response across all locations to one application at growth stage R2 (both 6.2 bu/A).

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