

DIFFERENCES IN HYBRID SENSITIVITY TO POSTEMERGENCE CORN HERBICIDES.
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Research has been conducted since 1983 to determine herbicide tolerance of Golden Harvest brand hybrids to various postemergence herbicides. Trials have been conducted at 7 to 9 locations throughout the Corn Belt in a randomized complete block design (strip-plot arrangement) with three or four replications per location. Up to 24 herbicide treatments and/or herbicide treatment timings and up to 35 hybrids were evaluated at each site year. Herbicides were tested at their highest commonly used labeled rate and at two crop timings. Crop timings were 5 inch (V2 growth stage) and 12 inch (V5-V6 growth stage) crop height. Plots were maintained weed free to eliminate the effect of weed control efficacy differences among herbicides on crop yields. Weeds were controlled by treating the entire plot area with a chloroacetamide applied preemergence and by hand weeding if necessary. Grain moisture and yield were collected using a small-plot combine.

Results clearly indicate that hybrids differ in their sensitivity to most postemergence herbicide programs. Environment also plays a role in herbicide safety and can be a dominant force influencing crop response in specific field situations. Study design and interpretation methodology at Golden Harvest ensure that only true herbicide by hybrid interactions, and not interactions with environment, are reported. The system of analysis developed at Golden Harvest employs LSDs to separate herbicide programs for each hybrid at each trial location into crop safety categories based on yield. Safety categories are then tallied for each herbicide/ hybrid combination over locations and years. Crop safety ratings for each herbicide/hybrid combination are assigned based on the distribution of responses across each safety category over years and locations. Crop safety ratings include a green star, blue circle, orange yield sign, and black "X," which stand for low risk, standard risk, application management required, and not recommended, respectively.

Golden Harvest herbicide ratings are designed to help maximize yields by maintaining adequate weed control while optimizing crop safety. Producers are encouraged to first select the best hybrid for their field conditions, and then the best herbicide(s) based on predominate weed species. Herbicide ratings are then consulted for the selected hybrid and herbicide combination(s). Guidelines are provided for hybrid/herbicide combinations rated "application management required" to minimize potential yield loss associated with this crop safety category. Guidelines are driven by both Golden Harvest data and herbicide label recommendations and include crop timing, herbicide rate, adjuvant option, environmental condition "watch-outs," and tank-mix partner considerations.