



CORN HAIL DAMAGE

TRIAL OVERVIEW

- Every year, many acres of corn are hailed on. Depending on the growth stage and severity of the hail damage, minor to significant losses can be incurred. For example, a pea-sized hail event with light intensity at the R6 stage will likely bruise the corn ear but not cause significant yield loss, while a golf ball-sized hail event with moderate intensity at VT would cause significant yield loss.
- To help farmers understand their options to mitigate yield loss incurred after a hail event, a study was initiated to evaluate whether various amendments, such as fertilizer or a fungicide, could reduce yield loss from a simulated hail event on corn at the V14 growth stage.

RESEARCH OBJECTIVE

- This study was conducted to evaluate the impact of applying fertilizer and/or a fungicide following a hail event at the V14 corn growth stage.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Gothenburg, NE	Cozad silt loam	Corn	Strip tillage	04/27/2017	11/13/2017	230 bu/acre	34,000

SITE NOTES:

- Three levels of hail damage, measured by plant defoliation, were simulated on July 14, 2017 using a string trimmer to corn at the V14 growth stage; simulation levels were 0%, 30%, and 60% defoliation.
- Foliar treatments were applied on July 17, 2017, three days after the simulated damage. The foliar treatments included:
 - A) Ammonium thiosulfate 12-0-0-26S (ATS) at 5.19 gal/acre
 - B) Headline AMP® fungicide at 12 oz/acre
 - C) Headline AMP fungicide at 12 oz/acre with ATS at 5.19 gal/acre
 - D) KS2075 (20-0-7.5-5S) liquid fertilizer at 1 gal/acre
 - E) KS2075 liquid fertilizer at 1 gal/acre with Headline AMP at 12 oz/acre
 - UT) Untreated control
- ATS was diluted to a 100 gal/acre application rate to prevent crop phytotoxicity.
- The study was set up as a randomized complete block with three replications.
- Yields and plants that died prematurely were recorded.

UNDERSTANDING THE RESULTS

- Simulated hail damage impacted yield as expected, with significant yield loss at the 30% damage treatment compared with the 0% damage treatment and even higher losses at the 60% damage level (Figure 1).
- 18% more plants died prematurely in the 60% hail damage treatment compared to the 0% and 30% treatments.
- None of the foliar treatments reduced yield loss compared to the untreated control (Figure 2). These results were similar to research completed in 2015 and 2016 where no benefit was realized when applying a fungicide 7 days after a hail event at two different corn growth stages.

WHAT DOES THIS MEAN FOR YOUR FARM?

- Over the last three years of testing, no treatment has been found to reduce yield loss in corn from a simulated hail damage event.
- Small plot research like this allows for comparison of many corn products at different growth stages or levels of damage. However, small plot research cannot account for field-level environmental influences, such as humidity or application from an airplane, which could alter results.

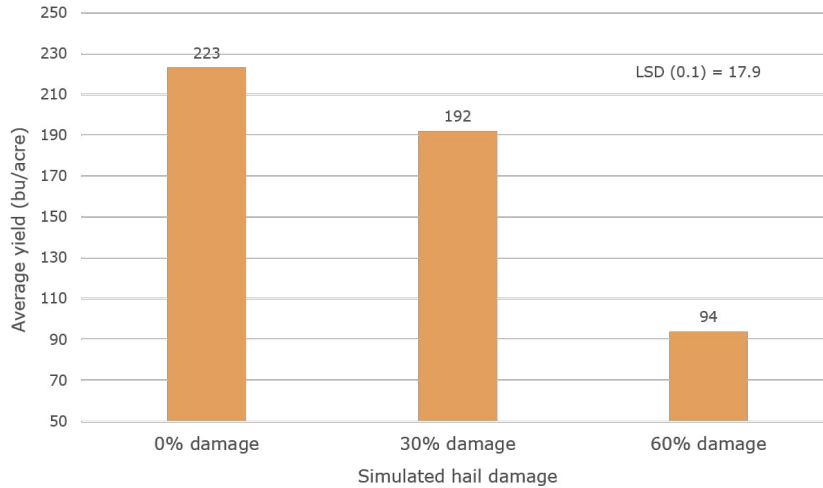


Figure 1. Average yield across all foliar treatments for each hail damage treatment

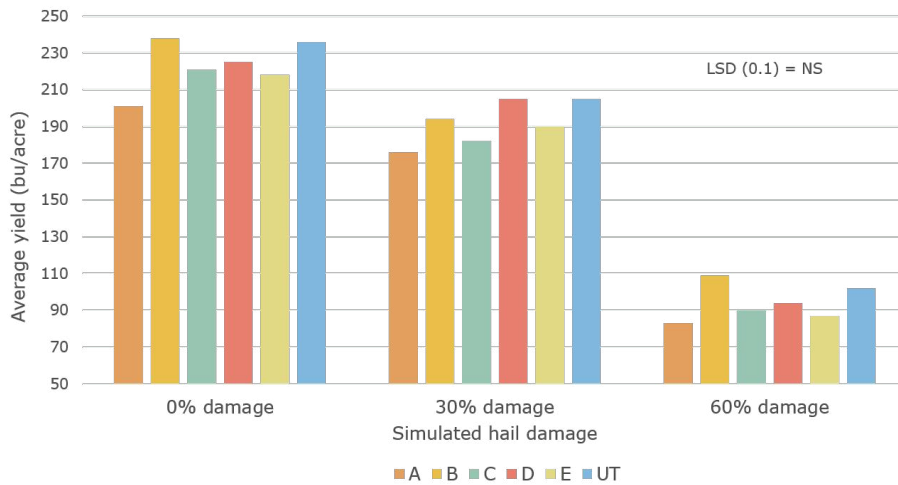


Figure 2. Average yield in each foliar treatment at each hail damage treatment. Treatment A) ATS only, B) fungicide only, C) ATS + fungicide, D) KS2075 only, E) KS2075 + fungicide, UT) untreated control.



Figure 3. A 60% simulated hail damage plot in the foreground. The 0% hail damage plot can be observed further down the row where the canopy is denser.



LEGAL STATEMENT

The information discussed in this report is from a single site, replicated demonstration. This information piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

For additional agronomic information, please contact your local seed representative. Developed in partnership with Technology Development & Agronomy by Monsanto.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Headline AMP® is a registered trademark of BASF Corporation. All other trademarks are the property of their respective owners. ©2018 Monsanto Company All Rights Reserved. 171201154714 121917CAM