



Project Objective: Evaluate the effect of iNvigorate biological from AMVAC on improving fertilizer efficiency and corn yield.

AMVAC iNvigorate Insights:

1. In these trials there was not enough of a yield difference to suggest that the iNvigorate treatment improved the nitrogen fertilizer efficiency in corn, when nitrogen rates were reduced by 40 lb/acre.
2. Average yields were not reduced from the field level average when nitrogen was reduced by 40 lb/acre, suggesting that the field was adequately fertilized even when reducing by 40 lb/acre.

AMVAC iNvigorate Trials 2023

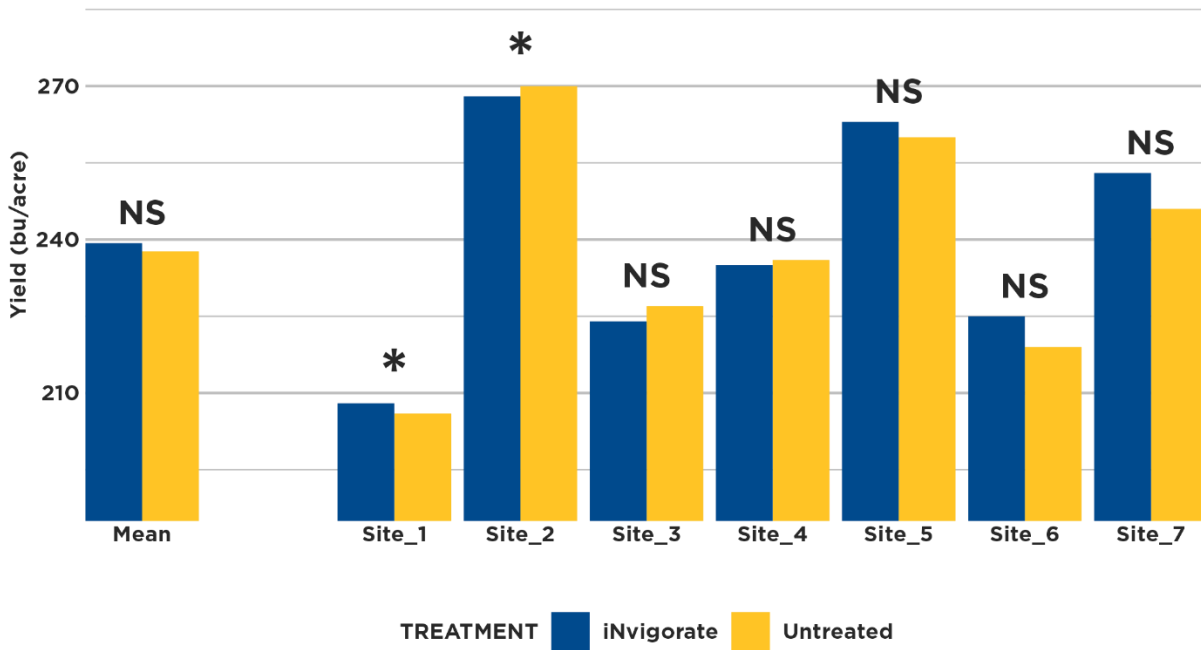


Figure 1. Yield difference between AMVAC iNvigorate and an untreated control in 2023. Sites not statistically significant are indicated by "NS", sites marked with * represent a significant response.

Across all sites in 2023 (Figure 2), plots treated with iNvigorate had a 1.6 bushel/acre yield advantage compared to the untreated control. This was not significant at a 90% confidence level with an expected yield response range of -0.86 – 4.08 bu/acre. Because the yield response occurred in the expected range it is not significant enough to statistically conclude that iNvigorate produced the observed response in yield alone. Individual site analysis showed a significant difference in yield at Site_1 and Site_2. Yield differences observed at Site_5, Site_6, and Site_7 were larger in value but were not statistically significant due to high variability in



the range of yield values. For example, Site_7 was a difference of 7 bu/ac, but it had high variability which led to increased uncertainty in expected yield response and rendered it not statistically significant.

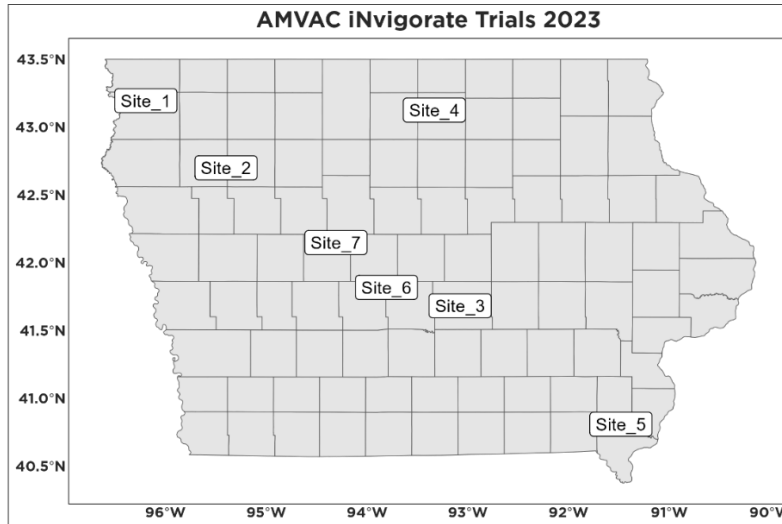


Figure 2. Site locations in 2023.

Trial Results Compared to Rest of Field

Site	Treatment		
	iNvigate	Untreated	Outside Trial
Site_1	208	206	199
Site_2	268	270	250
Site_3	224	227	209
Site_4	235	236	236
Site_5	263	260	250
Site_6	225	219	246
Site_7	253	246	254

Table 1. Comparison of within trial area average yield to the rest of the field's average yield.

Table 1 summarizes the actual yields per treatment with the inclusion of the yield from the remainder of the field. The untreated and the iNvigate in-furrow treatments both received 40 lb./acre of nitrogen less than the remainder of the field. While it is not reasonable to directly compare these treatments with the acres outside of the control, this general comparison indicates that fertility levels were high and the true understanding of the impact of the iNvigate product was not truly evaluated. Future research of this product or similar products will need to include additional fertilizer levels.