

GE TRANSITION: NON GMO CORN TRIALS OVERVIEW

OVERVIEW

Farmers are concerned that the ban on GMO corn and neonicotinoid pesticides could negatively impact the profitability of agricultural production. Experimental field trails were conducted to examine the management and profitability of GMO versus non-GMO corn. The transition to non-GMO corn requires a shift in seed procurement and herbicide regime and may affect yield. The 2020 growing season had generally favorable weather, with no major events, such as hail or pest pressures, that significantly affected plant health and yield.

Trial Participation	GMO Corn	Non-GMO Corn
Farms	7	7
Fields	7	10
Acres	330.5	71.5

OUTCOMES

- Trials suggest there is no significant difference between the net profitability of GMO and non-GMO corn production.
- Corn yield between neonic and non-neonic coated seeds was not significantly different, suggesting that neonics are not necessary for successful corn production.
- The wide spectrum of seed cost was the largest factor in determining profitability in corn trials, followed by variation in yield.
- The effect of corn seed prices on net profit was higher in 2020 than usual, given that commodity prices were severely depressed.

Cost Category	GMO Corn	Non-GMO Corn
Seed Cost Range (\$/ac)	\$70.17 - \$144.00	\$60.48 - \$132.75
Yield Range (Grain) (bu/ac)	169.1 - 242.2	131.3 - 253.9
Yield Range (Silage) (ton/ac)	20.1 - 28.7	25.6 - 27.2
Herbicide Cost Range (\$/ac)	\$21.60 - \$40.76	\$21.60 - \$40.76
Partial Profit ¹ Range (\$/ac)	\$365.57 - \$765.74	\$290.51 - \$786.88

1. Partial Profit includes the above categories and does not include non-affected cost categories like equipment depreciation, rent, fertilizer, water, crop insurance, etc.

TAKEAWAYS FOR THE FUTURE

- The price of corn seed is the largest factor that affects net profitability, followed by corn yield. Most producers have long-term relationships with seed suppliers.
- While corporate seed suppliers, like DeKalb and Pioneer, offer the latest non-GMO and GMO genetics they are also the most expensive.
- Farmers were provided detailed options to procure non-GMO corn seed without neonicotinoid coatings for 2021 trials and beyond, which should be a top priority for farmers.
- A more focused enterprise accounting framework will be used to understand how three key variables of corn production (i.e. seed and herbicide cost, yield) affect net profitability.
- The comparable success of non-GMO corn to GMO corn may be due to residual impact of using glyphosate to reduce weed pressure. Limiting the use of glyphosate for controlling weeds is a major concern of farmers, fearing that weed pressure could rise in the future. Other opportunities exist within most rotations to incorporate glyphosate as an herbicide outside the growing season of corn.

