GE TRANSITION: TRIALS OVERVIEW

OVERVIEW

The goal of this 2-year program is to understand the impact from the ban of GMO crops (i.e. corn and sugar beets) and neonicotinoid pesticides on Boulder County open space tenant farmers and develop economically and ecologically viable alternatives. Integrating lessons learned in regenerative agriculture from across the U.S. is key to the development of soil health practices on county lands.

	Alternative Crops	Soil Health	Forage Sorghum	Non-GMO Corn	Total
Farms Participating	5	6	2	7	9
Trial Fields	12	5	2	10	29
Acres	87.5	161.5	54	71.5	374.5

OUTCOMES

- There is no economically viable alternative to sugar beets for farmers that own beet shares in Western Sugar Cooperative due to the legal obligations of membership and the difficulty in selling or retiring beet shares.
- The most direct alternatives to GMO corn are non-GMO corn and forage sorghums. Trials suggest there is no significant difference between the net profitability of GMO and non-GMO corn production. Sorghum has slightly lower profitability but also tends to cost less to produce. However, questions remain around how weed pressure and other management changes will affect net profitability in the long-term.
- Non-GMO crops can be sold at competitive prices for animal feed to dairy and beef producers in Weld County, or can be fed to the producers' own animals.
- 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.

TAKEAWAYS FOR THE FUTURE

- A 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.
- Some farmers are concerned about returning to management regimes that require potentially more toxic pesticides. Glyphosate, which is a critical tool in GMO corn production, is rated Tier 3 (Slightly hazardous) by WHO. The primary herbicides that replace glyphosate in non-GMO production are Status (Tier 2- Moderately Hazardous) and Dual (Tier 3 - Slightly hazardous).[1]
- New supply chain channels and buyers are needed to scale alternative crops to the volumes that would displace corn. Dry beans and specialty wheat show promise.
- Regenerative practices that improve soil health (e.g. cover cropping, interseeding, rotational diversity, re-perennializing) showed promise but will require additional years of trialling to determine suitability to specific operations.

1. https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1

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