

Kansas Corn, with K-State Research and Extension, conducts an annual yield contest open to all active members of the Kansas Corn Growers Association.

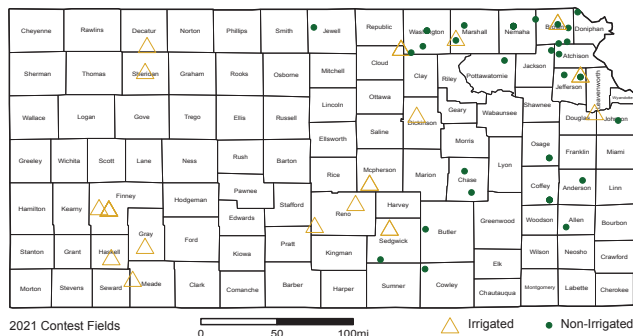
This contest:

- recognizes Kansas farmers achieving high corn yields,
- shares crop management and efficiency data among Kansas growers, and
- provides on-farm sustainability and profitability insights.

This document summarizes 2021 entries.

## Field Locations

- The 69 entries were located mainly in the eastern half of the state. (Figure 1).



**Figure 1.** 2021 contest field locations. (Irrigated, 28; Nonirrigated, 41)

## Comprehensive Summary

### Yield

- Grain yields for irrigated entries averaged 286 bushels per acre, ranging from 226 to 327 bushels per acre. Nonirrigated entries averaged 249 bushels per acre, ranging from 158 to 320 bushels per acre.
- Grain yields for moderate-yielding environments averaged 202 bushels per acre, ranging from 158 to 229 bushels per acre. High-yielding environments averaged 259 bushels per acre, ranging from 235 to 279 bushels per acre. Very high-yielding environments averaged 305 bushels per acre, ranging from 283 to 327 bushels per acre.

### Crop Management

- Conservation tillage and no-till were most common, with conservation tillage preferred in

higher-yielding environments. This includes strip-, minimum-, mulch-, and ridge-till.

- Plant populations ranged from 22,000 to 38,000 plants per acre. Average population increased with irrigation and yield environment, although yield increases were not significantly tied to higher plant populations in all cases.
- 30-inch rows were equally common in both irrigated and nonirrigated entries. Narrower row widths were more prevalent as yield environment improved.
- Comparative relative maturity selection lengthened with irrigation and increasing yield environment, although this was not always beneficial.
- Planting dates were similar across categories. Highest-yielding environments benefited from a later planting date.
- Pioneer (Corteva Agriscience) genetics were prevalent, accounting for more than 50% of entries in all categories. Nine total companies were represented.

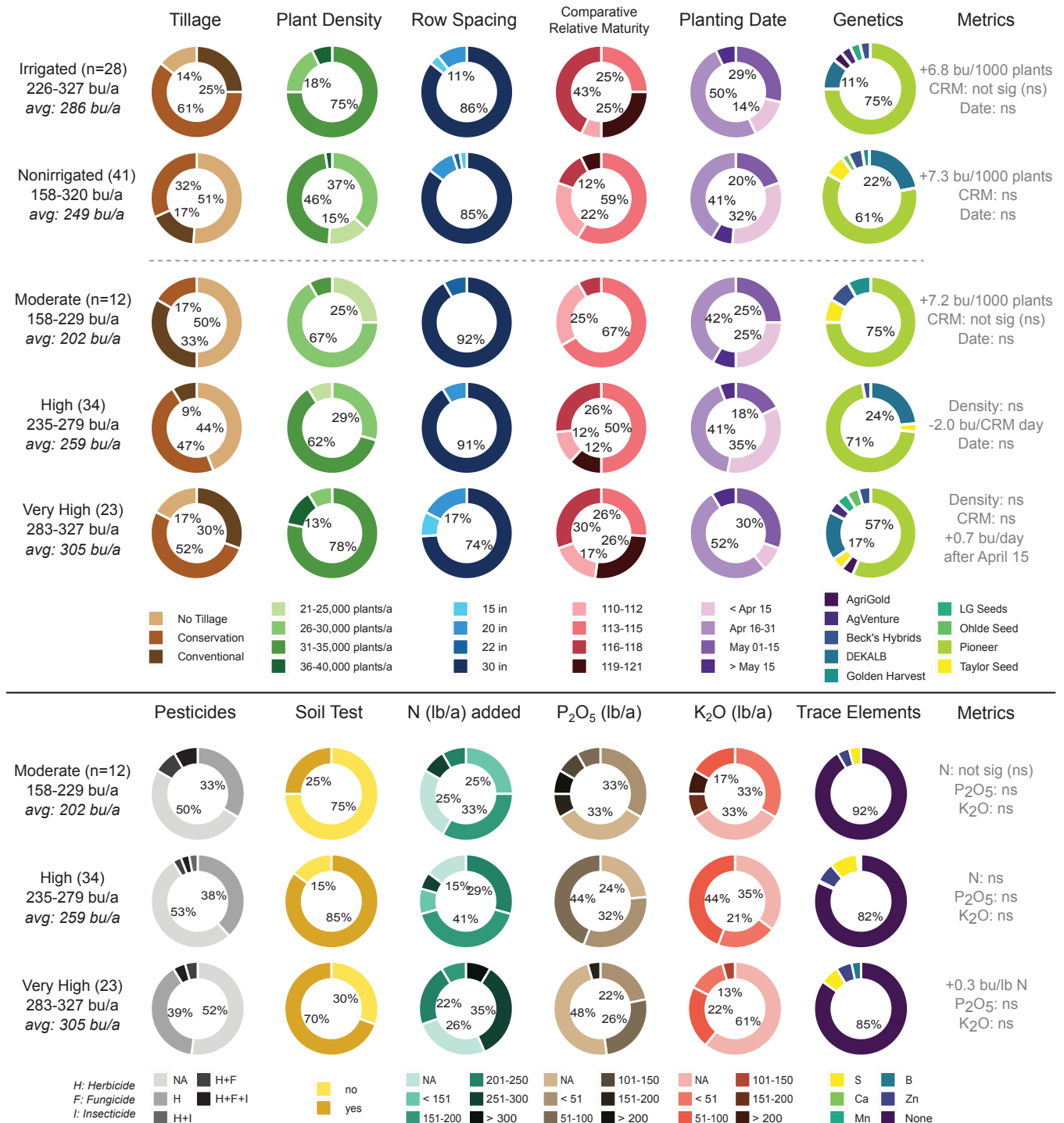
### Pest and Nutrient Management

- About half of entries in all yield environments reported pesticide use, with fungicide and insecticide more commonly used in moderate-yielding entries.
- Soil tests are used more in high-yielding environments than in moderate yielding environments.
- Nitrogen additions increased with yield environment, although yield benefit for this additional nitrogen was only significant for the very high-yielding environments.
- Both  $P_2O_5$  and  $K_2O$  additions decreased as yield environment improved, and no yield relationship was evident.
- Sulfur (S), zinc (Zn), and boron (B) were the most commonly applied trace elements, but accounted for less than 10% of entries in each yield level.

### Key Points

- Plant population is a critical management tool within yield environments.
- Soil testing is key to both economic and agronomic success.
- Lack of correlation between management practices and yield indicates an additional limiting factor for the 2021 season — likely water.

**Figure 2.** Data summary for crop (irrigation and yield environment) and pest and nutrient (yield environment) management of contest entries.



**Rachel Veenstra**  
Ph.D. Candidate, Agronomy

**Ignacio Ciampitti**  
Farming Systems Specialist



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