

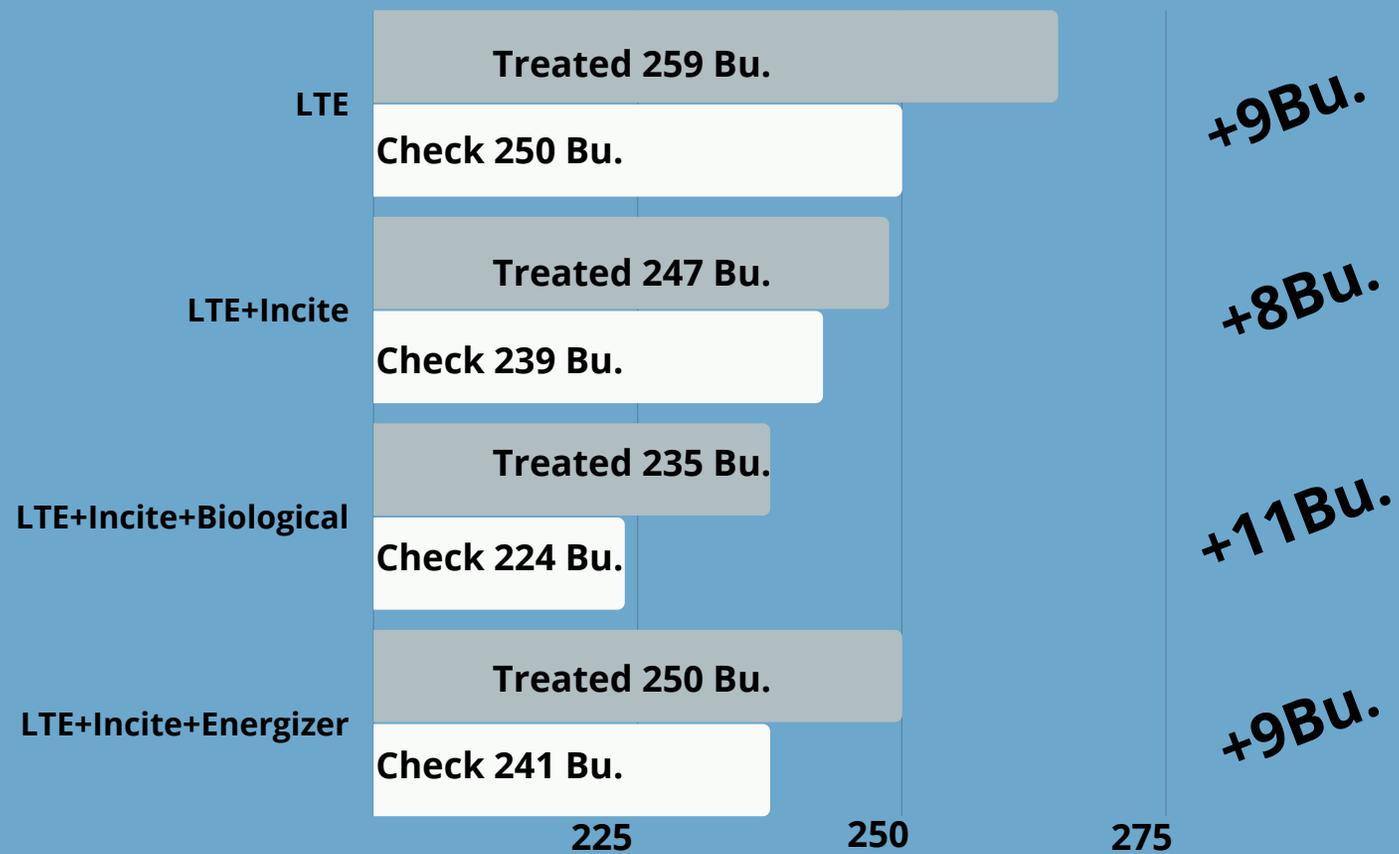
HB

HARBRAND
FERTILIZER



2021 Research Overview

Starter Fertilizer Trials



Our research shows replicated benefits from adding starter fertilizer and other value added products to our cropping system. Every treated and untreated trial spans areas between 5 and 25 acres, providing practical and relevant research data.



Soybean Starter Fertilizer Trials



Utilizing starter fertilizer in the soybean production system creates a way to maximize yield potential. With early planting and other season-related stresses, building a less stressful environment is critical for higher yields.



Soybean Boost Trials



Banding liquid fertilizer has been proven to be the most efficient way to maximize our soybean production. Technology and agronomic techniques are paving the way for higher yields.



2021 Harvest Issues

- 01.** October weather was plagued with record rainfall adding to harvest issues.
- 02.** Harvesting corn with standability issues took harvest priority leaving soybeans that were ready to harvest in the field.
- 03.** With late harvestability of soybeans we saw significant yield reductions.



October 20th

Nov. 5th

6-7" of rainfall in the month of October made October one of the wettest on record.

Solutions

- 01.** The yield map and harvest dates show a significant difference in late harvested soybean yields.
- 02.** Seeing the differences in the field makes us ask ourselves if there were any better solutions?
Even when corn standability issues arise should harvesting soybeans take priority?
- 03.**



10 BUSHEL LOSSES

It is crucial to note wins and losses from each growing season. Noting these differences in the field will become valuable knowledge for future growing seasons.

Late Herbicide Applications

- 01.** Creating a weed free environment in soybean fields has become increasingly difficult.
- 02.** Early planting and increased rainfall has led to major issues in late season weed escapes.

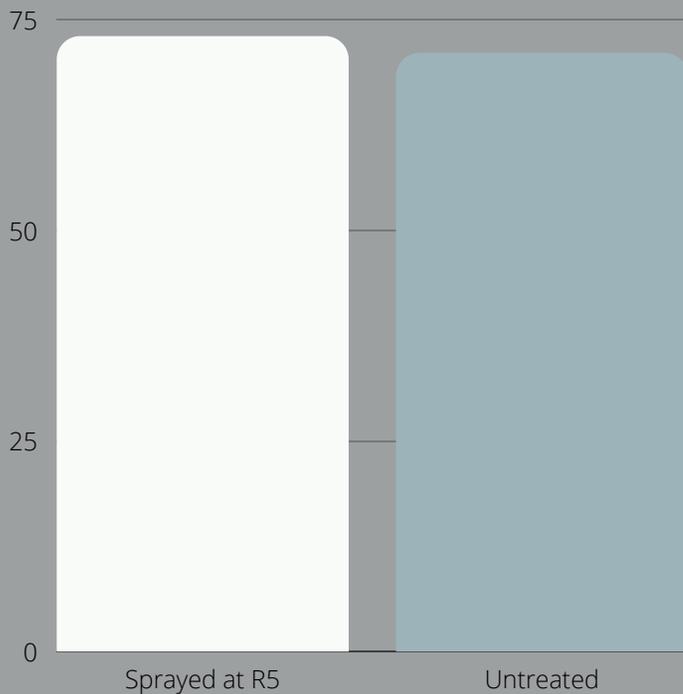


Solutions

- 01.** Spray solution should be sprayed at 25 GPA to allow for ample coverage.
- 02.** 46oz of liberty + 1 gallon of AMS-Extra per acre create great control of late season tough weeds.
A late season herbicide pass may create opportunities to add to the bottom line by spraying fungicides or other value added products at the same time.
- 03.**

73bu.

71bu.



Does spraying Liberty late season damage a soybean in it's reproductive stages?

THE DATA

- Two Separate Fields Located Less than 2 Miles Apart
- Identical Soybean Hybrids
- Planted on the Same Day
- Sprayed at the Same Growth Stage
- No Yield Reduction with the Spray Application was Observed

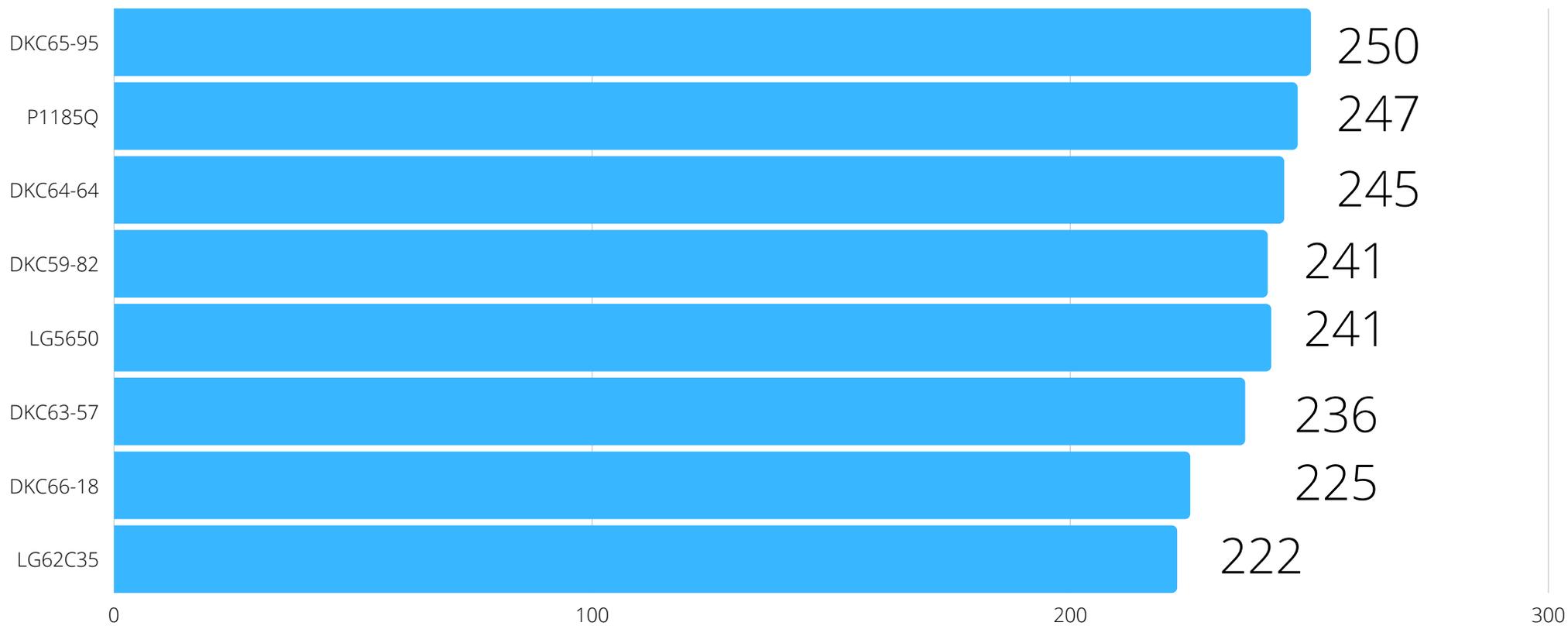
Corn Hybrid Study

THE DATA

Even with corn standability issues, most hybrids performed very well during the 2021 growing season. It is hard not to ask ourselves what this corn crop could have made if we didn't have harvestability issues. Even more importantly, what other forms of management could we have done in season to protect yields going into harvest?



Each Corn Hybrid Trial was planted in 100+ acre segments across multiple farms and soil types.

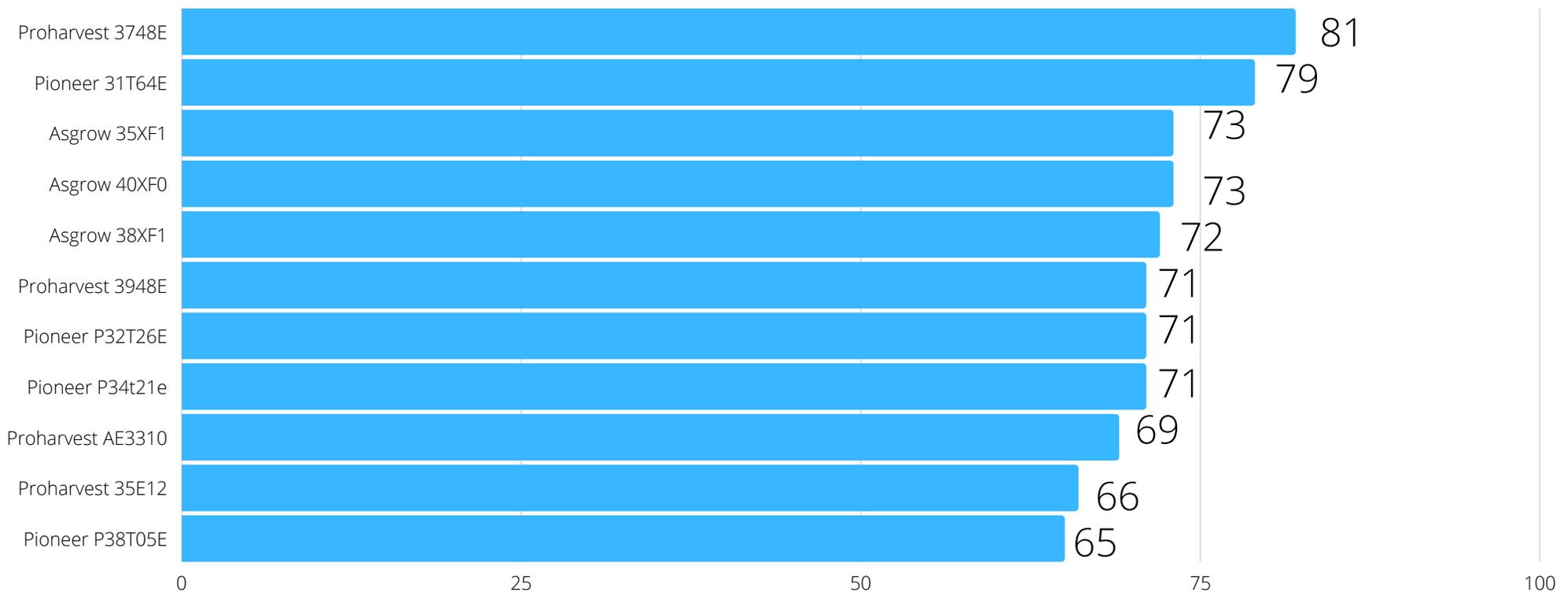


Soybean Hybrid Study

THE DATA

With new soybean herbicide traits on the market, it was important for us to find out how these traits stacked up against each other. When analyzing this data it is important to note all herbicide trait packages have yield potential. Figuring out what herbicide package will benefit your operation the most will be key going forward.

Each Soybean Hybrid Trial was planted in 80+ acre segments across multiple farms and soil types.



2022 Season Goals

- 01.** Create more diverse and unique ways to use liquid fertilizer and additive products in a production system.
- 02.** Stick true to our mission to provide crop management experience to the farming community.



Outlooks

- 01.** Start an in depth and detailed crop scouting program among our interns.
- 02.** Utilize frequent sap analysis testing to provide outlooks on what the crop needs going forward in the season.
- 03.** Using an aerial spray drone, implement an aerial application program to help aid in the plant's nutrient uptake and overcome season-related stresses.

DRONE APPLICATION

Our organization will be able to develop ways to capture more yield by testing products and systems during the growing season in a trial setting.

