



Illinois Extension
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

**University of Illinois Extension
and**



**Illinois Valley Community College
Agriculture Department Partnership**

**2021 Agronomy Research and Demonstration Projects
Cover Crops in Soybean/Planting Depth in Corn/Leaf Disease Susceptibility**

In 2021, the acreage at Illinois Valley Community College Campus Farm made available for demonstration and research projects (in cooperation with Luke Holly) expanded. In addition to the 10 acre plot dedicated to corn research projects, 56 acres planted to soybean in 2021 were planted to



cover crops in the fall of 2020. This expansion was accomplished with input and support of a number of individuals and agribusinesses. Our sincere thanks to the following entities and individuals who recognize the value of localized research and demonstration projects and share inputs and expertise.

CNH Industrial Innovation and Agronomy teams–

Trevor Stanhope
Lily Cobo
Jose Guzman
Nick Jablonski

Corn Seed Donation –

LG Seed/NK Seeds/CROPLAN - Montana Knoblauch, Sun Ag Inc.
Pioneer – Lukach Seed Agency
DeKalb – Jamie Eilts, Evergreen FS
LG Seed – Bruch Farms, Gary Bruch Adam McVey
NuTech – Corey Matter

Cover Crop Seed –

Sheena Schmidt, Ford and Son's
Samantha Schmidgall, Ag View FS

Cover Crop Planting –

Dave Callan, GRAINCO FS
Greg Simms, GRAINCO FS

Cover crops planted into corn stubble before soybean

A field dedicated to seed corn production in 2020 consisted of 4 large scale plots (each approximately 14 acres) planted to an individual cover crop or a cover crop mix. The seed was blended (if needed) and surface applied with a spreader using pell lime as a carrier to the corn stalks. Seed to soil contact was enhanced with a vertical tillage tool. One plot was intended to winter kill (Plot 2) and three were expected to overwinter and resume growth in the spring.

Plot 1 Cereal Rye

Plot 2 Oats and Radish

Plot 3 Annual Ryegrass, Radish, and Turnips

Plot 4 Cereal Rye and Radish

All 4 treatments had excellent emergence and fall growth. As expected, the oats and most oil seed radish winter-killed. Cover crops with spring growth were terminated the week of soybean planting (April 28th). Soybeans were planted in 30 inch rows at a population of 140,000.



Cover crop Summary

- Overwintering cover crop options visibly reduced winter annuals
- Cereal rye reached 8 – 14" at termination
- Despite very dry and hard soil conditions at planting, soybean emergence was uniform across plots (aided by early May precipitation)

Yields (measured with yield monitor) did not vary between three cover crop and no cover crops. Yields recorded between 62 – 66 bu. per acre.

Corn planting depth

Dry soil conditions at planting had several field agronomists recommending increasing corn planting depth to reach moisture. Recommendations ranged from 3 to 4 inches. Current recommendations in the Illinois Agronomy Handbook suggest that for most conditions, corn should be planted 1½ to 1¾ inches. Later in the season, when soil temperatures are higher and evaporation is greater, planting as much as 2½ inches to reach moist soil may be advantageous, especially if the forecast is for continued dry weather. Four corn varieties were planted at 1½ and 3 inches deep. Variance in time to emergence, stand at V5, and final yield were evaluated.

Planting depth summary

- Corn varieties planted at 3 inch depth vs 1 ½ depth required an additional 4 – 5 days to emerge
- Deeper planting depth did not have an effect on stand at V5 or final harvest
- Planting depth did not affect final yield in this study

Hybrid leaf disease susceptibility

With the annual potential for leaf disease incidence we wanted to compare disease infection rates on hybrids rated with high levels of tolerance to leaf diseases (Gray Leaf Spot, Northern Corn Leaf Blight, and Tar Spot), to a hybrid considered average. Corn was planted on April 28th with favorable planting conditions. Emergence was excellent and the plot received several localized rains through early June. Early July brought a substantial rainfall event that carried the crop through tasseling. The plot was sprayed with a fungicide at R1. Late July and August were mostly dry. Harvest took place on October 1.



Hybrid leaf disease susceptibility summary

- Despite receiving an R1 fungicide treatment, all corn varieties were infected by Tar Spot late in the season
- Southern Rust, also was present in 2021, initial infection occurred near tasseling or R1

- Variation across replications resulted in high LSD (least significant differences) within the study, suggesting there was not a significant difference between hybrids at this location in 2021
- Yields across plots ranged from 206 to 218 bu. per acre and averaged 16 to 17% moisture at harvest



We are looking forward to the continuation and further expansion of projects at the Illinois Valley Community College in future years.

Russ Higgins

Extension Educator, Commercial Agriculture
University of Illinois Extension
Phone: 815-274-1343
rahiggin@illinois.edu

Willard Mott

Agriculture Instructor & Program Coordinator
Illinois Valley Community College
815-224-0413
willard_mott@ivcc.edu

For more information contact:

University of Illinois Extension- Bureau, LaSalle, Marshall, Putnam Unit at 815-224-0889