

Nebraska Soybean Board
Year-End Summary Research Report Form for Multi-Year Projects

Please use this form to summarize the practical benefits of your research project and what has been accomplished. Your answers need to convey why the project is important and how the results will impact soybean production.

Note that this form must be submitted with the 4th Quarter Report in all multi-year projects.

Project # and Title: #702; Effect of Planting Green on Palmer amaranth in Soybean **Principal Investigator:** Amit Jhala

Year of Multi Year: 2 of 3 (example: Year 1 of 3, Year 2 of 2)

1. What was the focus of the research project?

- (1) To determine if planting soybean in standing cereal rye cover crop can suppress Palmer amaranth emergence better compared with early termination (2 weeks before soybean planting).
- (2) To evaluate effect of planting green on performance of residual herbicides applied pre-emergence for control of glyphosate-resistant Palmer amaranth in soybean.
- (3) Evaluate effect of early termination of cereal rye versus planting green on soil health, soybean yield, and cost-benefit ratio for economic analysis.

2. What are the major findings of the research?

- (1) Planting soybean when cereal rye is green and actively growing had no adverse effect on soybean emergence or establishment in 2021 field study.
- (2) The research site received rain at regular interval in May; therefore, planting soybean green had no effect on performance of residual herbicides applied pre-emergence.
- (3) We have collected soil samples to determine effect of early termination of cereal rye versus planting green on soil health and soybean yield. Data will be summarized this fall.

3. Briefly summarize, in lay terms, the impact your findings have had, or will have, on improving the productivity of soybeans in Nebraska and the U.S.

Termination of cereal rye after 2 weeks of planting soybean suppressed weeds including Palmer amaranth and waterhemp better than terminating cereal rye 2 weeks before planting. This would be a good non-chemical tool to include in the toolbox for the effective management of herbicide-resistant weeds in soybean.

4. Describe how your findings have been (or soon will be) distributed to (a) farmers and (b) public researchers. List specific publications, websites, press releases, etc.

- Graduate student working on this project will present a poster at North Central Weed Science Society annual meeting to be held in Dec 2022.
- An in-person Field day was organized on June 29, 2022 to demonstrate results of this project to soybean growers. 110 attended field day. Project results were recorded and made it available on line (<https://agronomy.unl.edu/2022-weed-management-field-day-videos>) for those who were not able to attend in-person field day.
- An extension article will be published in Crop Watch and a paper will be published in Weed Technology, a journal of Weed Science Society of America.

5. Did the NE soybean checkoff funding of your project, leverage additional State or Federal funding support? Please list sources and dollars approved.

Not yet. We are planing to submit a proposal to USDA SARE program to further investigate the topic of planting green and cereal rye termination.

Please submit this completed form to the Agriculture Research Division, jmcmahon10@unl.edu, based on the reporting schedule given to you. If you have any questions, please call Jen McMahon at the Agricultural Research Division (402) 472-7082.

Please check your information before submitting the form.

Submit by Email