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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: #1743: Assessing management options to enhance seed protein

Principal Investigator: Patricio Grassini

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

1. ***What was the focus of the research project or educational activity?***

   The goal was to determine the influence of crop management practices on seed protein concentration and, in particular, the effect of irrigation.

2. ***What are the major findings of the research or impacts of the educational activity?***

   Besides higher yield (+10 bu/ac), irrigated fields exhibited higher seed protein concentration (+0.32%) than dryland fields, with slightly lower oil (-0.18%). There was no difference in test weight between irrigated and dryland fields. However, average test weight (57 lb/bu) was 3 lb per bushel lower than the standard soybean test weight of 60 lb/bu.

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.***

   Irrigated fields can produce high yields without penalties in seed protein concentration. This is an important finding because nearly half of soybean production in NE comes from irrigated land and it seems like irrigation is one of the few practices than can help increase yield and seed protein concentration simultaneously.

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.***

   We mailed a report to each of the soybean producers who submitted seed samples for the project. We also wrote a CropWatch article summarizing the results from the project (https://cropwatch.unl.edu/2021/what-have-we-learned-about-soybean-seed-constituents-irrigated-and-dryland-producer-fields).

   Results were also presented at the ASA, CSSA, SSSA International annual meeting:

   Cafaro La Menza N., Specht J., SL Naeve, and Grassini P., 2020. Soybean Seed Protein and Oil Concentration in Irrigated Vs. Dryland Fields in Nebraska. ASA-CSSA-SSSA annual meeting: Translating Visionary Science to Practice, November 9-13, 2020, Phoenix, AZ, USA. Oral Presentation.

   Cafaro La Menza N., Specht J., SL Naeve, and Grassini P., 2021. Soybean Seed Protein and Oil Concentration in Irrigated Vs. Dryland Fields in Nebraska. ASA-CSSA-SSSA annual meeting: A creative economy for sustainable development, November 7-10, 2021, Salt Lake City, USA. Oral Presentation.

   Finally, PI Grassini delivered a presentation about the project during a soybean field day organized at Mead NE in 2020.

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

   No

Please email 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 ARD 2-7082.