

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 Title: Evaluating Anti-inflammatory Effects of Bioactive Compounds in Soybean Sprout through a Mouse Model of Chronic Inflammation.

Principal Investigator: Toshihiro Obata

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

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

The overall goal of the project is to improve health benefits of soybean derived food products in ameliorating the chronic disease conditions, which is one of the major threats to the health of the US citizen. To this end, the objective of this proposed project is to evaluate the anti-inflammatory effect of sprouted soybeans in an animal model of chronic gastrointestinal inflammation.

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

The animal experiment was significantly delayed due to the restriction of starting new animal experiments in the UNL related to covid-19 earlier this year. Therefore, the animal trial is still ongoing and expected to complete by the end of December 2020. The treatment is at the sixth week and no visible phenotype has been observed yet. The anti-inflammatory effects of the sprouted soybean in the gastrointestinal tract will be assessed once the experiment is terminated and we harvest the relevant tissues for further analysis. The no cost extension of this project till March 31st, 2021 has been approved.

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.

Once the anti-inflammatory effects of soybean sprout diet is proven in the animal model, its health benefits are most likely effective in human body too. This would add more confidence to the health-conscious consumers to select soybean sprouts than the evidence from our previous cell-culture based studies. This will improve the values of soybean in the food market.

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.

The scientific manuscript describing the anti-inflammatory effects of soybean sprout in the gastrointestinal cell culture model will be submitted for the publication in 'Food Chemistry' by the end of the year. Once the results are published, these will be disseminated to general public via the UNL websites and local news.

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

The project "Effects of growth conditions on the anti-inflammatory bioactivity of soybean sprout", has been funded for the FY21 research project by NE soybean checkoff funding (\$75,880).

The approaches similar to this project is applied to identify the genes related to bioactivities of corn in a project funded by USDA-Hatch program (Identification of health beneficial bioactive compounds in maize and discovery of the genes underlying their variation, \$500,000)

Please e-mail this report to the Agriculture Research Division (jmonagham2@unl.edu).