

**Developing Future Agronomy Leaders through Day Camp and Individual Learning Projects
Project No. 07-2019**

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Background and Objectives

Agronomy is a diverse field of study in plant and soil sciences which include external factors such as: entomology, genetics, physiology, biology and chemistry. Recent trends in undergraduate enrollment show many students prefer to specialize in a specific science rather than a generalist discipline like agronomy. As the number of applied-science agronomists decreases, we face a shortage of individuals with the knowledge to perform field diagnostics, soil nutrient management, develop overall farm management plans or to conduct research. As the number of professionally-trained field agronomist declines, having access to people that can answer day-to-day questions could become a serious issue.

Objectives:

1. Develop an Agronomy Camp emphasizing hands-on training for young people.
2. Develop a 4-H Agronomy Project.
3. Develop a 4-H Agronomy Contest.

Report of Progress or Activity

1. *Develop an Agronomy Camp emphasizing hands-on training for young people.*

The initial Agronomy Day Camp was hosted on July 16, 2019 at the North Mississippi Research & Extension Center in Verona, MS. The Day Camp was free to attend and was open to all youth between ages of 12 and 18. The Camp was structured to provide 3 hours of classroom training followed by 3 hours of in-field training. Extension and industry experts provided basic and intermediate level trainings on the following topics: soybean growth, corn growth, cotton growth, water quality/management issues and unmanned aerial vehicle potential use in agriculture.

Nineteen youth pre-registered to attend however, heavy rain and high wind conditions on the day of the event reduced actual attendance to eleven youth. Of the eight students who returned program evaluations, 100% indicated they increased: agronomic knowledge, interest in drones, interest in Agronomy and Ag Science careers. When asked what would do to improve the day camp, youth indicated: nothing (3), I liked it all, and make the camp longer. Several students have asked if they can attend next year and I have received requests to expand the Day Camp to other regions of Mississippi in 2020.

The Day Camp has been accepted as a 4-H Program statewide Plan-of-Work curriculum. Extension agents will receive in-service credit for attending training sessions and 4-H youth have a new STEM related project to select from.

2. *Develop a 4-H Agronomy Project.*

The Agronomy at-home project focused on teaching youth the basics of the scientific method. This project uses the soybean plant as the means of drawing attention to careers in agricultural research. Various 'experiments' were outlined and students were free to develop their own research project. Students were provided with a guide to the scientific method and experiment supplies consisting of soybean seed, pots, soil media, notebook, pot labels, markers, and a weather station. Twenty-three youth registered and received their experiment kits for at-home projects. 2019 is considered as a trial-run for the PI to improve explaining experiment design and how to collect necessary data by youth. PI anticipates a full contest to be offered in 2020. An Extension publication highlighting how to use the scientific method in at-home science projects is being developed. The 4-H Agronomy Project has been accepted by

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Mississippi 4-H as a state-wide approved curriculum. Extension agents and 4-H members can select the project for 2020 activities. The project is listed as a Specialist and Agent delivered program and PI will serve as a resource person for any agent interested in the project. The PI will supply youth with supplies and support agents with technical expertise in offering the program.

Due to Covid-19 social distancing mandates, the Agronomy Project is expected to begin later than anticipated and may have reduced participation.

3. *Develop a 4-H Agronomy Contest*

Mississippi 4-H has little to offer our youth in plant sciences. Developing an Agronomy Bowl competition will expose youth to agronomy and related plant science needs and careers. The Mississippi 4-H office has accepted my request to offer an Agronomy Bowl during the 2020 4-H Club Congress event. A preliminary set of possible questions has been written and will be provided to interested youth. A preliminary set of contest rules have been written and is being reviewed by Extension agents for improvements. After final revisions, the rules will be submitted to MS 4-H for inclusion on the website. Both documents (rules and study guide) will be developed into fact sheets/publication for agent and 4-H member use. Multiple 4-H agents have given positive feedback on the proposed contest.

Due to Covid-19 social distancing mandates, the 4-H Club Congress and thus the Agronomy Bowl is currently suspended. It is not known at this time if and when the Club Congress event will be held.

Impacts and Benefits to Mississippi Soybean Producers

The activities and youth interest in this project have been positive for youth learning. Youth indicated a strong appreciation for the Day Camp and the Agronomy Bowl. Both activities have and will continue to highlight the need for trained professionals in the agronomic sciences. Recruiting highly-motivated youth into careers dedicated to production agriculture, and specifically soybean research should provide Mississippi producers with a competent group of individuals who will move agriculture forward. This project has the potential to attract the next generation of producers, scientists, Extension agents and industry personnel to keep soybean production in Mississippi healthy and vibrant.

End Products–Completed or Forthcoming

Completed Field Days

1. 1st Annual Agronomy Day Camp, July 16, 2019

Future Field Days

1. 2nd Annual Agronomy Day Camp, June 2020

Completed Poster Presentations

1. Burdine, B., C. Stokes and M.L. Tagert. Oct 2019. “Agronomy youth project inspires expanded career options”. NACAA Western Professional Improvement Conference. Great Falls, MT.
2. Burdine, B., C. Stokes, M.L. Tagert, G. Wills and L. Wasson. Feb 2020. “Agronomy Project Inspires Youth to Consider Ag Science Careers”. North Mississippi Producer Advisory Council, Verona, MS.

Future Poster Presentations

1. Burdine, B., C. Stokes, and G. Wills. Sept 2020. “Project Develops the Future Generation of Agronomic Professionals”. NACAA Professional Improvement Conference. Virginia Beach, VA.

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Future Fact Sheets and Competitions

1. 4-H Agronomy Bowl Contest Rules Information Sheet
2. 4-H Agronomy Bowl Study Guide
3. 4-H Agronomy Project Information Sheet
4. 4-H Agronomy Bowl annual competition
5. 4-H Agronomy Science Projects