Developing Future Agronomy Leaders through Day Camp and Individual Learning Projects
Project 07-2020

Annual Report
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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 trained field agronomist declines, having access to people that can answer day-to-day questions could become a serious issue.

Objectives:
1. Conduct an Agronomy Day Camp emphasizing hands-on training for young people.
2. Develop a 4-H Agronomy Project.
3. *Develop a 4-H Agronomy Bowl Contest*.

Report of Progress or Activity

1. *Conduct an Agronomy Day Camp emphasizing hands-on training for young people*.
Agronomy Day Camps in 2020 were scheduled for: A. North MS Research & Extension Center in Verona, MS and Central MS Research & Extension Center in Raymond, MS. A third location was being considered. It was at the MS Delta Community College in Moorhead, MS. Unfortunately, the Day Camps were cancelled due to Covid-19 when MSU restricted all face-to-face programming during the summer of 2020. Camps are free to attend and open to youth between 12 and 18 years of age. Camps provide 3 hours of classroom training followed by 3 hours of in-field training. Extension and industry experts provide 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 attended in 2019 under poor weather conditions. I'm confident that attendance would have grown substantially if not for Covid-19.
The Day Camp program is an approved 4-H curriculum project across Mississippi. Extension agents receive in-service credit for attending training sessions and 4-H youth have a new STEM related project to select from.
Extension publication (P3595) outlines the overall project is on the MSU ES publication website.

2. *Develop a 4-H Agronomy Project*.
The Agronomy at-home project focused on teaching youth the basics of the scientific method. The soybean plant is the only plant allowed in the project and draws attention to careers in agricultural research and especially soybean production. Various 'experiments' were outlined in a project guide but students are encouraged to develop their own research project. Students received a guide to the scientific method and provided experiment supplies consisting of soybean seed, pots, soil media, notebook, pot labels, markers, and a weather station. Due to Covid-19 delays, the project did not begin until September 2020. Even with the late start, 87 youth participated in this first year of the project. Youth did an outstanding job in developing hypothesis, conducting research projects, and summarizing data. The weakest link was in their conclusions. This area will receive greater attention during the 2021 contest.

Numerous aspects of the project were found to be satisfactory but improvements can and will be made for future contests. Extension publication (P3595), "*Agronomy Projects for 4-H and Youth*" is printed and is online for agents and interested parties to download or order hard copies. This science project has been accepted by Mississippi 4-H as a state-wide approved competition and generates significant interest.

3. *Develop a 4-H Agronomy Bowl Contest*

Mississippi 4-H has offered little in the plant sciences arena but this is changing. We developed an Agronomy Bowl competition that exposes youth to agronomy and related plant science needs and careers. The Mississippi 4-H office approved the Agronomy Bowl as one of only 8 contests to be provided during the 2021 4-H Club Congress event. A list of potential questions were developed and will be provided to youth. Extension publication (P3596), "*4-H Agronomy Bowl: Contest Rules and Regulations*" has been printed and posted online for agents and interested parties to download or order hard copies. Rules will be included on the MS 4-H website.

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, Science Experiments and the Agronomy Bowl. All three 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

Field Day Camps (cancelled due to Covid-19)

1. 2nd Annual Agronomy Day Camp, NMREC & CMREC. June 2020

Poster Presentations

1. 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.

2. Burdine, B., C. Stokes, and G. Wills. Oct 2020. "*Project Develops the Future Generation of Agronomic Professionals*". NACAA Professional Improvement Conference. Virginia Beach, VA. (virtual).

Publications

1. Burdine, B., C. Stokes, G. Wills and L. Reed. 2021. *Agronomy Projects for 4-H and Youth*. Mississippi State University Extension, P3595.

2. Burdine, B., C. Stokes and G. Wills. 2021. *4-H Agronomy Bowl: Contest Rules and Regulations*. Mississippi State University Extension, P3596.

3. Burdine, B. and C. Stokes. 2021. *4-H Agronomy Bowl Study Guide*. Unnumbered handout.

Competitions

1. 4-H Agronomy Bowl
2. Agronomy Science Projects