

**Developing the Next Generation of Agronomy Leaders through Youth Science Projects
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Background:

Agronomy is a diverse field of study including disciplines such as: entomology, genetics, physiology, biology, and chemistry. Recent enrollment trends indicate 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 knowledge to perform field diagnostics, soil nutrient management, develop farm management plans or to conduct research. As the number of trained field agronomists declines, access to people answering day-to-day questions could become a serious issue.

Objectives:

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

Report of Progress/Activity:

Obj 1: Conduct Agronomy Day Camp emphasizing hands-on training for young people. Two camps were in planning stages for North MS Research & Extension Center (NMREC) and Mississippi Delta Community College (MDCC). Issues arose between facility availability and instructor schedules which were not overcome. Thus, day camps were not conducted in 2023.

Obj 2: Develop a 4-H Agronomy Experiment Project.

The at-home science experiments were a success in 2023. This project teaches youth the basics of the scientific method. Soybean is the only plant allowed in the project and draws attention to careers in agricultural and specifically, soybean production. Youth received a guide to help them brainstorm and develop ideas for experiments. Students were also provided a kit consisting of soybean seed, pots, notebook, pot labels, markers, rain gauge, and weather station. A total of 78 kits were provided to youth in 2023 and were distributed to county Extension offices no later than June 1, 2023. Final reports were judged using a scoring matrix based on hypothesis, experiment plan, data collection, and conclusions. The conclusion portion of reports is improving from previous years but still lacks the deeper thought process I hoped for from participants. This will be highlighted to 2024 participants. Extension publication P3595, “*Agronomy Projects for 4-H and Youth*” is available for agents to generate interest. This 4-H state-wide competition is building a positive reputation among Extension agents as a viable project to gain interest of youth in plant sciences. In the last 2 years, I have been contacted by Montana State University, University of Minnesota, and University of Alaska about how to duplicate the project in their respective states.

Obj 3: Develop a 4-H Agronomy Contest.

The first 4-H Agronomy Bowl was held in June of 2021 during 4-H Club Congress contests. Three county teams participated. Unfortunately, the contest was cancelled in 2022 due to Covid restrictions and was offered in 2023, however, no teams participated. In-service training for agents was conducted before the contests were announced. A list of standardized questions was developed so all participants have equal opportunity to review question material. Extension publication P3596 “*4-H Agronomy Bowl: Contest Rules and Regulations*” is available to agents and youth.

Impacts and Benefits to Mississippi Soybean Producers:

MISSISSIPPI SOYBEAN PROMOTION BOARD

This trio of projects are attracting youth to agricultural sciences and hopefully, a concentration in soybean. The activities are receiving positive feedback from participating youth and show a desire to learn more about plant science career options. All three projects will continue highlighting the need for trained professionals in the plant sciences. Recruiting high quality youth into Ag careers should provide Mississippi producers with it's next group of individuals who will move agriculture forward. This project is attracting the next generation of producers, scientists, Extension agents and industry personnel to keep soybean production in Mississippi healthy and vibrant.

End Products

National Attention

1. Montana State Univ., Univ. of Minnesota, and Univ. of Alaska requested information to duplicate projects in their respective states.

Day Camps

1. MS Delta Community College (Moorhead) cancelled due to schedule conflicts
2. North MS Research & Extension Center (Verona) cancelled due to schedule conflicts

Oral Presentations

1. Burdine, B. (2023). 4-H Agronomy Project Updates. Extension In-Service Training. May 2023. Zoom.
2. Burdine, B. (2023). 4-H Agronomy Project draws Youth to Ag. MS Ag and 4-H Joint Professional Improvement Conference. Sept 7, 2023. Oxford, MS.
3. Burdine, B. (2024). 4-H Agronomy Project. Extension In-Service Training. Mar 20, 2024. Zoom.
4. Burdine, B. (2024). *Accepted*. Introducing Youth to Agronomy Careers. NACAA Professional Improvement Conference. July 2024. Dallas, TX.
5. Burdine, B. (2024). *Accepted*. Recruiting Youth to Plant Science Career. NACAA Search for Excellence committee. July 2024. Dallas, TX.

Poster Presentations

1. Burdine, B., G. Wills, and L. Wasson. (2024). Agronomy Project draws Youth toward Ag Careers. NMREC Producer Advisory Meeting. Feb 15, 2024. Verona, MS.
2. Burdine, B., A. Deason, G. Wills, and L. Reed. (2024). *Accepted*. Recruiting Youth to Careers in Plant Sciences. NACAA Professional Improvement Conference. July 2024. Dallas, TX.

Publications

1. Burdine, B., C. Stokes, G. Wills and L. Reed. *Agronomy Projects for 4-H and Youth*. MSU Extension, P3595.
2. Burdine, B., C. Stokes, and G. Wills. *4-H Agronomy Bowl: Contest Rules and Regulations*. MSU Extension, P3596.
3. Burdine, B. *4-H Agronomy Bowl Study Guide*. Unnumbered handout.

Competitions offered

1. Agronomy Bowl 0 participants
2. Agronomy Science Projects 78 participants