



# Extension

## *University of Missouri*

### The Year in Review - 2023 Audrain County

#### **Audrain State Fair Farm Family**

The Greg & Cindy Fort family of Martinsburg were among the families honored during the 66th annual Missouri Farm Family Day, Aug. 14 at the Missouri State Fair.

The Fort family was selected as the Audrain County Missouri Farm Family by University of Missouri Extension in Audrain County and the Audrain County Farm Bureau. The family includes Greg & Cindy and sons Ethan and Lance.

Each year, the fair sets aside a day to recognize farm families from across the state that are active in their communities, involved in agriculture, and/or participate in local outreach and extension programs such as 4-H or FFA.

The annual event is sponsored by five partner agencies: the Missouri Farm Bureau; the Missouri Department of Agriculture; the Missouri State Fair Commissioners; the MU College of Agriculture, Food and Natural Resources; and MU Extension.

The event showcases the impact that Missouri farm families have on the economy and heritage of the state, said Missouri State Fair Director Mark Wolfe. "These families are involved in agriculture activities in their communities and are active participants in local outreach and extension. As the premier showcase for Missouri agriculture, the Missouri State Fair is most certainly the appropriate place to celebrate these families."

The Fort family resides on a cattle and row crop farm in the Martinsburg area. They raise purebred Hereford cattle. Their crops include corn and soybeans. The entire family is involved in many activities. Sons, Ethan and Lance have both been involved in FFA (Community R-VII) and 4-H (Merry Martins Club). Cindy is a member of the Audrain 4-H Fairboard and Audrain Extension Council. Greg serves on the Community R-VI School board. The family belongs to Grace Lutheran Church in Wellsville. In addition to farming, Greg works at Ennis Implement and Cindy works at MU Heart & Vascular Clinic. Ethan is a junior at the University of Missouri studying plant science. Lance is a freshman at Oklahoma State University studying agriculture business.



**Back Row: Left to Right:** Mark Wolfe, Missouri State Fair Director; Christine Chinn, Director, Missouri Department of Agriculture; Kelsey Miller, Missouri State Fair Queen; Ted E. Sheppard, Missouri State Fair Commissioner; Chad Higgins, Interim Vice Chancellor for MU Extension & Engagement, & Interim Chief Engagement Officer, UM System; Garrett Hawkins, President, Missouri Farm Bureau ; Harold "Byron" Roach, Missouri State Fair Commissioner; Rob Kallenbach, MU Associate Dean of Extension & Senior Program Director of Agriculture & Environment; Nikki Cunningham, Missouri State Fair Commissioner

**Front Row: Left to Right:** Cindy Fort, Ethan Fort, Lance Fort and Greg Fort

**For More Information on University of Missouri Extension Call 581-3231**



## 2023 Audrain County Extension in Review

University of Missouri Extension in Audrain County continued to have a year of change while still offering a variety of in-person and online programs, activities, and services to the citizens of Audrain County this past year. The programs provided education in the areas of agriculture, 4-H and youth, nutrition, and variety of other educational opportunities. University of Missouri Extension is the University of Missouri's classroom in communities across the state.

During 2023, the office operated with vacancies. The administrative assistant completed her first year. She is learning very quickly and is extremely helpful to the clients and staff. Megan Prater was hired on a temporary basis for the summer, which was

very helpful. She focused on 4-H programs and the Audrain Youth Fair. The University has advertised for a 4-H youth specialist and nutrition assistant, so hopefully those positions get filled in 2024.

Extension was created by federal land-grant legislation and guided by state statutes. University of Missouri Extension connects the citizens of Audrain County to research-based education to improve the county's economy and quality of life. University of Missouri Extension prides itself in being relevant, reliable and responsive to the citizens of Audrain County.

The support from stakeholders is very important to Extension. A sincere thank you to the Audrain County Commission for its

steadfast support of the Audrain County Extension office. Without the financial support from the county, the local office would not be able to provide educational programming to the citizens of Audrain County.

The local citizens on the Audrain County Extension Council provide input and recommendations for what is best for the community in the area of educational programming and the expenditure of Extension funds. This partnership promotes identifying needs and builds trust with the community. As a result, the citizens of Audrain County benefit from this wise use of public and private resources.

Extension is frequently referred to as Cooperative Extension. The term Cooperative Extension

comes from the fact that Extension is made up of three components – federal, state and local. The educational resources used in Extension teaching and funding come from federal, state and local (county) sources.

Investing in University of Missouri Extension programs benefits not only the direct participants, but local communities and society as a whole. County, state and federal dollars invested in MU Extension enables local communities' access to public services they would not have otherwise. MU Extension programs, using unbiased research-based information, focus on preventing problems, which is much less expensive to the citizens of Audrain County than trying to fix problems after they are created.

Extension on the national level is the educational branch with the U.S. Department of Agriculture which cooperates with land grant universities across the nation to develop educational programs needed within the states. In Missouri, Extension continues strong ties with all four campuses and Lincoln University. The county offices are the local link between the four University of Missouri campuses and Lincoln University and the people throughout the state. University of Missouri Extension's land grant mission is to "improve lives, communities and economies by producing relevant, reliable and responsive educational strategies that enhance access to the resources and research of the University of Missouri".

County extension councils con-

sist of elected and appointed citizens that plan and oversee local extension activities. The 2023 Council Members are listed on the back page. It is through their dedication and devotion to Audrain County that helps Audrain County maintain a high quality of life for our residents.

The Audrain office staff works very hard to provide and support programs for the residents of Audrain County. With dedicated staff, council members and many volunteers; valuable programs are available to all to Audrain County residents. The Audrain University of Missouri Extension Center is located in the Audrain County Courthouse, Room 304. The office is open Mon.-Fri., from 8:00 a.m. to noon and 1:00 to 5:00 p.m.

### Soils and Crops Conference

The 97th annual Audrain Soils & Crops Conference was held January 30, 2023 at the Hart Career Center in Mexico.

The conference consisted of a variety of concurrent sessions to offer a selection of choices to participants. The sessions included: soybean cyst nematode: current management and looking ahead, fungicides, Missouri weather trends and outlook, grazing milo lessons learned, autonomy on the farm – how close are we?, updates from USDA FSA, NRCS and the Soil and Water Conservation District, Audrain County update, land and leasing objectives. There were also sessions from Audrain County Master Gardeners and nutrition sessions.



Participants were asked to provide feedback through a short survey. The comments from the surveys indicated the sessions were helpful and especially the information about fungicides and grazing milo. One of the participants planned to take the data and share with their 4-H members.

Sponsors for the program in-

cluded Audrain County Extension Council, Mexico Young Farmers and Audrain County Farm Bureau.

Instructors included state and regional MU extension specialists, USDA personnel, Mexico Young Farmers Association, area farmers, and Audrain Master Gardeners. Sixty-one people attended from five counties.



# Extension

*University of Missouri*

### Agriculture Lender Seminars

MU Extension offered training for agricultural lenders in various locations throughout the state during the fall of 2023. Eighty-three lenders from 25 Missouri counties and Illinois attended the seminars in Mexico and Brookfield. There were eight participants from Audrain County.

Lenders learned about crop and livestock outlook, agriculture policy, rental rates & land values, MU budgets, input costs, USDA Farm Service Agency, and Missouri Agricultural and Small Business Development Authority (MASBDA) programs. Lenders in attendance manage 6,007 farm loans totaling \$115,500,000.

By attending University of Missouri's Agricultural Lenders' seminars, lenders gain knowledge to help their clients make better decisions based on objective education and resources. More information and better decisions benefit their

portfolio of producers, landowners, and ag-businesses through enhanced understanding of enterprise budgets, market expectations, and other decision influencing factors affecting families' and businesses' financial health.





## Missouri Strip Trial Program

The Missouri Strip Trial program began in 2016 with a limited number of producers around the state participating. Since then, the program has continued to grow with additional producers and expanded trials being applied to cooperator fields. East Central Missouri producers are prominent in this program with many trials being conducted in East Central Missouri in 2023. In 2023 16 trials were conducted in East Central Missouri in six different counties. The strip trial program uses producer fields, equipment, and management to compare different crop management practices. For 2023 these trials included:

- Nitrogen management in corn production.
- Fungicide application in soybeans.
- Comparing cereal rye, winter



wheat and no cover crop in a corn/soybean rotation.

- Crop response to sulfur applications.
- The two-year effect of planting soybeans into growing winter cereal rye and the following years corn yield.

Data collection during the growing season included:

- Crop stand establishment.

- Weed control.
- Crop response to treatments using drone flights during the growing season.
- Yield monitor data and mapping during harvest to measure treatment affects.
- Targeted soil sampling after crop harvest for nutrient levels and soybean cyst nematode levels.
- Drone imagery to monitor plant growth, residue levels and pest pressure.

After results are compiled, meetings were arranged with the participating producers to evaluate the results and get feedback on the program from participating producers. Results from producers were combined with other producers around the state and summarized on the strip trial web site <https://extension.missouri.edu/programs/strip-trial-program>



## Farm Tour and Drought Education

A county farm tour, focusing on farm shops was held August 22, 2023. The two shops on the tour were the Mexico vocational ag shop and the Isgrig shop. Kendra Smith, vo ag instructor shared several safety features and new equipment in the shop and answered questions. Dennis Isgrig explained features of their shop recently constructed. Both stops on the tour shared successful features and lesson learned.

The second part of the program was a drought workshop to share information and resources

related to the drought. University Extension and USDA partnered in presenting the information.

The evaluation included a question asking what types of changes they planned to make on their farms within the next three years. The responses included build or

renovate their shop, change/update lighting, and install safety features. The responses related to the drought included planned changes of testing feed for nutrition or nitrates and communicating with their tax professional. Twenty-nine area residents participated in the program.



## Family Nutrition Education Program

The Supplemental Nutrition Assistance Program Education (SNAP-Education or SNAP-Ed) brought \$10,874,798 in federal funds to Missouri. During FY2023, Missouri's SNAP-Ed program reached over 78,000 Missourians through direct classroom education. Each person participated in an average of 6 hours of education totaling over 15,000 hours. In addition, an additional 760,135 persons participated in indirect education. Direct and indirect educa-

tion resulted in over 1.8 million total contacts with Missourians.

In Audrain County a total of 12 participants were reached directly and 175 in-directly.

Participants in SNAP-Ed learn the importance of making healthier meals and snack choices, eating breakfast more often, are more willing to try new foods, increase their physical activity, and make healthier food choices. Those who practice healthy eating and are physically active are more

likely to contribute to a healthy labor force and enjoy a high quality of life throughout the lifespan.

This vital programming effort also reduces healthcare costs over the participant's lifetime, saving taxpayer money in reduced public healthcare benefits and insurance premiums.

Nutrition Program Associates serving Audrain County this year: Alli Freyer, Amanda Lehenbauer, Beth Thordsen.

## Nutrition Education Offered in Audrain County

### SSSH

Stay Strong, Stay Healthy (SSSH) aims to provide inactive middle-aged and older adults with access to a safe, structured, and effective exercise program capable of building muscle and increasing bone density, thus decreasing frailty, osteoporosis, and the risk of falls. SSSH helps participants meet the Centers for Disease Control and Prevention's physical activity recommendations.

SSSH challenges participants through incremental increases in exercise volume and intensity. Led by a certified instructor, participants complete a warmup, a prescribed set of upper- and lower-body strengthening exercises and a cool-down at each class. Participants are made to feel comfortable regardless of their current fitness level so they can safely participate and gradually build the strength beneficial to health. Multiple classes were offered online:

Stay Strong, Stay Healthy - Level 1 Virtual Event

**Session dates:** 1/24/2023 - 3/16/2023. Carrie Elsen and Jennifer Eldridge Houser were

the instructors for the 8-week Stay Strong, Stay Healthy program. The program was marketed to individuals using flyers and email.

**Event name:** Stay Strong, Stay Healthy - Level 1 Virtual Event  
**Session dates:** 5/30/2023 - 7/25/2023 Co- Led by Carrie Elsen and Jennifer Eldridge Houser

### Strength In Numbers - Multiple sessions

The Strength in Numbers program is designed to improve the health of an entire community. Presentations were given monthly to eight participants from March to October at the Mexico TOPs group. Each presentation aimed to raise awareness about individual health needs and ways to improve overall health in the areas of nutrition, physical activity, mental health, and chronic disease.

This program is based on the transtheoretical model of behavior change. In any given group, there will be participants in each of the five stages of behavior change: precontemplation, contemplation, preparation, action, and maintenance. The program

promotes participant progress toward the maintenance stage as group members positively influence and support each other.

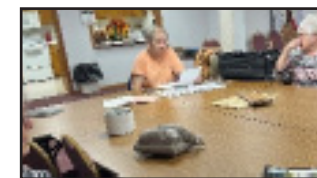
### Community Garden Initiative :

MU Extension is leading the way with community gardening by engaging the community in healthy eating and physical activity while focusing on community activities such as nutrition education, food distribution, and even taste tests. Additionally, research shows community gardens increase socialization and cooperation among neighbors within communities.

Eastern Missouri Family YMCA in Vandalia, MO received grant funding from the partnership of the University of Missouri Extension and Missouri Department of Social Services through funding from the Administration for Children and Families (ACF) of the United States (U.S.) Department of Health and Human Services (HHS). The funding was given to support the continued gardening project. Equipment received was gardening tools, weed mats, raised beds, and watering hoses.



Stay Strong,  
Stay Healthy







# 2023 Audrain County 4-H and Youth Highlights



## MU Extension 4-H Youth Development

Audrain County 4-H creates environments in which young people are valued, contributing, members of their community. 4-H provides Audrain County youth with hands-on learning opportunities in a safe environment where they can experiment, innovate, and think independently with the help of caring volunteers. Audrain County 4-H is a community of 209 members youth building life skills, contributing to their community, and becoming college and career

ready. These youth are supported by 150 volunteers. Volunteers are the core of the 4-H Program. They help to create, support, and deliver educational programs and experiences. Missouri 4-H volunteers report contributing on average 100 hours per year to the program. Valuing their time at \$31.80 per hour (Independent Sector, 2023), the contribution of Audrain County 4-H volunteers was worth more than \$477,000 in 2022. More importantly, these

individuals serve as role models and mentors for youth. Audrain County 4-H creates environments in which young people are valued, contributing, members of their community. 4-H provides Audrain County youth with hands-on learning opportunities in a safe environment where they can experiment, innovate, and think independently with the help of caring volunteers. 4-H'ers are twice as likely to go to college compared to their non-4-H peers and

they tend to pursue careers in STEM fields (Lerner & Lerner, 2011). Being on campus is a predictor of youth going onto higher education (Dalton & St. John, 2016). Youth who earn an earn bachelor's degree increase annual earnings by \$2 million over their lifetime (U.S. News and World Report, 2011). If 50% of the Audrain youth participating in 4-H events on a college campus receive a bachelor's degree, 4-H would help young people acquire \$220 million more in lifetime earnings.

4-H also prepares youth for the workplace. Youth must be prepared to live and work in a world we cannot completely envision – competing for jobs that do not yet exist, using technologies that have not yet been invented to solve problems that have yet to be identified. 4-H is the only youth development program with direct access to technological advances in agriculture, life sciences, engineering, learning technologies, and social sciences from the university system. This brings relevant science content and hands-on learning that helps youth thrive (Arnold, Bourdeau, & Nott, 2013).

### Top Skills Developed because of 4-H:

- Leadership
- Building Relationships/Meeting new people
- Project Skills
- Willing to try new things
- Public Speaking/Presentation Skills
- Sportsmanship/Handle Competition

### What youth enjoy most about 4-H:

- Exhibiting at fairs
- Participating in projects
- Going to Camp
- Community Service
- Participating in Contests

### Audrain Youth Fair BBQ Contest



Mexico FFA - 1st place Chicken Drumsticks



Centralia FFA - 1st place Dessert



Community R-VI FFA - 1st place Pork Loin

### Audrain 4-H Clubs

Audrain County 4-H clubs offer long-term educational experiences in which members learn life skills such as decision making, public speaking, and working with others. Members learn by doing under the guidance of adult volunteers, who teach projects ranging from computers science, and arts to animal science and healthy living. Clubs also involve youth in community service, camping, and educational trips.

## State Meats Judging Contest

The State 4-H Meats Judging event held on February 18 at MU's campus, 45 youths from 11 counties judged and identified meat cuts, developing essential skills for careers in the meat industry and informed consumer choices. The participants' feedback was overwhelmingly positive: 100% considered themselves educated consumers of agricultural products and eager to learn more, 91% were comfortable sharing their agriculture knowledge with others, and 97% saw themselves as advocates for the agriculture industry. Notably, 63% stated that their involvement in this project and contest encouraged

them to pursue further education in a related field. Furthermore, over 60% of the youths felt they had gained more knowledge in carcass judging, cuts judging, meats terminology, and giving reasons after competing in the contest. The 2023 contest included two age divisions: Junior for ages 8 – 13 and Senior for ages 14 – 18. Junior Meats Judging Results: Individual scores: First, Brooke Stevens, Jasper County; Second, Faith Calvin, Jasper County; Third, Lydia Hoyt, Audrain County. Also representing Audrain: Sophia Fennewald, and Layne Rohan. Senior Meats Judging Results: Teams ages 14 years old

and over: First Place, Audrain County A; Second Place, Laclede County; and Third Place Moniteau County. Individual scores: First Clayton Jennings, Audrain County; Second, Dylan Hoyt, Audrain County; Third, Carsyn Petree, Moniteau County; Fourth, Libby Shaver, Laclede County; Fifth, Molly Archer, Laclede County; Sixth, Aaron Carter, Audrain County; Seventh, Paige Wittman, Moniteau County; Eighth Mason Rohan, Audrain County; Ninth, Callie Jennings, Audrain County; Tenth, Kate Robnett, Audrain County. Also representing Audrain: Lane Carter, Ella Duenke and Cooper Rohan.



Caleb Stone provides a demonstration during a club meeting.



### Findings from a 2022-2023 evaluation study reveal that Missouri 4-H:

- Missouri 4-H Inspires Kids to Do**
  - 87% said they are willing to work hard on something difficult.
  - 91% set personal goals.
  - 97% said they try to learn from their mistakes.
  - 98% said they treat others the way they want to be treated.
- Missouri 4-H Grows True Leaders**
  - 97% said they like to learn about people who are different from them.
  - 93% said they think about other feelings before they say something.
  - 75% reported feeling comfortable being a leader.
- 4-H Builds Leadership and Communication Skills**
  - 95% help others reach their goals.
  - 86% comfortable speaking in a group.
  - 99% said they show respect for others' ideas.
  - 85% Can work with someone who made them upset.
  - 95% Look for ways to involve all members of a group.
- 4-H Builds Social and Emotional Skills**
  - 94% said they keep trying until they reach their goals.
  - 89% Stop to think about their choices when making a decision.
  - 97% reported that they like to learn new things.
  - 91% of Missouri 4-H'ers surveyed said they are willing to try something they might get wrong.



**AMERICAN ROYAL:** Audrain County represented Missouri 4-H at the American Royal National 4-H Contest. They placed 10th overall. From left to right: Aaron Carter, Mason Rohan, Dlyan Hoyt, Clayton Jennings



### Audrain County Fair Royalty

**King- Cameron Beasley**  
**Queen- Tiffany Darby**

**Princess- Bree Stowers**  
**Prince- Wyatt Jung**



Audrey Prater participating in the rabbit show during the Audrain County Youth Fair.



# Agriculture Programs

## 2023 MU Extension Tax Schools

University of Missouri Extension ag economics department and ag business specialists worked together to coordinate one summer and three fall tax schools. The summer school was in person and live online. Fall schools were in Columbia and Springfield and in addition one online school. The schools were designed for those who prepare taxes including enrolled agents, tax preparers, CPAs, individuals, and attorneys.

The training included updates on legislation, rulings and cases, individual taxpayer issues, agricultural and natural resources topics, ethics, trusts and estates, agriculture and natural resource tax issues, business tax issues, business entity tax issues, IRS issues, penalties and defenses, form 4797 sales of property, retirement tax issues, like-kind exchange issues. The schools were approved for 8 and 16 hours of continuing education credit by the IRS, Missouri Bar and for CFP continuing education. Total continuing education hours reported to IRS for the schools

was 3,336 hours.

The teaching teams included a CPA and former IRS stakeholder liaison, an IRS certified retired ag economics professor, an attorney, Missouri Department of Revenue and extension ag business specialists.

The trainings received positive evaluations and planning is underway to offer trainings in 2024. Local county residents benefit when local tax preparers have the opportunity to gain knowledge, which benefits their clients and communities. The tax schools are a program of the ag business and policy program of MU Extension, coordinated by Mary Sobba with help from a team of ag business specialists throughout the state.

The resources for the schools included the IRS, the National Income Tax Workbook from the Land Grant University Tax Education Foundation, and materials written by the instructors.

The 2023 school attendance totaled three hundred twenty-seven people, including eleven from Audrain County. The participants were from throughout



## Private Pesticide Applicator Training

Fourteen Audrain County citizens participated in the Private Pesticide Applicator training facilitated by Rusty Lee, Field Specialist in Agronomy. This 2.5 hour program gave a collective learning total of 35 education hours.

**What Did They Learn?**

Upon completion of the training, participants were able to:

1. Recognize the need to correctly identify pest organism prior to choosing a pest management strategy.
2. Understand the concept of economic thresholds and economic injury levels when making pest management decisions.
3. Possess a basic understanding of biological control and other non-chemical methods of pest management.
4. Better understand the format and information provided on each pesticide label.
5. Recognize the importance of using label information in all phases of application.
6. Understand the importance of having a Material Safety Data Sheet, and other materials available when applying pesticides.

7. Understand the need for proper selection and use of protective clothing and safety equipment.
8. Understand the importance of the “Restricted Use Pesticide (RUP) designation for certain pesticides
9. Consider environmental impacts when selecting a pesticide for use.
10. Consider impact of pesticides on water sources when applying a pesticide.
11. Understand the need and procedure to develop an emergency plan (fire, storm, flood, other) with local emergency of-

ficials.

How Does This Work Make Audrain County and Missouri Better?

Enables farmers to meet the legal requirements mandated by the Environmental Protection Agency and the Missouri Department of Agriculture’s Bureau for Pesticide Control on the safe and proper use of agricultural pesticides on their farmlands, including restricted-use pesticides (RUPs).

This enables farmers to meet society’s demands for lessening agriculture’s environmental impact.

## University of Missouri Extension Mission Statement

Our distinct land-grant mission is to improve the lives, communities and economies by producing relevant, reliable and responsive educational strategies that enhance access to the resources and research of the University of Missouri.

## UM System Footprint in Audrain County in 2023

### Audrain County Students

- 173 students
- 150 Undergraduates
- 23 Graduate and professional students
- 141 Full-time students
- 32 Part-time students
- 39 Pell grant recipients (aid year 2022)

### Audrain County

- |                |                |
|----------------|----------------|
| • MU           | • Missouri S&T |
| • 150 students | • 10 students  |
| • 894 alumni   | • 37 alumni    |
| • 88 employees | • 0 employees  |
| • UMKC         | • UMSL         |
| • 11 students  | • 2 students   |
| • 40 alumni    | • 34 alumni    |
| • 0 employees  | • 0 employees  |

### Audrain County Alumni

#### School alumni

- 20 Medicine
- 55 Nursing
- 72 Health Professions
- 8 Dentistry
- 6 Pharmacy
- 3 Optometry
- 6 Veterinary Medicine
- 239 Agriculture
- 69 Engineering
- 22 Law

#### Alumni teaching

- K-12
- 68 teachers
- 25.7% of all district teachers
- 6 principals and administrators
- 37.5% of all district principals and administrators

## Education and Training Provided

- 41,992 police, fire fighters, and medical professionals attending continuing education (2022)
- Agriculture and natural resource programs served 174,692 farmers and related businesses (2022)
- 311,749 youth and stakeholder educational contacts in 4-H clubs, schools, camps and other programs (2022)



# Horticulture in Audrain County

An Audrain County farm business was provided technical grant writing assistance and guidance through the Missouri Agriculture, Food and Forestry Innovation Center, resulting in a grant award of \$181,000 and total capitalization of \$248,000. These funds will be used to build a processing facility to allow the farm business to process and add value and prepare ready to eat food products.

Twenty-five Audrain County residents attended a class on Raised Bed and Container Gardening at the Audrain County Courthouse. Students learned about what containers to use, how to build raised beds, what soil to fill them with, and how to manage pests and irrigation with vegetable crops. Attendee feedback included: “Come back with more programs” and “Justin did an awesome training class, he explained everything in detail and was very good instructor”.

Thirty Audrain County homeowners and fruit/vegetable farmers received 1 on 1 support to help them solve problems in their crops and landscape such as; how to take a soil sample

and how to fertilize a vegetable garden, how to deal with pests on flowers and vegetables, weed control in lawns, pricing at the farmers market, how to increase vegetable yields, how to connect with USDA farm programs, herbicide drift diagnosis, and use of cover crops. Students and residents received research-based information from MU Extension to help their gardens, landscapes and lawns thrive, while protecting pollinators by reducing insecticide use and protecting the environment from nutrient pollution caused by fertilizer runoff.

Twenty-four Audrain County residents subscribed to MU Horticulture Newsletters (Garden Spade Newsletter, Missouri Produce Growers Bulletin, and the MU Commercial Horticulture Video Newsletter) or attended the Live Garden Hour weekly town hall. Subscribers receive research-based information to help their gardens thrive, while protecting the environment.

Sixteen Audrain County gardeners and produce growers had their soil tested and received detailed fertility rec-

ommendations, guidance, and support to help their gardens thrive, while protecting our state’s waterways from nutrient pollution.

Five Audrain County fruit and vegetable farmers received site visits for assistance with insect and disease management and optimizing irrigation of crops.

## Audrain County Master Gardeners Annual Report:

The Audrain County Master Gardeners started off the year with an annual planning meeting. This was followed up with the March meeting being used to repackage seed for our seed distribution in April. The Master Gardeners planned to package 300 envelopes of 8 varieties of vegetables for a total of 2400 envelopes. Each envelope provides enough seed for a family of four (4) to grow and eat fresh vegetables for the summer.

On April 3, 2023, we started our first distribution day of Monday, Wednesday, Friday for the month of April at the Mexico/Audrain County Food Pantry on Fairgrounds Street in Mexico. We also attended the additional distribution in Vandalia on the third Thursday. By

the last Friday of the month, we were out of many seeds and had distributed seed to more families than any previous year. We also submitted our 2022 seed distribution project to MOMGA for small chapter projects which we won at the 2023 MOMHA Conference.

In July we met at Scattering Forks Outdoors Center Outdoors Center for a meal and to work with Laura Worstell. We also had three members who judged the Horticulture entries for the Audrain County Youth Fair and then ran the Biggest Veggie Contest at the fair.

We participated in the Yearly MOMGA Convention which ended up being held via ZOOM due to low initial response that turned into a large attendance.

We participated in each of the quarterly MOMGA board meetings.

We finished up the year with a dinner at the 54 Diner in Mexico and installation of the 2024 officers for the coming year. Dayton Shepherd President for 2024 Audrain Master Gardeners MOMGA Vice President, 2023-2025

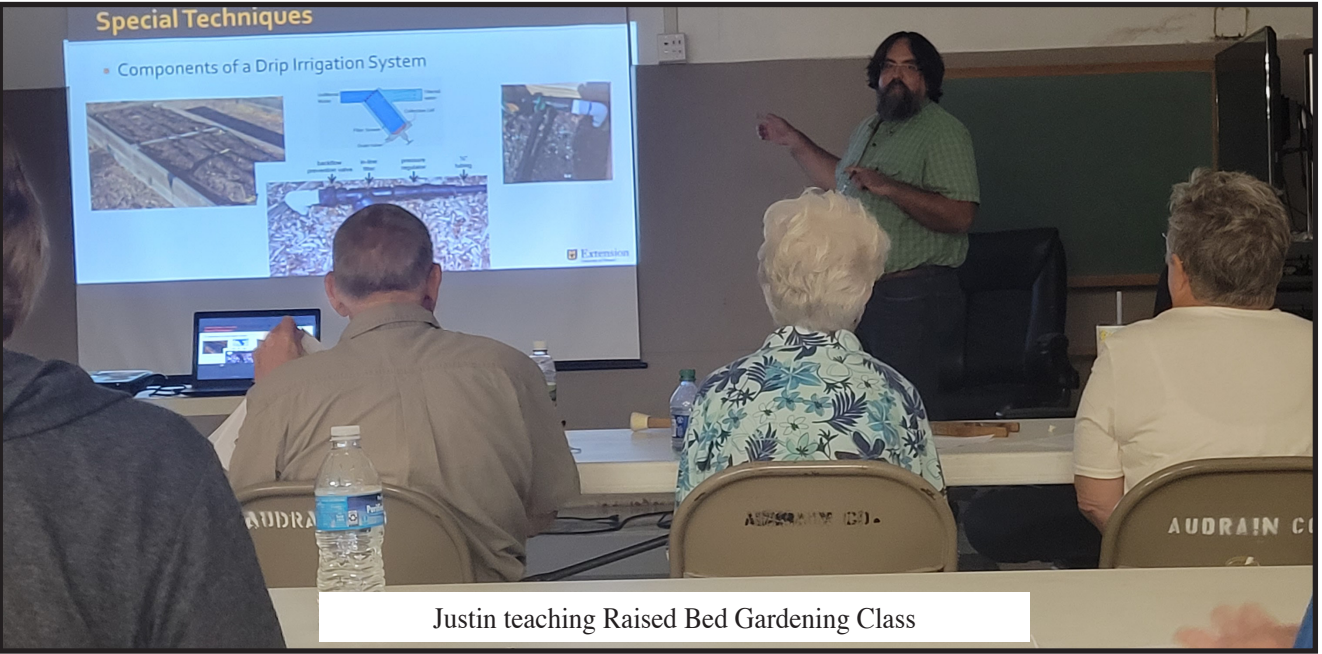


Collecting Farmers’ Market Price Data at Hannibal

## Farmers’ Markets Provide Price Data

The Missouri Department of Agriculture partnered with University of Missouri Extension to collect farmers’ market price data on crops present at Missouri farmers’ markets June-October of 2023. Six MU Extension Specialists collected data while providing production, marketing, and financial resources to producers around the state. There was a total of 63 different markets visit-

ed in 2023 with 2,246 prices collected. There were 14 market visits to 12 different markets mostly in Northeast Missouri. These markets were in Kirksville, Unionville, Brookfield, Milan, La Plata, Louisiana, Hannibal, Palmyra, Mexio, Booneville, and Columbia. There were 15 vendors from Audrain County selling at farmer’s markets.



Justin teaching Raised Bed Gardening Class



Collecting Farmers’ Market Price Data at Milan



# Audrain County Forage Loss Assessment

## State-wide Overview

The 2023 forage production season featured a prominent drought event that continues to impact the State. Drought conditions first emerged in April when the state recorded its 4th driest April (- 2.17”) dating back to 1895. Precipitation totals remained below average in May (-1.87”) and June (-2.72”) with average monthly temperatures running 1 to 2 °F above normal. Several rounds of heavy rainfall in late July and early August helped to bring temporary drought relief, but dry conditions returned in September and October. Overall, the seven-month period from April to October was the 14th driest (-6.02”) for Missouri and 2023 was the 7th warmest year on record through October. The largest precipitation deficits and areas most impacted by drought are approximately located along an axis from southwest to northeast Missouri.

The 2023 drought occurred during the growing season, resulting in widespread negative impacts to the agricultural sector. Depleted soil moisture led to poor pasture and crop conditions along with mature tree stress. Timely rainfall in July and August provided some relief to crops, but the return of hot and dry conditions in September and October limited fall pasture growth. Agricultural water supply was also a persistent issue with many pond levels low or dry. Larger streams and rivers were also dry, with up to 40% of the state’s monitoring gauges measuring streamflow well below normal since April.

Hydrological drought also contributed to commercial navigation impacts along the Mississippi River, especially south of St. Louis. Altogether, there were 984 community drought impact reports through the Condition Monitoring Observer Reports (CMOR) in 2023.

The transition from October to November in Missouri was marked by beneficial rainfall and colder temperatures but conditions were short lived. As of November 20, Missouri was on track for another month featuring both above normal tem-

peratures and below normal precipitation, extending the 2023 drought through the end of the fall season. This resulted in a continuation of drought impacts including agricultural concerns, enhanced fire risk and low water levels on streams, rivers and ponds. As of November 14, approximately 55% of the state remained in drought with 19% of the state being characterized as either severe or extreme drought.

## County Specific Data - Audrain

Cool-season grasses are the predominate forage species in Audrain County. Much of its annual forage production occurs prior to the summer “slump” period of July and August; which makes April, May and June the quarter of the calendar to make or break a year’s forage production.

Assuming soil fertility is adequate, soil moisture is the largest determining factor of forage production. This direct plant response makes tracking rainfall, and its contribution to soil moisture, an excellent barometer of forage production. During the April - June period, rainfall for Audrain County was 7.26 inches below the 1901-2000 average amounts. This represents a 58 % decline in precipitation during this critical period of forage production.

The observations of pastures and hayfields in the county, including conversations with area producers, provided a verification of this expected reduced forage productivity claim.

While there was some short-term relief from a few July and August rains, the cool-season grasses saw April - June temperatures for the county being 3 % above the 100-year average, and more importantly, a lower-than-normal soil moisture level to start the growing season due to the drought actually beginning in the fall of the previous year.

These measurements, observations and conversations shaped the agronomist’s opinion to be that Audrain County experienced a 58 % reduction in forage growth for the 2023 growing/grazing season.

# 2023 Audrain Extension Council Members

## Officers

Bobby Stone, Chairman  
Amy LeCount, Vice Chairman  
Leslie Meyer, Secretary  
Monica Brown, Treasurer

## Appointed Members

Leslie Meyer – County Commission  
Bobby Stone - MFA  
Amy Lecount - City of Mexico

## Elected Members

**District 1 – NW Area:** Monica Brown and Sam Sudbrock

**District 2 – SW Area:** Emily Curtis and Jayne Wehmeyer

**District 3 – NE Area:** Dawn Miller and Nikole Chism

**District 4 – SE Area:** Cindy Fort and Becky Hoyt

**District 5 – City of Mexico:**

Ron Hopkins, Jane Duffner, Randy Meyers and Betty Jo Sydenstricker

## University of Missouri Extension Faculty & Staff

### Headquartered in Audrain County

**Mary Sobba**  
Field Specialist in Agricultural Business

**Karen Potter**  
Administrative Assistant

### Headquartered out of County

**Mike Krauch**  
Regional Director  
**Jim Meyer**  
Extension Engagement Specialist

**Carrie Elsen**  
Field Specialist in Nutrition and Health  
**Stephanie Femrite**  
Assistant Extension Professor & Assistant  
Director 4-H Youth

**Justin Keay**  
Field Specialist in Horticulture

**Rusty Lee**  
Field Specialist in Agronomy

**Daniel Mallory**  
Field Specialist in Livestock

**Kent Shannon**  
Field Specialist in Agricultural Engineering

**Jeremiah Terrell**  
Field Specialist in Human Development