RETURN ON INVESTMENT

University of Missouri Extension

Ray County 2013 Annual Report
2013 Programs of Distinction

Agriculture Programs

Agronomy ............................................................... 1-5
Master Gardeners ................................................... 6
Beef .......................................................................... 7
Ag Business ............................................................ 8
Horticulture ............................................................ 9

Youth and Family Programs

Family Nutrition Education Program .......................... 10
4-H ........................................................................ 11
Embryology ............................................................ 12
Focus on Kids ........................................................ 13

Extension Council

Extension Council and Staff ................................. 14
UMC’s Impact on Ray County ................................. 15
Council Letter and Financial Statement .............. 16
December 2013

Dear County Commissioners and Friends of MU Extension:

As we enter 2014, we at University of Missouri Extension celebrate our 100-year partnership with you, with the State of Missouri and with the federal government. Through the Smith-Lever Act of 1914, the Cooperative Extension Service was established to provide practical application of research knowledge “to persons not attending or resident in said colleges in the several communities.” Over the years, the mission to bring you relevant, reliable and responsive education to improve lives and local economies remains the same. Yet, we also have changed to help you meet emerging issues and to take advantage of emerging opportunities.

Every day, MU Extension helps create value for citizens. For example:

- Throughout the state, MU Extension provides information to help address issues and opportunities related to Missouri’s economic infrastructure, public services, economic development, jobs and educational access. Counseling more than 3,000 business clients in FY12 resulted in 9,328 new jobs, sales increases of $188 million, $213 million in new business financing, and government contracts of more than $195 million.

- Our state and nation are in need of workers who are highly proficient in science, technology, engineering and math (STEM). Research has shown that 4-H members develop an increased interest in science three times higher than their non-peers. Both non-traditional activities, such as robotics, and more traditional activities, such as livestock judging and food preparation, are doorways to science-related careers.

- Livestock production accounts for about 53 percent of the state’s agricultural receipts. MU Extension’s Tier Two Show-Me-Select Replacement Heifer Program, which improves reproductive efficiency of beef herds, has garnered producers $237 to $357 per heifer, depending on breeding protocol followed. Statewide economic impact of the program has exceeded $65 million.

These are just three examples of MU Extension’s impact – made possible through your support of MU Extension in your community. I look forward to our continuing partnership, and as always, your ideas for improving our partnership are welcome.

Sincerely,

Michael D. Ouart
Vice Provost and Director

University of Missouri, Lincoln University, U.S. Department of Agriculture and Local Extension Councils Cooperating

EQUAL OPPORTUNITY/ADA INSTITUTIONS
**RAY COUNTY CROP SCOUTING PROGRAM**

The 2013 Ray County crop scouting program was a pilot program to see how beneficial a crop scouting program in the Ray county area would be. The overall goal of the program was to aid farmers in their pest management efforts. It was designed to increase producers’ knowledge on crop scouting and give them an idea of what pests were in the area and what pests they should be scouting for. The program was intended to last 20 weeks or until the end of the corn and soybean growing season. Weekly phone messages and emails were sent to participants.

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>What Did They Learn?</th>
<th>What Action Did Participants Take or How Did They Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
</tr>
</thead>
</table>
| 11                           | • Weekly corn and soybean pest found in the area.  
• Economic thresholds for crop pests  
• How to identify several crop diseases, insects, and weeds.  
• The best management practices for controlling several crop pests | • Several participants scouted their fields more frequently.  
• Some participants made applications of insecticides after getting the report of economic thresholds and scouting their fields  
• Some producers stated they decided not to apply fungicides because they believed the pest population was below the economic threshold stated in the report. | Proper identification and scouting of pests is crucial in every successful farming operation. A quick update informing producers of what pests are in the area allows them to specifically focus on certain pest when scouting. Equating the pest population to an economic injury level will then allow the producer to determine when treatment is justified. Treating pests when necessary will help ensure higher yields, while not treating pest when pest are below economic thresholds will reduce unnecessary input cost. Thus the producers will increase total profits. Also, not applying pesticides when pest numbers are low will reduce the amount of pesticides being put into the environment. |
RAY COUNTY SOILS AND CROPS CONFERENCE
The Ray County Soils and Crops Conference focuses on row crop production. It is an event that gives producers the opportunity to hear the latest information and ideas from University of Missouri specialists; allowing them to make pivotal management decisions from research-based data. The conference also gives Certified Crop Advisors the opportunity to earn 4 CEUs.

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>Total Hours of Collective Workshop Participation in 2013</th>
<th>What Did They Learn?</th>
<th>What Action Did Participants Take or How Did They Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
</tr>
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<tbody>
<tr>
<td>12</td>
<td>84</td>
<td>• Crop management techniques to add stability to corn and soybean yields.</td>
<td>• Most participants planned to incorporate cover crops into their farming operations or to adjust the current cover crops being used.</td>
<td>Implementing crop management techniques that increase yield stability and overall yields directly results in higher profits for crop producers. Ray County’s economy strongly depends on agriculture. When crop producers are profitable they are able to employ more workers and often require more services from local farm companies and agencies, further increasing employment within the county and across the state. Increasing the stability of crop yields increases the likelihood of a stable food supply. Incorporating cover crops will also reduce the amount of nutrient runoff into surrounding water systems and therefore protecting the environment.</td>
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<tr>
<td></td>
<td></td>
<td>• The economics of using cover crops.</td>
<td>• Some participants indicated they planned to scout their fields more in seasons to come.</td>
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<td></td>
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<td>• Methods to establish and manage cover crops.</td>
<td>• Participants stated they planned to use weather data and long range soil temperature predictions to make planting decisions.</td>
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<td></td>
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<td>• Management of problematic corn and soybean insects.</td>
<td>•Certified Crop Advisor received 4 CEUs.</td>
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<td>• How to put 2012’s drought into perspective using Missouri climatological history and trends</td>
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<td></td>
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<td>• Information on financial assistance programs from local agriculture agencies.</td>
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Dr. Bill Wiebold discusses crop management techniques to increase yield stability
**2013 Pasture Recovery**
The 2012 drought took a toll on several pastures throughout Ray County. The goal of this program was to aid farmers in their pasture recovery efforts.

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>Topic</th>
<th>What Did They Learn?</th>
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<tbody>
<tr>
<td>20</td>
<td>• Pasture Recovery</td>
<td>• Potential spring and summer seeded forages for short term recovery.</td>
<td>• A few producers successfully incorporated clovers into their pastures.</td>
<td>Feeding cost is the largest cost associated with livestock production. The easiest and generally most economical way for producers in Ray County to feed their livestock is via grazing. Ensuring there is adequate available forage will reduce the amount of hay livestock producers will need purchase. Less feed cost will result in higher returns and will allow producers to maintain or increase the number of livestock on the operation. This will result in more livestock being sold throughout the county and state.</td>
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<td></td>
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<td>• Optimal cool-season grass establishment methods.</td>
<td>• Several participants stated they planned to establish cool-season grasses in the fall.</td>
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<td>• How to add legumes into existing grass sod and the benefits of doing so.</td>
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<td></td>
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<td>• Incorporating native warm-season grasses into pasture systems.</td>
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<td>• Recommended fertilizer and lime for pastures.</td>
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A good stand of red clover well established in a cool-season grass forage.
**PRIVATE PESTICIDE APPLICATOR TRAINING**

The private pesticide applicator training is required for certification and recertification of private pesticide license used to purchase restricted use pesticides.

<table>
<thead>
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<th>Number of Ray County Learners</th>
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<tbody>
<tr>
<td>17</td>
<td>51</td>
<td>Evaluation of the workshops showed that participants learned: • The ability to safely apply pesticides • The importance of crop scouting • How to correctly calibrate spray equipment. • Ability to measure and spray the correct rate of pesticides. • To compare active ingredients to save money. • What qualifies personal protective equipment according to chemical labels. • What adjuvants are and when to use them. • Where to find certain directions in a pesticide label. • Economic Thresholds and economic injury levels. • Non-chemical pest management strategies • Pesticides impact on environment and surrounding water sources. • Record-keeping requirements</td>
<td>• Participants obtained private pesticide applicator license. • Half of participants stated they planned to correct their misuse of pesticides by: - Reading labels - Wearing personal protective equipment - Being aware of surroundings - Increasing safety - Empty containers properly</td>
<td>Proper use of pesticides protects the pesticide applicator, surrounding people, the environment and water supply. Proper use of pesticides will help control agriculture pest while decreasing the chance of pesticide resistance. This in return will help the bottom line of producers while keeping and ensuring a safe and affordable food supply with a healthy environment.</td>
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Wyatt Miller – stresses the importance in reading and following the pesticide label.
SOIL TESTING

Soil testing allows producers to see what is currently in their soil and what nutrients are needed to ensure a productive crop.

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</tr>
</thead>
</table>
| 43                            | 22                                                   | Producers learned:  
- What nutrients were in their soil  
- Current soil pH levels  
- Amount of fertilizer and lime needed to build soil nutrients and pH to ideal levels. | Producers benefit by knowing how much fertilizer and lime is required to bring nutrients and pH up to optimal levels, by increasing the likelihood of high crop yields.  
Producers also reduce the chance of over application of fertilizer, thus saving money. | Using correct fertilizer amounts will help ensure a productive crop which, in return, will help the local economy and ensure an affordable food supply.  
Applying the correct amount of fertilizer will reduce the amount of nutrient runoff into surrounding water systems and help protect our environment. |

Using correct fertilizer amounts will help ensure a productive crop which, in return, will help the local economy and ensure an affordable food supply.

Applying the correct amount of fertilizer will reduce the amount of nutrient runoff into surrounding water systems and help protect our environment.
AGRICULTURE – MASTER GARDENERS
EDUCATION PLUS SERVICE FOR BETTER COMMUNITIES

Program Name: Master Gardener

<table>
<thead>
<tr>
<th>Number of Learners</th>
<th>Topic</th>
<th>What Did They Learn?</th>
<th>How Did Participants Benefit?</th>
<th>How Does This Work Make My Assigned Area and Missouri Better?</th>
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<tbody>
<tr>
<td>20 Active Master Gardeners in ten counties</td>
<td>Master Gardener classes held in St. Joseph and Gallatin</td>
<td>Basic plant botany</td>
<td>Master Gardener class trainees receive twelve weeks of in-depth training on all aspects of horticulture. This instruction benefits them in their private gardens and landscapes, as they apply that knowledge to problems that inevitably arise.</td>
<td>Master Gardeners provide a phenomenal amount of volunteer service to the community. This can take many forms. Most groups participate in some kind of community beautification program, where a public area is maintained for beauty and enjoyment. The Daviess County Master Gardeners, for example, participate in the MODot Adopt-A-Highway program for a section of Highway 13 around their flower beds on the north edge of Gallatin. The flower beds were reconstructed in 2010 to include new hardscape features such as boulders, as well as new plants including ornamental grasses. This project has received many positive comments in the community.</td>
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<tr>
<td>Over 300 volunteer hours</td>
<td>Master Gardener projects provide volunteer service to communities</td>
<td>Soils and fertility</td>
<td>Participation in a local Master Gardener group also benefits that individual through continuing education. Throughout the year, additional horticultural instruction is given periodically. Master Gardener groups offer an important point of social gathering in a community, around a shared topic of interest.</td>
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<td>Over 300 direct contacts</td>
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<td>Plant disease identification and control</td>
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<td>Vegetable crop production</td>
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<td>Insect identification and control</td>
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<td>Home fruit production</td>
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<td>Plant propagation</td>
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<td>Landscape design</td>
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<td>Use of native plants in the landscape</td>
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<td>Turf establishment and maintenance</td>
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<td>Growing woody ornamentals</td>
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<td>Annual and perennial flowers</td>
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<td>Pesticide use and safety</td>
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<td></td>
<td></td>
<td>Continuing education in numerous horticultural topics</td>
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<td>Bees and bee culture</td>
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</table>

Master Gardeners perform many hours of volunteer work each year, beautifying Daviess County. A local fire department requested a simple, low-maintenance design, to go around their flagpole. The Daviess County Master Gardeners designed and constructed this attractive planter.

Continuing education is part of the Master Gardener experience. Here, the Daviess County group tours a commercial tomato greenhouse to learn how growers produce early, top-quality, tasty tomatoes.

Master Gardeners are also educators. Here two Daviess County Master Gardeners teach the Master Gardener group in Grundy County how to make large-scale concrete leaf impressions for water gardens and landscaping. The Daviess county group had made these in a very successful fundraising effort to support their beautification projects around the county.
<table>
<thead>
<tr>
<th>Number of Learners</th>
<th>Topic</th>
<th>What Did They Learn?</th>
<th>How Did Participants Benefit</th>
<th>How Does This Work Make Our Counties and Missouri Better?</th>
</tr>
</thead>
<tbody>
<tr>
<td>831 plus Beef Cattle and Forage Producers</td>
<td>In total approximately 1014 hours were spent in learning beef cattle production, forage production and utilization, nitrate management, nutrition management and ration balancing by area participants as well as the continuation of the North Missouri Grazing Group.</td>
<td>Strategies to optimize beef production and improve costs on their operations, including managing feedstuffs, pregnancy checking females, documenting individual animal performance throughout the entire production phase, including what determines value on each animal.</td>
<td>With the drought conditions in 2012 and part of 2013 beef and forage producers are better prepared to make informed decisions on their operations regarding, animal health, genetic selection, nutrition, as well as income and expenses that affect the bottom-line for their respective operations. Including reducing feed wastage and marketing low or non-productive animals in a more-timely manner.</td>
<td>Many beef producers contacting me are looking for answers to questions specific to their operation. By taking a total quality management approach for each operation we can help producers get the information and resources they need to improve the bottom line for their operations. When you support beef and forage production for the clients in our area, participants learn high quality unbiased research based production strategies which result in increased success for producers in reaching their production and financial goals. By maintaining or improving soil health and water quality through better distribution of nutrients on our forage and beef cattle operations, we ensure future generations will have safe and plentiful natural resources. With over 80,000 head of beef cattle in the area a viable agriculture economy has a positive impact on our area and plays a key role in our local, regional, state, national and world economies.</td>
</tr>
<tr>
<td>744 plus Youth participants</td>
<td>In total approximately 889 hours were spent by area youth learning conservation, water cycles and good agricultural production practices.</td>
<td>Strategies area beef and forage producers are using to optimize their operations while minimizing soil and nutrient losses and other negative impacts on the environment.</td>
<td>By having a better understanding of the research based information and good production practices producers utilize on their operations youth will be better able to understand why they as producers themselves need and are good stewards of their land and resources.</td>
<td>Well-informed youth are better prepared to make decisions based on research based results. Youth are our future and provide great opportunities for our area.</td>
</tr>
</tbody>
</table>
### Program: Farm Business Management Education

<table>
<thead>
<tr>
<th>Number of Ray County Residents Directly Impacted</th>
<th>What Did They Learn?</th>
<th>What Action Did They Take?</th>
<th>How Does This Work Make Lafayette County and Missouri Better?</th>
</tr>
</thead>
</table>
| 18 farmers                                      | • Recent developments in agricultural markets that impact commodity prices and production decisions  
  • Strategies and tools to reduce risk exposure and protect farm profitability  
  • Skills and tools to develop enterprise budgets  
  • The costs and benefits of crop insurance products  
  • How to establish a sound marketing plan based on fundamental marketing principles, risk tolerance, and market outlook | • Farmers made production and marketing decisions based on un-biased information provided by University ag economists  
 • Farmers developed marketing plans  
 • Farmers made sound decisions about purchasing crop insurance | • Farm business management education increases and/or stabilizes farm incomes, which leads to a more stable rural/farm economy  
 • Stability in the rural/farm economy creates job security for farm workers, ag suppliers, equipment dealers, and other supporting businesses  
 • A robust and stable agricultural sector of the economy enhances the well-being of county and state residents by providing income, jobs, food, clothing, shelter, and energy |

### Program: Farm Lease Education

<table>
<thead>
<tr>
<th>Number of Ray County Residents Directly Impacted</th>
<th>What Did They Learn?</th>
<th>What Action Did They Take?</th>
<th>How Does This Work Make Lafayette County and Missouri Better?</th>
</tr>
</thead>
</table>
| 22 farmers & landowners                        | • How to establish equitable leasing arrangements based on parties’ risk exposure and farm profitability  
  • Current trends in leasing, including trends with crop share arrangements, cash rents, & flexible leasing provisions  
  • Legal rights and responsibilities associated with leasing land or animals  
  • Strategies to maintain and/or improve relationships between tenants and landowners  
  • The value of a written lease and provisions to include in a written lease agreement | • Tenants and landowners reviewed lease provisions to ensure equity in their leases  
 • Tenants and landowners communicated expectations related to farm maintenance, conservation, crop rotations, and lease terms  
 • Tenants and landowners developed written lease agreements in place of former verbal leases  
 • Farmers & landowners settled disputes and/or improved their relationships by implementing lease management strategies | • As a result of lease management education, farmers and landowners experience better relationships which leads to longer land tenure and greater income security for both parties  
 • Transitions in farm ownership and/or operation are less onerous because lease education encourages communication, fairness, and professionalism among farm managers  
 • Lease education makes the lives of non-farmers & non-landowners better by encouraging productive & wise land use, which leads an abundant food supply and a healthy environment. |
# Agriculture – Commercial and Home Horticulture

## Education for Better Crops

**Program Names:** Missouri Grown Home Horticulture and Environment Turfgrass Management/Green Industry

<table>
<thead>
<tr>
<th>Number of Learners</th>
<th>Topic</th>
<th>What Did They Learn?</th>
<th>How Did Participants Benefit?</th>
<th>How Does This Work Make My Assigned Area and Missouri Better?</th>
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</thead>
<tbody>
<tr>
<td>2760 Commercial and home contacts in ten counties</td>
<td>On-site visits with Commercial Ag producers</td>
<td>Identification and control of plant diseases and insects</td>
<td>Commercial producers growing horticultural crops have great potential for profits. However, diseases and insects can act very quickly to wipe out a crop and produce significant losses. By timely intervention, these growers’ crops may be saved.</td>
<td>Keeping the rural economy going means keeping families on the farm, and doing so profitably. Commercial horticultural production has some of the greatest potential for profits in modern agriculture. By keeping these farming enterprises going, and dealing with problems as they arise, the farmer is kept on the farm, and the trickle-down effect of his success is spread across the entire community as he purchases inputs for his farm and conducts everyday commerce with his friends and neighbors.</td>
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<td></td>
<td>Working with Produce Auction</td>
<td>Proper use of pesticides</td>
<td>The proper use of pesticides is critical for both grower and consumer safety. Growers trained in this area learn to safely use these materials, leading to better health.</td>
<td>Producing a good and safe food supply is critical for our nation. Whether it is through the safe handling of pesticides or following Good Agricultural Practices, a farmer who produces high quality and safe food passes on a product that inspires confidence in the consumer. Food such as this is more nutritious, producing better health. This ultimately leads to decreased health care costs.</td>
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<td></td>
<td>Meetings for Commercial Ag producers</td>
<td>Introduction to Good Agricultural Practices and food safety</td>
<td>Commercial fruit and vegetable producers are coming under increasing pressure to conform to the standards of Good Agricultural Practices (GAPs). By offering training in GAPs, Extension helps these growers produce safer food. They are also made aware of the regulatory environment surrounding GAPs, and how to satisfy requirements in this area.</td>
<td>Homeowners who practice horticulture, whether it is producing food or planting ornamentals, increase the value of their homes. When this is practiced on a community-wide scale, the effect can be remarkable. Communities with poorly-developed landscaping are not as attractive as those where homeowners seek to beautify their properties. Collectively, these improvements lead to increased property values throughout the entire community.</td>
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<td>Educating homeowners for their horticultural needs</td>
<td>Marketing options</td>
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<td>County Ag Updates and Pesticide Applicator Training</td>
<td>Starting a horticultural farming operation</td>
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<td>Landscaping for homeowners</td>
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<td>Plant care for homeowners</td>
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</table>

**Horticulture Specialist**

Tim Baker

Serving Daviess, Grundy, Harrison, Mercer, Caldwell, Livingston, Ray, Carroll, Lafayette, & Saline Counties in Northwest Missouri

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Ag Updates offer growers the opportunity to obtain or renew their Private Applicator’s License. In addition, each agricultural discipline (Agronomy, Livestock, Farm Management, Ag Engineering, and Horticulture), offer updates of interest to growers on current problems. Here, Heather Benedict, Agronomy Specialist, teaches about soybean pests at the Grundy County Ag Update, held at a local church’s activity center, in Trenton.
<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>School Districts Served</th>
<th>What Did They Learn?</th>
<th>How Participants Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1612 participants received information on nutrition, food safety, and physical activity for lifelong health and fitness.</td>
<td>Reached youth in Ray County School Districts and other agencies.</td>
<td>Through Food Nutrition programs such as:&lt;br&gt;- Back Pack program&lt;br&gt;- Show-Me Nutrition education&lt;br&gt;- Show-Me Nutrition Displays&lt;br&gt;- Show-Me Nutrition Newsletters&lt;br&gt;Participants in FNEP:&lt;br&gt;- Are more aware of nutrition&lt;br&gt;- Make healthier meal and snack choices&lt;br&gt;- Eat breakfast more often&lt;br&gt;- Are more willing to try new foods&lt;br&gt;- Are more physically active&lt;br&gt;- Read labels</td>
<td>Ninety-nine percent of teachers reported one or more changes in students after FNEP.&lt;br&gt;- 91% are more aware of nutrition&lt;br&gt;- 82% improved hand washing&lt;br&gt;- 49% eat breakfast more often&lt;br&gt;- 68% make healthier meal and/or snack choices&lt;br&gt;- 62% increased physical activity</td>
<td>In 2013 the Family Nutrition Program (FNEP) brought $7,653,958.00 in Federal funds to the state of Missouri. These funds were used to provide nutrition education to 1,069,104 food stamp recipients and food stamp eligible citizens of Missouri. One thousand six hundred and twelve of these participants reside in Ray County. It also funds three full-time jobs with quality benefits plus expenses for making the programming available to qualified schools and agencies in the county. Participants in FNEP who practice healthy eating and activity behaviors are more likely to enjoy a high quality of life as an adult and into old age. A healthy labor force is critical to attracting and keeping jobs in Missouri. In addition, this important programming effort serves to reduce healthcare costs over the participant’s lifetime, saving taxpayers money in reduced public healthcare benefits.</td>
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</table>
RAY COUNTY 4-H
A community of youth building life skills, engaging in science and connecting to their community.

NANCY COLEMAN
4-H YOUTH DEVELOPMENT SPECIALIST
Serving Ray County in the Northwest Region

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<tr>
<td>A community of 233 4-H members building life skills, engaging in science and connecting to community Members are supported by 169 trained youth and adult volunteers.</td>
<td>Ray 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 aerospace and arts to veterinary science and sport fishing. Clubs also involve children and teens in community service, camping and educational trips</td>
<td>Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). In 2011, MU Extension 4-H connected 8,500 young people age 8 to 18 to University of Missouri campuses and faculty. Being on a campus is a predictor of youth going on to higher education (Hoover, 2006) Ninety-nine percent of teachers reported one or more changes in students after These students are more likely to go to college and enjoy • increased financial success for themselves and their offspring • be better consumers • improve quality of life through more opportunities for leisure and hobbies • improve health for themselves and their children (Porter, 2003) • more likely to vote as adults • more likely to contribute to their community (Lerner, 2009; Zaff et al, 2003).</td>
<td>Youth who earn their bachelor’s degree, increase their annual earnings by $2.4 million over their lifetime (NACUBO, 2012). If 70% of the members participating in 4-H events on the MU Campus go on to earning their Bachelors, 4-H would help young people earn $75.98 million more of lifetime earnings Missouri 4-H volunteers responding to a survey report they contribute on average 100 hours per year. Valuing their time at $19 per hour, based on average Missouri incomes, the contribution of Lafayette County 4-H volunteers was worth more than $499,700 in 2013! These adults serve as mentors for our youth, which is priceless 4-H project work and related educational experiences help youth explore interests in citizenship, communications and leadership 4-H youth report three times more opportunities than their non-4-H peers to engage in meaningfully community leadership roles</td>
</tr>
</tbody>
</table>

4-H Regional / State Attendance:
- 4-H Camp:
  - Counselor Training: 2
  - 4-H Camp--13
- Regional Energizer: 13
- State Fair Exhibitors:
  - 62 exhibits
  - 2 demonstrations
- State Contest Attendance:
  - Fashion Revue—3
  - Public Speaking—1
  - Horse Judging—5
  - Horse Bowl—1
  - Horse Hippology--9
  - Shooting Sports

Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). In 2011, MU Extension 4-H connected 8,500 young people age 8 to 18 to University of Missouri campuses and faculty. Being on a campus is a predictor of youth going on to higher education (Hoover, 2006) Ninety-nine percent of teachers reported one or more changes in students after These students are more likely to go to college and enjoy • increased financial success for themselves and their offspring • be better consumers • improve quality of life through more opportunities for leisure and hobbies • improve health for themselves and their children (Porter, 2003) • more likely to vote as adults • more likely to contribute to their community (Lerner, 2009; Zaff et al, 2003).
## EMBRYOLOGY
### HATCHING CHICKS IN THE CLASSROOM SCIENCE PROJECT

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>Total Hours of Collective Learning</th>
<th>What Did They Learn?</th>
<th>How Participants Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
</tr>
</thead>
<tbody>
<tr>
<td>641 Students and 23 Teachers</td>
<td>640 hours of classroom learning in 23 classrooms in Ray County.</td>
<td>Through the 4-H Embryology Program youth are learning about science and respect for life through direct experience with living things, their life cycles and their habitats. Pre-incubated eggs are delivered to the school where they hatch about four days later. During this time, students have the opportunity to learn the scientific process of embryology including: incubation, preparing a brooder, hatching, identifying parts of an egg and development of chicks in the egg. While students care for the eggs and chicks, they learn leadership, responsibility, sharing, decision-making, critical thinking and teamwork.</td>
<td>Children learn by listening, observing, experimenting and applying their knowledge gained from the 4-H Embryology Program to real-world situations. Children of all ages develop personal confidence and leadership abilities through hands-on experiences in Hatching Chicks Project activities. As Ray County students continue on their learning journey, they have increased knowledge and skills in: • Nutrition • Food Production • Food Safety and Production</td>
<td>Missouri is seeking to be a national and international leader in life sciences. The 4-H school enrichment Embryology Project helps students at an early age begin to develop an understanding of science as a technology for supporting and contributing to as an adult to Missouri’s economy in life sciences industry. 4-H science programs reach more than 5 million youth with hands-on learning experiences; these experiences are supported by more than a half-million dedicated adult volunteers who are placing 4-H youth on a path towards successful careers. 4-H will address our nation’s critical challenge of developing a long-term solution for improving science literacy and aptitude by preparing 1 million new young people to excel in science, engineering and technology.</td>
</tr>
</tbody>
</table>
FOCUS ON KIDS  
PROGRAM FOR DIVORCING/SEPARATING PARENTS  
OUR MISSION IS TO HELP PARENTS LEARN HOW TO NURTURE AND SUPPORT THEIR CHILDREN DURING AND AFTER THEIR DIVORCE/SEPARATION

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>Total Hours of Collective Learning</th>
<th>What Did They Learn?</th>
<th>How Participants Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each year, the Focus on Kids program helps more than 3,500 divorcing/separating parents in Missouri.</td>
<td>85 hours of learning. 6 classes per year are taught. and at 2.5 hours per class, that only adds up to 15 direct contact hours as the instructor.</td>
<td>Trained University of Missouri Extension regional specialists teach Focus on Kids throughout Missouri to help parents learn how to nurture and support their children during and after their divorce. Participants reported that they learned:  That it’s important to tell my kids the divorce wasn’t their fault.  Keep the arguing away from the kids and try not to say anything negative about their dad in front of them.  The class helped me realize that lots of parents are going through the same thing and it was good to be in a group together.</td>
<td>Parents who attended Focus on Kids reported the following after attending:  92 % agreed” or “strongly agreed” that they “plan to avoid arguing/fighting with my children’s other parent in front of my children.”  98% “agreed” or “strongly agreed” that “the program helped me think of new ways to resolve conflicts about the children with the child(ren’s) other parent.”  89% “agreed” or “strongly agreed” that they “plan to make a stronger effort to work with the other parent for the child’s sake.”  92% “agreed” or “strongly agreed” that “the program provided useful ideas about reducing stress for children.”</td>
<td>When parents participate in Focus on Kids, they will learn how to nurture and support their children during and after separation and divorce, which leads to more children being raised in a healthy low-conflict environment, which will benefit other community members by reducing the need for community health services for children.  Divorcing parents learn how sustained parental involvement by both parents is in the best interests of their children.  Statistics on success in school, delayed sexual activity and reduced drug experimentation are improved for children with two involved parents. This reduces costs of educational special services and the legal system costs.</td>
</tr>
</tbody>
</table>
# Ray County Extension Council and Faculty/Staff

## Ray County Extension Council Members
- Shelia Oyler, Chair and Regional Council Representative
- Danielle Russell, Vice Chair
- Stacey Cox, Secretary
- Everett Balman, Treasurer
- District I:
  - Shelia Oyler
  - James Wollard
- District II:
  - Shanon Keighley
  - Simon Estes
- District III:
  - Danielle Russell
  - Jon Williams
- District IV:
  - Jodi Stewart
  - Ron Russell
- District V:
  - Janell Wilson
  - Brett Siemens

## Ray County Commissioners
- Robert King, Presiding Commissioner
- Allen Dale, Eastern Commissioner
- Mike Twyman, Western Commissioner

## Extension Faculty and Staff Based in Ray County
- Nancy Coleman
  - 4-H Youth Specialist and County Program Director
- Wyatt Miller
  - Agronomy Specialist
- Elizabeth McGraw
  - Office Manager
- Kathy Smith
  - Nutrition Program Education Associate

## Additional Faculty and Staff Serving Ray County
- Karma Metzgar, NW Regional Director
  - St. Joseph, Mo
- Jill Knadler
  - Regional Office
  - St. Joseph, Mo
- Tim Baker
  - Horticulture Specialist
  - Daviess County
- James J.W. Crawford
  - Natural Resource Engineer
  - Atchison County
- Jim Humphrey
  - Livestock Specialist
  - Andrew County
- Beverly Malsberger
  - Community Development Specialist
  - Buchanan County
- Connie Neal
  - Housing and Environmental Design Specialist
  - Grundy County
- Jerry Baker
  - Community Development Specialist
  - Atchison County
- Diana Milne
  - Human Development Specialist
  - Clay County
- Family Nutrition Program Regional Office
  - Cameron MO
  - Penny Crawford
    - Nutrition Program Associate
  - Constance Mowrer
    - Extension FNP Program Manager
2014 Impact on Ray County, Missouri

The County at a Glance

Population: 23,542

UM Students: 96
UM Alumni: 427
UM Employees: 10

UM Salary & Retirement Income: $275,004
UM State Tax Revenue: $9,710
UM Federal Tax Revenue: $40,626

2014 UM Students from Ray County in 2013
96 students
40 - MU
46 - UMKC
10 - Missouri S&T
70 - Undergraduates
26 - Graduates
73 - Full-time students
23 - Part-time students

UM Alumni Residing in the County in 2013
427 alumni
220 - MU
180 - UMKC
23 - Missouri S&T
4 - UMSL
166 Selected School Alum
5 - Medicine
17 - Nursing
10 - Health Professions
7 - Dentistry
12 - Pharmacy
4 - Optometry
4 - Veterinary Medicine
55 - Agriculture
40 - Engineering
15 - Law

UM Employees and Retirees Residing in the County in 2013
10 People Employed by UM
  • 3 - MU
  • 7 - UMKC

3 UM Retirees and Beneficiaries

UM Services Received in the County in 2013
22 patients seen at UM Health Care, with $185,968 of uncompensated care.
54 patients seen at the UMKC School of Dentistry with an average of $26 per patient in uncompensated care.
6,036 contacts with MU Extension through MU Extension events held in district counties.

UM Alumni Teaching K-12 in the County
37 teachers
14% of all county teachers
4 principals and administrators
24% of all county principals & administrators
February 2014

Dear Friends of University of Missouri Extension,

The University of Missouri Extension is a unique partnership between the university and local government. In Ray County, we are proud of this important tie that has enabled us to work together to improve the lives of the citizens of Ray County. This annual report is a glimpse of program highlights that occurred in 2013.

We look forward to continuing to help Ray County citizens as they “Live and Learn”.

Sheila Oyler        Stacey Cox        Nancy Coleman
Extension Council Chair       Extension Council Secretary          County Program Director

2013 Financial Summary of the Ray County Extension Council

Funding from county, state and federal monies makes University Extension unique. State/federal funds are used for specialist salaries, orientation, in-service costs & postage. Ray County funds support local office costs.

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>RAY COUNTY COURT FUNDS (1)</th>
<th>RAY COUNTY COURT FUNDS (1)</th>
<th>RAY COUNTY EXTENSION FUNDS (2)</th>
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<tr>
<td></td>
<td>Actual Dollars</td>
<td>In-Kind Dollars</td>
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<td>INCOME</td>
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<td>Ray County Appropriation</td>
<td>$ 23,092.80</td>
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<td>Ray County Extension</td>
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<td>$ 2,636.76</td>
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<td>EXPENSES</td>
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<td>Secretarial Wages, Benefits and Employer Taxes</td>
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<td>Travel for Program Delivery</td>
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<td>$ 2,295.25</td>
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<td>Misc.</td>
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<td>TOTALS</td>
<td>$ 23,092.80</td>
<td>$11,143.19</td>
<td>$ 6,500.13</td>
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</table>

TOTALS OF:
(1) COUNTY COURT FUNDS          $34,235.99
(2) EXTENSION FUNDS            $ 6,500.13
GRAND TOTAL OF COURT & EXTENSION FUNDS $40,706.12

Ray County Extension is a service that is made possible by partnerships between the Ray County Extension Council, the Ray County Commission, and the University of Missouri. Without the support of local county appropriations, MU Extension would be unable to secure the total support, so we really appreciate the continued support the Ray County Commission has seen fit to provide MU Extension in Ray County.