Tomato Insects

By: Tim Baker, Horticulture Specialist

In my last column, I discussed the types of diseases which typically plague tomatoes in Missouri, and gave a few examples of each type. This week, I would like to cover a few of the major insect pests that you will need to keep a lookout for when growing those prize winning tomatoes.

One of the more dramatic insects that attacks tomatoes, at least in terms of visible damage in short order, is the tomato hornworm. These insects can strip tomato stalks bare of leaves very quickly. They are also very large in size, up to four inches in length. Green in color, they can blend right into the foliage and hide easily, in spite of their size. To control tomato hornworms, you can easily pick them off if there are only a few per plant. If you have a large infestation or number of plants, you can use insecticides such as Sevin, or a biological control such as Bt. Be sure to follow all directions and observe pre-harvest intervals when using any agricultural chemical.

A similar insect is the tomato fruit worm, which is also known as the corn earworm. Yes, the same worm that messes up your perfect ear of sweet corn can also attack your tomatoes. Be sure to destroy any infected fruit, so that the worm won’t be around to reproduce. Insecticides are the same as those used for the tomato hornworm.

Yet another type of worm is the cutworm, which can attack tomatoes at any stage of growth, from seedlings to mature plants including tomato fruits. Sevin can be used to control them.

Several insects attack tomato leaves, leaving them injured or deformed and less able to supply sugars to those growing tomato fruits. One example is the aphid. These insects typically curl and deform leaves. While the damage may not look extensive, there is a problem beyond what you see. Aphids are known to transmit a number of viral diseases, and once your tomato has a viral disease, it cannot be eliminated. Other insects that transmit viral diseases include flea beetles, leafhoppers, thrips, and whiteflies. These should be controlled with an appropriate insecticide.

Two other beetles that can cause problems in tomatoes include the Colorado potato beetle and the blister beetle. They will eat foliage, and can be controlled with sevin.

Leafminers occasionally attack tomatoes, leaving long, slender tunnels inside the leaves, which are visible and appear as white streaks. You can also see damage from stink bugs, which suck juices from the fruits and cause hard, cloudy or irregular whitish spots under the surface of the skin. Again, you may need to spray to control these pests.

The final pest that I will mention is actually not an insect at all. It’s the spider mite, which is microscopic in size, and feeds on leaves. These pests cause small yellow areas in the leaf. Their populations can expand rapidly under hot, dry weather. Control can be achieved using a miticide, or if you spray diligently, an insecticidal soap.
Atmospheric Steam Canning—A new Option

By: Janet Hackert Nutrition and Health Education Specialist

For many years, boiling water canning has been safely used to can foods high in acid, whether naturally acidic, like fruit, jams and jellies, or acidified foods, like pickles or sauerkraut. University of Wisconsin-Madison has released another tested process for safely canning high-acid foods: atmospheric steam canning.

Atmospheric steam canners use steam at 212 degrees Fahrenheit to heat food in jars inside the canner to the temperature needed to make it safe. But like boiling water canning, it is only a safe method if research-tested recipes are followed exactly. University of Wisconsin Extension does not recommend relying on the canning instructions in the booklet that comes with the canner. Also, certain conditions must be met. Some of these are the same as for boiling water canning:

Foods must be acidic, that is, pH lower than 4.6. The jars must be heated prior to filling with hot liquid, using hot or raw pack.

Processing time must be adjusted for higher elevations. To find the elevation at a location, go to http://www.daftlogic.com/sandbox-google-maps-find-altitude.htm

Specific to atmospheric steam canning, the following conditions must also be met:

Jars must be in pure steam so the canner must be vented until a full column of steam (8-10 inches) is released from the vent ports. The internal temperature must remain at 212 degrees Fahrenheit or higher throughout the processing time. Some steam canners have a thermometer built in; for those that do not, a thermometer can be inserted into one vent port to monitor the temperature.

Processing time, including any added for higher elevation, must not exceed a total of 45 minutes. This is because the water in the base evaporates as the process continues. Do not let the canner boil dry – this may result in an unsafe product. Never open the canner to add liquid during the process either. According to University of Wisconsin Extension, “A canner boiling too vigorously can boil dry within 20 minutes.”

Because of this time limitation on steam canning, certain foods that are acceptable to can in a boiling water canner are not to be canned in a steam canner. A good example of this is whole or halved tomatoes packed in water or without added liquid. They require 85 minutes in a boiling water canner at 1000 feet elevation or lower. This far exceeds the capability of the steam canner’s 45-minute limit. Likewise, hot-packed crushed tomatoes canned in quarts at elevations of 1001-3000 feet require 50 minutes of processing, more than is recommended in an atmospheric steam canner.

As with boiling water canning, cool jars in still, room-temperature air. This natural cooling is part of the process to insure a safe, shelf-stable canned product.

With these conditions met, recipes and procedures for boiling water canning can be safely used in a steam canner. Reliable resources for recipes include University of Missouri Extension publications or the National Center for Home Food Preservation (found at homefoodperservation.org).

For more information on atmospheric steam canning, go to http://fyi.uwex.edu/safepreserving/2015/06/24/safe-preserving-using-an-atmospheric-steam-canner/, contact me, Janet Hackert, at 660-425-6434 or HackertJ@missouri.edu or your local University of Missouri Extension office. University of Missouri Extension - your one-stop source for practical education on almost anything.
Think what you drink doesn’t matter? What you drink makes more difference than you think. Many people don’t realize how calories from beverages can add up. Choose beverages that contain vitamins and other nutrients like calcium and protein. Milk and 100 percent fruit juice are good examples. They have calories but important nutrients, too. An 8 ounce glass of 1% milk gives you 100 calories with vitamin D, A, C, calcium and protein. A 12 ounce can of soda gives you 150 calories with no vitamins, calcium or protein. Limit your intake of empty calorie beverages with lots of sugar or fat like regular soda, fruit drinks and coffee drinks.

Read labels carefully, size matters! Bigger is not always better because super-sized beverages can mean super-sized calories. Watch serving sizes—there may be several servings in a can or bottle. How much do you really drink? If you drink the entire container, you may be drinking several servings. For example a 12 ounce can of soda contains 9 to 11 teaspoons of sugar, which equals 150 calories. A 20 ounce bottle of soda contains 15 to 18 teaspoons of sugar, which equals 250 calories. When reading the label be sure to compare calories and nutrients too.

Whole milk and flavored syrups can add hidden fat and sugar calories to your coffee beverage. Ask that your drink be made with skim milk instead of whole milk to reduce the fat. Skip the extra sugar calories that flavored syrups add. Look for hidden calories in the form of sugar. Sweeteners often go by names other than sugar. Check the ingredient list for these common sweeteners. If any of these are the first or second ingredient, the drink has a lot in it:
- High-fructose corn syrup
- Fruit juice concentrate
- Honey
- Syrup
- Fructose
- Sucrose
- Dextrose
- Corn syrup
- Sugar

It’s easy to make better drink choices with plenty of ways you can reduce the amount of calories in what you drink.
- Stock your refrigerator with nutrient-rich beverages like low-fat milk or 100 percent fruit juice
- Carry a water bottle and refill it throughout the day
- Choose water, fat-free or low-fat milk and diet or low-calorie beverages instead of sugar-sweetened drinks
- 100 percent fruit juice still has calories, so don’t overdo it
- Try drinking vegetable juice for a snack
- Go for the smaller size if you choose a sugar-sweetened beverage
- Serve water with meals
- Add flavor to water by adding a slice of lemon or lime, or a splash of 100 percent fruit juice

Think about what you drink and be a role model for family and friends by choosing healthy, low-calorie beverages.

For more information contact Penny Crawford, NW Regional FNEP Project Director/Coordinator Connie Mowrer, NW Regional FNEP Program Manager 816-632-7009.
Eating Healthy Even at a Concession Stand
By Katie Buchs, Nutrition & Health Education Specialist

Have you ever been to a sporting event and found yourself wandering to the concession stand only to find sugary or fatty foods? Do you normally pack your own snacks or meals when you attend events with concession stands? Would you be more likely to eat at the park if there were healthier options? Then Eat Smart in Parks may be a program parks in your community can benefit from!

Eat Smart in Parks is a program designed by the Department of Natural Resources, the Missouri Council for Activity and Nutrition, the Missouri Department of Health and Senior Services and the Missouri Parks and Recreation Association, to help improve the amount of healthy food choices in state and local parks. The program is offered for free and can provide many different activities such as customer research, menu analysis, taste tests, marketing, healthy product identification and ideas to help implement new products. The main goal of the program is to promote heathier foods at the local and states parks however, a common outcome from this program is increased sales and improved marketing as well.

This program is free to any local or state parks that have concession stands. The length of the program is catered to the need of each individual park and can range from just incorporating the calorie content of the menu or as extensive and an entire make-over of the menu. If you are interested in more information or have a park in mind, please contact contact me, Katie Buchs, at (816) 279-1691 or buchsk@missouri.edu or your local University of Missouri Extension office. University of Missouri Extension - your one-stop source for practical education on almost anything.

Elderberries are in season—What to do with them
By Janet Hacket, Nutrition & Health Education Specialist

There are many types of wild fruits growing in the Midwest, but sometimes knowing what to do with them is the question. Elderberries, for example, are in season in Missouri from late July into September, but how can they be used? Elderberries can be eaten in a variety of ways. The purple-black berries can also be used to make a dye. According to University of Arkansas Extension publication Plant of the Week: Elderberry, “The flower clusters may be dipped in egg batter and fried as a fritter or mixed with pancake batter or muffins to give the cakes a sweet, pleasant flavor.” They also report that, “The bark is used in a number of herbal remedies.”

Note that red elderberries are poisonous and should not be eaten. According to a Michigan State University Extension publication called Elderberries: An edible landscape plant, “Elderberry shrubs contain cyanogenic glucosides, substances that release cyanide, found primarily in the leaves, stems and roots,” thus making these parts of the plant inedible as well.

Elderberries themselves are rich in Vitamin C as well as a source for antioxidants, including anthocyanin which give them their dark purple color. Ripe elderberries are sweet and juicy, though seedy, and are generally cooked for best flavor. To make juice, extract the liquid from the small, round berries and separate from the pulp and seeds. The juice can be preserved by canning or freezing. Or it can be used for making jelly. North Dakota State University Extension has a recipe for elderberry jelly that uses powdered pectin. The recipe can be found in their online publication called Jams and Jellies from Native (Wild) Fruits (FN1423). Utah State University Cooperative Extension has a publication simply called Elderberries (FN252) that gives directions for canning this treat of nature in a variety of ways, as well as freezing the berries and a recipe for elderberry-apple pie.

Whether starting with wild elderberry shrubs or cultivated varieties, University of Missouri Extension has information on growing them as well as using them in value-added agriculture. The information found at the Elderberry Development Project website for MU Extension in Green County also includes a link to video recordings of a two-part elderberry wine-making workshop.

For more information on these resources or any other topic, contact me, Janet Hackert, at 660-425-6434 or HackertJ@missouri.edu.
Every five years the U.S. Department of Agriculture and Health and Human Services review the research and revise the Dietary Guidelines for Americans. The 2015 – 2020 guidelines have a slightly different focus than in the past, looking more at the big picture of eating patterns rather than individual nutrients, and the importance of eating well wherever we are. The specific guidelines, in summary, are:

1. **Follow a healthy eating pattern across the lifespan.** All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease. Sample healthy eating patterns, such as a healthy Mediterranean-style eating pattern, can be found in the appendices of the Dietary Guidelines which can be found at http://health.gov/dietaryguidelines/2015/guidelines/. There are also charts showing estimated calorie needs per day by age, sex, and physical activity level.

2. **Focus on variety, nutrient density, and amount.** To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts. A list of foods that are rich in certain nutrients, such as Calcium, vitamin D and fiber, can be found in the appendices of the guidelines.

3. **Limit calories from added sugars and saturated fats and reduce sodium intake.** Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.

4. **Shift to healthier food and beverage choices.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.

5. **Support healthy eating patterns for all.** Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school to work to communities.

The recommendations, similar to past ones, now look at overall eating patterns rather than focusing on single nutrients and there has been a shift to consider the broader community in supporting healthy eating environments.

For more information on the 2015-2020 Dietary Guidelines for Americans, go to http://health.gov/dietaryguidelines/2015/guidelines/. Or for information on any other topic, contact me, Janet Hackert, at 660-425-6434 or HackertJ@missouri.edu or your local University of Missouri Extension office. University of Missouri Extension - your one-stop source for practical education on almost anything.

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**Watch for Ear Drop and lodging in area corn fields**

*By: Wayne Flanary, Regional Agronomy Specialist*

Last week while seeding cover crops in standing corn, we found several ears that had dropped. Also, as I was walking across corn rows, I knocked several ears off of plants. Northwest Missouri had wind damage that caused a lot of stalk breakage and lodging. This is another issue we need to watch for as we move into harvest.

Weather stress can increase ear drop. Looking at the plants where ear drop occurred, the shank was very weak. This summer we had a range of growing weather conditions. The season started dry, then turned to wet, then hot and so forth. Also, I have also noticed in many fields ears tipped-back so yields have been reduced by stress.

We encourage growers to scout fields to determine if they are having any lodging, ear drop or potential problems with fields. Some fields may need to be prioritized for early harvest.

For more information, contact Wayne Flanary at 660-446-3724 or Kurt Nagel at 816-776-6961, Extension Agronomists, University of Missouri Extension.
Estate Planning: not just for the wealthy
By: Trish Savage, Financial Education Specialist

Benjamin Franklin once wrote that there are two certainties in life - death and taxes. Estate planning can help deal with both. Almost all individuals and couples can enjoy the financial, emotional and psychological benefits from the process of estate planning. There is peace of mind knowing that you have created a plan to manage your final affairs and that your wishes are clarified in legal documents.

The purpose of Estate Planning is to make arrangements, using estate planning tools and documents, to transfer assets in a financially efficient way to chosen loved ones. It also includes creating documents that name who can act on your behalf if you are unable and give advance directives for health and end-of-life decisions. For example, one of the basic documents is a will. A will can identify beneficiaries, nominate an executor, name a guardian for minor children, direct how to transfer property after death, or define terms of a trust.

Components of an estate plan can be few, many, or complex depending on the estate owner’s goals and issues involved. Estate Planning is best and easiest to do when you are healthy, of sound mind and work with an experienced estate attorney.

Preliminary work can be started at home. Educating yourself and committing the time and energy will pay off not only with that peace of mind but an important side-effect that often occurs is reduced fear and anxiety about death and coming to terms with your own mortality. Estate Planning can save money, help avoid family problems, reveal mistakes that impact survivors and alleviate the pressure on loved ones from having to make decisions while they are grieving.

To learn more about estate planning or possible workshops available in your area on the subject, contact me at 660-886-6908 or savaget@missouri.edu. I serve the counties of Saline, Ray, Lafayette, Chariton, and Carroll.

Crop Pest update
By: Wayne Flanary, Regional Agronomy Specialist

Northern corn rootworm beetle has been found in Holt County corn fields following soybean rotation. We suspect that these are extended diapause rootworms that a portion of rootworms will hatch when planted to corn two years later. Root feeding was found. Growers in other counties should scout fields.

Also, Japanese beetle continues to move further away from large cities. Japanese beetle damage on soybeans will be leaf feeding; however, they will not feed on large leaf veins of the soybean leaves. We are seeing this pest expanding outward. Economic threshold is 20% defoliation of soybeans when soybeans are in the reproductive stage.

Kansas and Nebraska report Southern leaf rust so we should scout corn fields carefully and determine if the disease is present. Before applying any fungicide treatment, one should consider the different disease ratings of the hybrid. Also, as ear development is moving forward, the yield response to a fungicide will decrease as the plant matures.

For more information, contact Wayne Flanary at 660-446-3724 or Kurt Nagel at 816-776-6961, Extension Agronomists, University of Missouri Extension.
Use herbs more effectively
By: Janet Hackert, Regional Nutrition and Health Education Specialist

Using herbs is a great way to increase and enhance the flavors of foods and reduce the use of salt. Here are some tips for using herbs effectively.

Herbs get their rich flavors from volatiles in the plants. It is also what gives them their distinctive aromas. To maximize these flavors for cooked foods, do not add fresh herbs and spices during the hottest part of the process. Rather, if high heat is to be used, wait to add the seasonings until the dish is simmering or closer to the end of the process. If using dried herbs, add these to slow-cooked dishes like pastas, stews, soups, and casseroles. Incorporate them early on so they have time to rehydrate and infuse their flavor throughout the dish.

University of Missouri Extension publication [N362 Herbs and Spices](#) has two charts that help a cook who is new to the use of an herb or spice figure out how or when to use it. The one chart lists common herbs and spices then shows what dishes it is used in. For example, thyme can be used in dishes like soups, stews, sauces, and meat loaf, and with vegetables like onions, carrots, and beets. In the other chart, there is a list of vegetables and seasonings that are popular with each one. For example, Brussel sprouts can be seasoned with basil, caraway, or dill, and squash can be enhanced with allspice, basil, cinnamon, cloves, ginger, mustard, nutmeg, or rosemary, depending on the taste desired.

Storing herbs well can prolong their shelf life and keep them flavorful. Fresh herbs can be kept fresh for up to a week by snipping the ends of their stems, wrapping them in wet paper towels, placing in a plastic bag, and storing in the produce bin of the refrigerator. Keep them in sight, though, so they get used and not wasted. If there is more in the bunch than will be used while they can stay fresh, extra can be dried or frozen for later use. Larger quantities of many leafy herbs can be crushed and frozen in ice cube trays. Remove frozen herb cubes and place in a freezer container for conveniently-sized quantities—just thaw and use.

Dried herbs will last up to one year if stored in airtight containers, out of direct light and away from strong heat. Keeping them dry is also key to retaining their flavor.

CookingMatters.org has a handout, 10 Tips on Using Herbs and Spices, on their website. For more information on using herbs effectively, or any other topic, contact me, Janet Hackert, at 660-425-6434 or [HackertJ@missouri.edu](mailto:HackertJ@missouri.edu)

Growing Degree Tool Forecasts Corn Development
By: Wayne Flanary, Regional Agronomy Specialist

Spring corn planting across Northwest Missouri varied considerably with the ability of growers to plant into wet soils. So what is the impact of delayed planting and different planting dates across the region?

A tool called U2U Decision Support Tool for Corn GDD has been designed on the web so growers can compare current conditions to long term historical records so one can project trends through the end of the growing season.

You select the geographical area, planting date, maturity of corn and then project the current year’s development with that of historical weather information. Using this tool, one can run any number of scenarios to answer questions that are specific to the growers needs.

This tool was developed by nine Midwest universities and funded by USDA.

For more information, contact Wayne Flanary at 660-446-3724 or Kurt Nagel at 816-776-6961, Extension Agronomists, University of Missouri Extension.
**Bed Bugs—Reduce risk while thrift shopping**

By: Connie Neal, Housing & Environmental Design Specialist

Thrift shopping can be fun and help you save money. Don’t spoil your fun by taking home unwanted pests. Bed bugs are a significant pest! They hide in cracks and crevices, especially in box springs, mattresses, clothing and furniture. Bed bugs can build up large numbers before noticed and are very hard to eliminate from the home environment. According to Oklahoma State Cooperative Extension, because they are hitchhikers they can be brought into thrift stores on clothing, furniture and other used items from bed-bug infested homes. They are very good at hiding and sometimes very difficult to find. They can live a long time, at least a year without a blood meal. Picking up used furniture at thrift stores could mean a higher risk for bed bugs but there are steps to prevent them and still enjoy thrift shop items.

Prevention is free and easier than treatment. If bed bugs invade your home, treatment is very expensive. Bed bugs require professional treatment. Search for signs of bed bugs. Young bed bugs are light tan. They become darker in color as they get older. Adult bed bugs are about the size of an apple seed, reddish brown in color. The eggs are very small and white in color. Females can produce as many as 500 eggs. Bed bugs like to hide near their host. The mattress, box springs and headboard are common places for hiding. Any bug, alive or dead indicates a problem. Bed bugs defecate often as they process their blood meal leaving black or rusty spots which will appear in the seams of fabric, on top of the mattress, on sheets or other fabric covering furniture. These spots can also be found on wood. Bed bugs like to hide together and will produce a dirty looking area containing cast skins, eggs and fecal material. If you see a dirty spot on a piece of furniture, be sure to examine it closely for bed bugs.

Before purchasing household textiles and clothing, ask the thrift shop owner what precautions they take to ensure items are bed bug free. Heat treatment would be a good answer, especially for beds and other upholstered furniture.

Check garments for obvious signs of bed bugs. When taking them home, wash household textiles and clothing immediately and dry using normal setting on the dryer. Heat kills bed bugs and eggs. If an item cannot be washed, place it in the dryer for one cycle. Inspect sofas and upholstered chairs thoroughly. Vacuum and empty the vacuum cleaner bag into the outside trash. If you have a steamer, steam the couch by slowly running the steamer over the entire couch from top to bottom. After sanitizing, if possible, place in a garage or storage area for at least a few days. In summer, consider covering items with clear plastic and setting them in the sun.

It is important to teach family members how to reduce risk when thrift shopping. Remember, bed bugs can thrive in the cleanest house because there are still plenty of places to hide. Taking a holistic approach to bed bug control means reducing or eliminating clutter. Prevention is the best form of bed bug control.
MOST 529 IS A POWERFUL TOOL TO SAVE FOR COLLEGE TAX-FREE
By: Trish Savage, Financial Education Specialist

Designed to help and encourage families to save for future college expenses, Missouri’s MOST 529 college savings plan offers tax benefits. A 529 plan is another name for the Qualified Tuition Program created by Congress in 1996. The commonly used name refers to Section 529 of the Internal Revenue Code that describes the tax advantages.

Like all 529 plans, Missouri’s MOST account offers generous tax savings, such as deferred income tax on earnings (both federal or state), tax-free withdrawals for qualified higher education expenses, and, like many, it offers a state income tax deduction. For example, account owners that live in Missouri can deduct MOST 529 Plan contributions, up to a limit, when filing state income taxes (this year is $8,000, $16,000 if married filing jointly). There is also a federal gift tax incentive. Contributions of up to the annual gifting limit can be made per year without triggering federal gift tax; a lump sum contribution can be made per beneficiary and then treated as contributions made over a five-year period.

529 monies can be used at any eligible educational institution, including post-secondary trade and vocational schools, 2- and 4-year colleges and postgraduate programs. Qualified expenses include tuition, room and board (with limitations), books, supplies, fees, equipment, computers, internet access and computer software if used primarily by the beneficiary in the U.S. or abroad.

Anyone can start an account and anyone can be named as a beneficiary - a relative, a friend, even yourself. If a beneficiary doesn’t use the money, the account can be transferred to another eligible family member. An owner may make withdrawals, however, if a withdrawal is not for qualified educational expenses then taxes and penalties occur.

Opening an account is free, and contributions can be as little as $1. There are no income restrictions on the owner or the beneficiary. Family and friends can make contributions too.

For more information about 529 plans, go to www.missourimost.org or www.irs.gov/pub/irs-pdf/p970.pdf. You can also contact me at 660-886-6908 or email savaget@missouri.edu. I serve the counties of Saline, Ray, Lafayette, Chariton, and Carroll.

SOYBEAN INSECT PEST UPDATE
By: Wayne Flanary, Regional Agronomy Specialist

Green cloverworm has been increasing in soybean fields. These green worms feed on the underside of leaves and fall to the ground when soybean plants are shook. Worms leaf feed and economic threshold is 20% leaf defoliation and 10 to 15 more half grown larvae are present per foot of row.

Typically, a fungus attacks these worms and therefore we have natural control. Worms infected seem sick and will stop feeding. Death of the cloverworm occurs in one to two days. As you scout, be sure to examine insects carefully as they change to a whitish color when infected.

Other pests commonly found are also commonly found in soybean fields. Scouting should continue for bean leaf beetles and stink bugs. As far as economic thresholds for bean leaf beetle during pod fill, treat with an insecticide when 5% to 10% of pods are damaged, plants are still green and numerous beetles can be found in the field. Stink bugs should be treated when one or more stinkbugs are found per foot of row during pod fill.

For more information, contact Wayne Flanary at 660-446-3724 or Kurt Nagel at 816-776-6961, Extension Agronomists, University of Missouri Extension.
1 Winning Government Contracts: The First Steps Thursday, September, 2016, 1 p.m. to 4 p.m. 4747 Troost Bldg 4747 Troost Ave, Kansas City MO. This introductory 3-hour seminar is an overview of the critical first steps associated with winning government contracts. The Missouri Procurement Technical Assistance Center (MO PTAC) host a bi-monthly seminar on how to get started in the government contracting arena including federal, state and local government registrations and certifications. The seminar will also cover MO PTAC services available to assist Missouri businesses in all aspects of government contracting. Registration information call Michelle Cunningham at 816 235 2891 ext. 2. Cost is $50. Facilitator Michelle Cunningham, cunninghammic@umkc.edu University of Missouri-Kansas City SBTDC.

8 Estate Planning-Lexington Thursday, September 8, 2016, 1 p.m. to 3 p.m. Location, Lexington Public Library 1008 Main St., Lexington MO. To register for each program or for more information, call Judy at 660-584-3658 by September 6th (MU Extension Center of Lafayette County in Higginsville). Cost $20. Facilitator Trish Savage, savaget@missouri.edu MU Extension in Saline County Phone: 660/886-6908

20 Johnson County Management Intensive Grazing School - Warrensburg (Session 1 of 3) Tuesday, Sept. 20, 2016, 8:30 a.m. to 4:30 p.m. The Johnson County Grazing School will feature information on the following topics: soils and topology, livestock water, extending the grazing season, economics of grazing, pasture fertility, matching livestock with forage resources, and much more. Registration is required and can completed by calling the Johnson County Soil and Water Conservation District at 660-747-8400. Registration deadline is 9/19/16 Cost is $125. Nathanial Cahill, cahilln@missouri.edu MU Extension in Johnson County phone: 660/747-3193

26 Community Development Academy Course One: Building Community from the Grassroots (Session 1 of 5) Monday, September 26 2016, noon to 5p.m. The Elms Hotel and Spa 401 Regent St., Excelsior Springs MO. CDA Course One: Building Communities from the Grassroots is an intensive, experiential, five-day course offered by the University of Missouri Extension Community Development Program covering community development principles, polarization, group dynamics, team building, dealing with differences, assessment, inclusion, action planning processes, evaluation and monitoring, developing indicators, measuring impact, and developing local leadership. Cost $500 . Facilitator Johanna Reed Adams, Ph.D., AdamsJR@missouri.edu Community Development Program, MU Extension Phone: 573/882-3978

For additional Northwest Region events, please contact your local extension office or visit www.extension.missouri.edu
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The MU Extension employees, county office managers and county extension council members are guided by our vision and mission which was affirmed in our new strategic plan:

**Vision:** University of Missouri Extension is a valued and trusted educational solution to improve the quality of life in Missouri, the nation and the world.

**Mission:** Our distinct 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.