

K-State food scientist shares tips for outdoor meals during harvest

Combines will soon be rolling across Kansas for wheat harvest, with other crops not too far in the future.

Part of the tradition in farm country is feeding the people working to bring in the harvest. Kansas State University food scientist Karen Blakeslee says meals in the field follow many of the same guidelines for safe picnics and backyard barbecue meals.

- *Clean.* Blakeslee suggests packing wet wash clothes with soap to clean dirty hands. “Another option is a spare soap bottle with a mix of water and soap,” she said. “Keep in mind that hand sanitizer is not effective on dirty hands. Wash them first, then apply hand sanitizer for best results.”
- *Separate.* Keep raw meat and poultry away from ready-to-eat-foods. Use a clean utensil for each dish. Use a clean plate when going for second helpings of food.
- *Cook.* Use a food thermometer to check for doneness. Cook all poultry to an internal temperature of 165 degrees Fahrenheit. Cook burgers and sliders to an internal temperature of 160 F.
- *Chill.* Keep hot foods hot and cold foods cold. Put out food in batches.

In addition, Blakeslee said many foods can be prepared in advance and frozen for use later. Baked goods – bread, cookies, cupcakes and more – freeze well, she said. “After baking, cool these foods completely before packaging,” she said.

Frozen fruit cups are an easy freezer treat for hot days, said Blakeslee, who cites a *recipe from Iowa State extension*, <https://spendsmart.extension.iastate.edu/recipe/frozen-fruit-cups/>, that uses muffin tins to freeze fruit.

“Many casseroles, meat pies or pasta dishes can be frozen and baked from the freezer,” Blakeslee said. “Use aluminum foil containers or other containers made to go from the freezer to the oven with ease.” Blakeslee cited a *publication from Oregon State extension*, https://verso.uidaho.edu/view/pdfCoverPage?instCode=01ALLIANCE_UID&filePid=13325544480001851&download=true, that provides ideas for foods that can go from freezer to oven with ease.

“If there is access to electricity out in the field with some farm equipment, it can be used to plug in slow cookers or roasters to keep food hot,” Blakeslee said. “But be sure the voltage is compatible for the appliances being used.”

Food aside, Blakeslee encourages families to make time to eat together during a break in the harvest. “Set up a portable table and chairs to eat together, if possible,” she said. “That break from harvest activity is a great way to recharge and catch up with others before heading back out to the field.”

Healthy lawns offer strongest defense against weeds, says K-State horticulture expert

A healthy lawn may be the best defense homeowners have against invasive weeds, said Kansas State University horticulture expert Matt McKernan, adding that proper maintenance can prevent many common weed problems before they begin.

“Weeds invading a home lawn can feel like an ongoing battle,” McKernan said. “Instead of constantly applying chemical treatments, homeowners should focus on growing strong, vigorous turfgrass that naturally crowds out weeds.”

McKernan said healthy grass competes with weeds for sunlight, water and nutrients, making it harder for unwanted plants to take hold. He noted that many weed problems stem from common lawn care mistakes that weaken turfgrass and create opportunities for weeds to spread.

One of the most common problems is mowing grass too short. McKernan said scalping the lawn weakens turfgrass and allows more sunlight to reach weed seeds, encouraging germination. He recommends mowing at the proper height for the grass species, keeping mower blades sharp and avoiding mowing when grass is wet.

Watering practices also play a significant role in lawn health. Frequent, shallow watering encourages shallow root systems and can increase weed pressure, McKernan said. Instead, homeowners should water deeply and less often to promote stronger roots and improve drought tolerance. During spring, irrigation should only occur when necessary.

Other factors that may lead to an unhealthy lawn include:

- *Improper fertilizing.* Fertilizing too much or too little or at the wrong time may benefit weeds more than grass. Only fertilize during the recommended months, only apply what is needed, and conduct a soil test to better understand fertilizer needs.
- *Compacted soil.* Soil compaction is a hidden stress on the turfgrass root system. The grass is unable to compete effectively with weeds. Core aerate lawns at least once per year to reduce compaction.
- *Excessive wear.* Turf areas used for recreation, sports and pets are subject to wear and compaction. Core aerate to reduce compaction in these areas, and temporarily fence off areas when establishing new grass seed.
- *Wrong kind of grass.* The wrong variety for the location will gradually decline and be invaded by weeds. Always check the grass seed label before purchasing to evaluate the types of grass seeds included in the bag. Purchase only recommended types of turf, avoiding cheap fillers.
- *Environmental stress.* Weeds often take over a lawn after it has been weakened and thinned from weather-related stress. Water appropriately during times of drought and avoid overwatering in the spring and fall. Evaluate irrigation water quality and soil nutrient levels by testing.
- *Thatch.* Excessive thatch causes shallow-rooted grass, limits water infiltration and contributes to insect and disease problems. Regularly monitor thatch accumulation and remove excessive thatch when necessary.

McKernan said a proactive approach focused on lawn health is more effective and sustainable than relying solely on herbicides. “A dense, healthy lawn is the first line of defense against weeds,” he said.

Simple changes make the difference in cooling off cattle

Cattle incapable of relieving themselves of high temperatures experience heat stress. Humans alleviate overheating through sweating, but Kansas State University beef extension veterinarian A.J. Tarpoff said cattle do not have that option.

“Heat stress coping behaviors is what we see when cattle are adapting to warmer temperatures,” he said. “Whenever we get hot, we sweat to maintain homeostasis. For livestock species, and especially cattle, that capability gets overwhelmed.” Tarpoff added: “They dissipate heat in other ways like increasing their respiratory rate (breathing) by panting.”

Besides panting, producers identify heat stress by their increased standing, large groups of animals bunching up close to water tanks and crowding in shaded areas. “They're trying to get increased airflow by standing, but they actually end up using each other as shade which is counter-productive,” Tarpoff said.

High temperatures and humidity, slow wind speeds and increased solar radiation comprise the four weather conditions contributing to heat stress.

“When we're comfortable, cattle might not be and vice versa. We really need to consider those four key parameters,” Tarpoff said. “We have an animal comfort index that uses the four of them to get a feel on how cattle are experiencing their environment.”

Monitor the animal comfort index in Kansas through the *K-State Mesonet*, <https://mesonet.k-state.edu/agriculture/animal/>,

Correctly managing heat stress has proven to be essential for maximizing animal wellbeing and performance, according to Tarpoff. “It is one of those critical chores just as important as feeding or making sure the animals have water. Whether we are asking them to be good cows or an animal to produce beef in a feedlot, we need to put them in scenarios where they're more comfortable because then they are more productive,” he said.

Tarpoff urges operations housing their cattle in dry lots to keep it simple when developing a plan to lessen the consequences of heat stress.

“Whenever it comes to heat stress, it's back to the basics: feed and water. Water intake can nearly double as temperatures rise from 70 to 90 degrees (Fahrenheit). We need more water access, flow and availability for those animals,” he said.

He added: “We might be able to modify our feeding times to alleviate some of these stressors. Whenever we feed cattle, we feed the rumen microbes, and that comes at a cost called the heat of fermentation. We can feed later in the evening, so the digestion happens during the cooler nighttime hours.”

Tarpoff cited two recent studies that showed reduced water usage (as a metric for heat stress) during the summer months when shifting feeding times. 1. *Effects of alternative feed timing on growth performance and water usage of growing beef x dairy heifers fed a high roughage diet*, <https://newprairiepress.org/kaesrr/vol12/iss1/6>. 2. *Effects of alternative feed timing on growth performance and water usage in limit fed growing beef x dairy heifers*, <https://newprairiepress.org/kaesrr/vol12/iss1/7/>.

Producers often construct shades to cool off cattle in times of unrelenting heat. A recent study, <https://newprairiepress.org/kaesrr/vol9/iss1/3/>, conducted by K-State researchers looking at effects of shade on heat stress revealed that shade structures can impact more than just animal temperature.

“They are a piece of infrastructure,” Tarpoff said. “That two-year trial showed added benefits of investing in shades. We saw increased feed efficiency, increased growth rate and increased average daily gain. We also saw reduced panting rates and water consumption needs by over a gallon per head per day.”

Additionally, bedding pens with straw can reduce the pen floor temperature by 25 degrees and fence-line sprinklers help lower ground temperatures and keep cattle cool if used in the overnight hours, according to Tarpoff.

Colorful Landscapes: K-State expert suggests summer plants that are resistant to heat and drought

As Kansas heads into another summer marked by heat and dry conditions, homeowners can still maintain colorful landscapes by choosing annual flowers that thrive in challenging weather, according to a Kansas State University horticulture expert.

Matt McKernan said the state’s climate often presents difficult growing conditions for landscape plants.

“The Kansas climate throws numerous extremes at our landscape plants,” McKernan said. “Kansas summers are commonly filled with hot, dry conditions, and even periods of drought.” McKernan said selecting annual flowers adapted to those conditions can help gardeners enjoy vibrant summer color while conserving water and reducing maintenance demands.

“With these environmental extremes, it is important to select annual flowers that thrive in hot, dry conditions in order to bring vibrant color to the landscape while also conserving water,” he said.

McKernan shared 10 suggestions for drought-tolerant annual flowers to plant this summer: Mexican Heather (*Cuphea hyssopifolia*); Lantana (*Lantana camara*); Pentas (*Pentas lanceolata*); Angelonia (*Angelonia angustifolia*); Annual Vinca (*Catharanthus roseus*); Ornamental Sweet Potato Vine (*Ipomoea batatas*); Zinnia (*Zinnia angustifolia*); Gomphrena (*Gomphrena* spp.); Tall Verbena (*Verbena bonariensis*); Texas Primrose (*Calylophus hybrid*).

McKernan said many of these plants provide long-lasting blooms and continue performing well during stretches of intense summer heat. Others add texture and color through foliage, and most will attract pollinators such as butterflies and bees.

McKernan said gardeners can incorporate the annuals into flower beds, patio containers and mixed landscape plantings to add seasonal interest throughout the summer months.

“Be sure to keep in mind that all newly planted annual flowers will require supplemental water to get established,” McKernan said. “Once plants are well rooted, however, they will require less frequent irrigation.” He adds: “By incorporating drought-tolerant selections into garden beds, containers and landscapes, gardeners can maintain seasonal beauty while promoting efficient water use and reducing overall maintenance.”

VIDEO OF THE WEEK:

There are many ways to help support upright tomato plant growth during the growing season. From traditional caging to tying up plants, the various options help each gardener find the right option for their space. This week's *video discusses some of the reasons why tomatoes need support, and how keeping plants growing upright can maximize space and prevent disease*: <https://kansashealthyyards.org/all-videos/video/tomatoes-need-support>

GARDEN CALENDAR:

- Begin wrapping up harvest of leafy spring greens, such as lettuce, kale, Chinese cabbage, and bok choy.
- Watch tomatoes for foliar leaf disease development and treat as needed.
- Turn compost piles and keep them moist for a quicker breakdown of organic materials.
- Remove flower stalks from peonies and iris.
- Fertilize roses during their first flowering period with about 1 cup of low analysis fertilizer per plant.
- Establish new zoysia, bermudagrass, or buffalograss lawns by sod, plug, or sprigs. Fill in bare areas using the same technique.
- Water the established turfgrass sparingly to increase drought tolerance during the summer heat. Let turfgrass wilt slightly between waterings for best results.
- Mulch around the bases of trees and shrubs to conserve moisture and protect them from lawnmower and string trimmer damage. Do not pile mulch against the trunk of trees when mulching.
- Prune pines and spruces to shape and control size.
- Prune spring flowering shrubs now that flowering has completed.
- Take cuttings of houseplants to start new plants.

Fire Blight Damage In Trees & Shrubs:

Fire blight is a disease that can attack many trees and shrubs in the spring and early summer months. Most commonly experienced in fruit trees, this disease can cause a wide range of damage from killing blossoms and new growth to killing entire tree branches and plants.

Fire Blight affects over 130 plant species in the Rosaceae (Rose) family, and in Kansas is commonly found on apple, crabapple, pear, raspberry, blackberry, pyracantha, hawthorn, cotoneaster, quince, and serviceberry.

Fire Blight is a disease caused by the bacterium, *Erwinia amylovora*, which overwinters in cankers in the branch canopy and trunk of trees and shrubs. In the spring, bacteria ooze from these cankers as a sweet, sticky liquid. These droplets contain millions of bacteria, which are spread by water droplets from rain or irrigation, and by pollinators, such as honeybees or flies. Blooming flowers are the most common entry point for the bacterium, however, natural openings and wounds caused by hail, strong winds, or storm damage can also serve as infection sites for fire blight. Warm, wet, and humid weather in the spring and early summer, favor fire blight infections. Temperatures between 65°F and 86°F and humidity above 60% provide the optimal conditions for the bacteria to reproduce and spread.

Once infected, the bacterium may move long distances within the living tissue and kill large portions of the tree or shrub. Symptoms of fire blight are most noticeable on blossoms and succulent new growth. Infected blossoms become water-soaked and turn dark-green or brown. Young, infected shoots wilt rapidly, turning brown to black as if scorched by fire. The terminal end of the diseased shoot bends backwards, becoming hooked, and is commonly described as a shepherd's crook appearance.

When springtime weather conditions are conducive to fire blight infection, the disease can be difficult if not impossible to control. Several cultural practices, however, can help reduce or prevent the occurrence of fire blight. Start at planting by choosing tree varieties that are resistant to fire blight, and avoid planting susceptible cultivars of flowering crabapples, apples, or pears. Many plants will lack cultivars completely resistant to fire blight, however, some cultivars will be more resistant to fire blight disease than others. Avoid excess nitrogen fertilizations and heavy pruning of trees and shrubs, as fire blight is most severe on plants which have an abundance of succulent shoot growth. Reposition sprinklers to avoid plant contact and to reduce leaf wetting.

Over the late summer and winter months, remove all dead shoots, infected spurs, and cankers which harbor the fire blight bacterium. Pruning cuts should be made 6-10 inches below diseased tissue. Disinfect pruning tools between each cut using denatured alcohol or a 10% bleach solution. Never prune during wet weather, or in springtime when disease is spreading.

If fire blight has been a recurring problem, copper-based products or products with the active ingredients Streptomycin sulfate or *Bacillus subtilis* can be used preventatively to protect flowers from infection. These products must be applied in combination with the cultural practices recommended above and will have no effect on existing infections within the plant.

Visit our *Fire Blight on trees fact sheet* for more information on this disease and its control: <https://hnr.k-state.edu/extension/horticulture-resource-center/common-pest-problems/documents/Fireblight%20on%20Fruit%20Trees.pdf>

Japanese Beetle Activity Begins For 2026:

Japanese beetles are a widespread and destructive pest affecting landscapes, gardens, and turfgrass across Kansas. Both larvae (grubs) and adults (beetles) cause plant damage. Originally introduced into the United States in 1916, Japanese beetles have since spread throughout much of the country and now attack more than 300 plant species, including roses, canna, linden, crabapple, crape myrtle, and many fruit and ornamental plants. Japanese beetles have a one-year life cycle that includes egg, larval (grub), pupal, and adult stages.

Adult Japanese beetles are easy to recognize by their metallic green bodies and copper-colored wing covers. The most distinguishing feature for the adult beetles is the four to five tufts of white hair on each side of the abdomen, with two more tufts located at the rear end of the abdomen. These white tufts of hair are unique to Japanese beetles and distinguish adults from other beetle species.

Adult Japanese beetles are active from June through September, depending on environmental conditions and geographic location. When adult beetles emerge, they tend to

gather in large numbers, mating and feeding on plant leaves and flowers. Their feeding creates a characteristic “skeletonized” appearance, where only leaf veins remain. Severe feeding can cause leaves to brown and drop prematurely, reducing plant vigor. Adult Japanese beetles live for 30 to 45 days, feeding on plants over this four-to-six-week period.

After Japanese Beetles mate, adult females lay eggs in moist soil during the summer months. The larvae hatch within two weeks and begin feeding on turfgrass roots. Grubs feed on plant roots during the summer and into the fall, damaging roots during the heat of summer. During the winter months larvae migrate deeper into the soil. As soil temperatures increase the following spring, grubs move closer to the soil surface and resume feeding. In late spring, larvae pupate and emerge from the soil as adult beetles.

Effective management of Japanese Beetles involves a combination of strategies, including:

- Maintaining healthy plants through proper watering, fertilization, and pruning to help reduce damage.
- Hand-removal of adult beetles into a bucket of soapy water early in the season can help limit population buildup. Hand picking will be easiest in early morning or late evening when beetles are least active. When disturbed, adults fold their legs and fall to the ground. Using a wide-mouthed jar or bucket placed below the beetle will help to capture adult beetles.
- Limit watering of turfgrass areas while Japanese beetle adults lay eggs. This will discourage females from laying eggs in the lawn and decrease survival of young grubs.
- Remove smartweed (*Polygonum* spp.) and other weeds in the area that are an attractive food source for adult Japanese beetles.
- Traps are generally not recommended, as they may attract more beetles than they capture.

Insecticides can be used when populations are high, but thorough coverage of plant surfaces is essential for control. Numerous insecticides can be used including pyrethroid products such as cyfluthrin, bifenthrin, and cyhalothrin, however, each pose risks to natural enemies (parasitoids and predators) and beneficial insects (such as bees). For grubs, soil-applied insecticides are most effective when applied while larvae are small and near the soil surface.

Visit the *Japanese Beetle: Insect Pest of Horticultural Plants and Turfgrass* publication to learn more: https://bookstore.ksre.ksu.edu/download/japanese-beetle-insect-pest-of-horticultural-plants-and-turfgrass_MF3488

Monitor & Control Thatch in Warm-Season Lawns:

Thatch is a light brown, fibrous accumulation of organic matter, made up of compressed surface roots, stems, and runners. It is located between the soil and grass blades and looks like peat moss. While thatch is something that most people never look for, it can be beneficial or detrimental in the success of our lawn, depending on the amount that is present.

In most healthy lawns, one-half inch of thatch helps to conserve water, cushion the turf from compaction, and insulate the soil surface from extreme temperatures. When more than half an inch of thatch forms, problems can occur. Excessive thatch buildup repels water

and prevents it from penetrating to grass roots. Surface roots that try to grow into thatch dry out quickly and require frequent watering to prevent wilting. Fertilizers applied to the turf are caught and held by excess thatch layers, rather than reaching the soil. Excessive thatch causes the turf to be less cold, heat, and drought resistant, increasing the likelihood of winter injury. Excess thatch also provides a favorable environment for diseases and insects. For all these reasons and more, thatch levels should be monitored closely in our lawns, especially in zoysia, bermuda, and buffalograss lawns.

To determine the amount of thatch in a lawn, use a shovel or knife to cut a small wedge of turfgrass down 3-6 inches into the soil. The thatch will be the spongy layer above the soil surface and below the leaf blades. If the thatch accumulations are greater than one-half inch, additional action should be taken to either core aerate the lawn and/or verticut the lawn using a power-rake. These tools can often be rented locally, or a professional lawn service can be hired to complete the job.

For warm-season grasses, June or July is the best time to power-rake or core-aerate when the lawn is actively growing and can recover from thinning more efficiently. If the thatch levels are between $\frac{1}{2}$ to $\frac{3}{4}$ inch thick, core aerating can be used. Repeat passes with the aerator until the holes are about 2-inches apart. If thatch is thicker than $\frac{3}{4}$ -inches, it will need to be power-raked. Set the blades of the rake only deep enough to remove the thatch so the lawn is not severely damaged.

To prevent excess thatch buildup, it requires a combination of correct cultural practices to manage thatch effectively. This includes proper watering, fertilization, mowing heights, and soil aeration. Thatch control is not achieved with any one single practice.

Keep in mind that returning grass clippings to the lawn (or mulching mower clippings) does not contribute to thatch accumulation. This is a common misconception and is not true. Grass clippings are composed of 90% water and decompose rapidly, which does not contribute to thatch.

Visit our *Thatch – A Hidden Lawn Concern* publication for more information on thatch buildup and options for its control: https://bookstore.ksre.ksu.edu/pubs/thatch-a-hidden-lawn-concern_MF2131.pdf

Vertical Frost Cracks In Trees:

Frost cracks are longitudinal splits in the bark and wood of trees, most frequently occurring vertically up the trunk. These cracks vary in length and may only be a few feet long or in some cases extend the entire length of the tree trunk, from the roots up into the canopy. The vertical openings of frost cracks can extend deep into the wood of the tree. These openings are not generally fatal to a tree. They can, however, provide opportunities for disease organisms and canker pathogens to enter the tree.

Young and thin barked trees are often more susceptible to developing frost cracks. Apple, ash, aspen, crabapple, cherry, cottonwood, dogwood, elm, golden rain tree, honey locust, linden, maple, oak, peach, and willow all can commonly be found impacted by frost cracking.

Frost cracks are most frequently associated with pre-existing wounds and flaws within the tree, such as old branch stubs or basal sprout stubs. During the winter months, the inner

and outer wood in the trunk is exposed to various temperature extremes, and the temperatures create different contraction rates within the tree. This thermal contraction results in tension and splitting that leads to frost cracking along points of weakness in the wood, such as previous wounds and flaws.

Most trees will usually heal over, and close frost crack injury during the growing season. Avoid painting or sealing the frost crack with paints, shellacs, or tars, as these may slow the healing process. Watering during dry weather and installing a mulch ring around the tree may help speed healing. Fertilization in the early spring or in the fall after leaves begin to color may also boost tree health.

In future years, work to prevent frost cracks by ensuring trees are well watered going into winter. Wrap the tree trunks or otherwise protect trunks from direct or reflected sunlight during the winter months. This may help prevent frost cracks but will also prevent other winter injuries such as sunscald. Remember to remove the wraps each spring.

Visit our *Frost Cracks fact sheet* for more information about this problem:

<https://hnr.k-state.edu/extension/horticulture-resource-center/common-pest-problems/documents/Frost%20Cracks%20on%20Trees.pdf> Matthew McKernan, Consumer Horticulture Extension Associate

K-State food scientist urges consumers to read food labels carefully

Understanding food labels is becoming increasingly important for consumers navigating grocery store aisles, according to Kansas State University food scientist Karen Blakeslee, who says clear labeling can help families make safer and healthier food choices.

Blakeslee said consumers should pay close attention to ingredient statements, allergen warnings and nutrition facts panels when purchasing packaged foods. Those labels provide critical information for people managing food allergies or dietary concerns and help shoppers better understand what is in the products they buy.

“Food labels are designed to give consumers the information they need to make informed decisions,” Blakeslee said. “For families dealing with allergies, even small details on a label can make a significant difference.”

Federal regulations require manufacturers to identify major food allergens, including milk, eggs, fish, shellfish, tree nuts, peanuts, wheat and soybeans. Sesame also was recently added to the list of major allergens that must be disclosed on food packaging.

Blakeslee said consumers should carefully review labels every time they purchase a product because ingredients can change without notice. Even familiar products may contain new ingredients or be produced in facilities that handle allergens.

She added that ingredient lists are organized in descending order by weight, meaning the ingredient present in the greatest amount appears first. Understanding that format can help shoppers evaluate the nutritional quality of products and identify added sugars, sodium or other ingredients they may want to limit.

Another important aspect of food labeling is the grouping of spices and flavorings within ingredient statements. Blakeslee said federal labeling rules sometimes allow manufacturers to use broad terms such as “spices” or “natural flavors,” which can simplify labels but may leave consumers with questions about specific ingredients.

“Consumers who have sensitivities or allergies should contact manufacturers directly if they need more detailed information about ingredients,” she said.

Blakeslee noted that food labeling requirements can vary depending on the size of the business producing the product. Some small businesses may qualify for exemptions from certain labeling requirements, particularly if they produce limited quantities of food products.

Even so, she encouraged smaller food producers to include complete labels whenever possible to improve transparency and consumer confidence. “Providing clear labeling helps build trust with customers,” Blakeslee said. “Consumers appreciate knowing exactly what they are purchasing and serving to their families.

Nutrition facts labels also can help consumers compare products and make healthier choices, she said. Information about calories, serving sizes, fat, sodium and added sugars allows shoppers to evaluate how foods fit into their diets.

Blakeslee encourages consumers to take time to read labels carefully rather than relying solely on marketing claims placed on the front of packages. Terms such as “natural,” “low fat” or “multigrain” may not always reflect the overall nutritional value of a product.

“Reading the full label gives consumers a more complete picture of the food they are buying,” she said.

Much of the information shared by Blakeslee is based on the revised publication, *What’s on a Food Label*, https://bookstore.ksre.ksu.edu/item/whats-on-a-food-label_L883.

The publication provides detailed guidance on interpreting food labels, understanding allergen disclosures and using nutrition information to make informed purchasing decisions.

As consumers continue seeking healthier and safer food options, Blakeslee said education about food labeling remains an important tool for improving public health and food safety awareness.