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Filling the Summer Forage Gap

Warm season annual forages such as pearl millet and sorghum-sudangrass are suitable options to fill a void in summer forage production or when renovating forage stands. When moisture and soil nutrients are readily available, sorghum-sudangrass and pearl millet can produce up to six tons of forage per acre during the growing season. Other crops such as foxtail millet, Japanese millet, or improved crabgrass can also be used but are not as productive.

Plant sorghum-sudangrass in mid-May to late June, when soil temperatures reach 60 degrees. Drill sorghum-sudangrass at the rate of 20 to 25 pounds per acre or broadcast it at a rate of 30 to 35 pounds per acre. For successful establishment, plant at a depth of ½ to 1 inch into a firm tilled seedbed or control weeds with a burndown herbicide when using no-till. Drill pearl millet at a depth of ¾ to 1 inch deep at a rate of 15 pounds per acre or broadcast at a rate of 20 to 30 pounds per acre in mid-May through mid-June. Sorghum-sudangrass prefers a soil pH above 5.5. Pearl millet is more tolerant of acidic soils than sorghum-sudangrass.

Soil temperature can be found on the Missouri Mesonet - weather station network at <https://tinyurl.com/MUweather>

The key to maintaining high quality summer annual forage throughout the growing season is to keep the plants from becoming too mature. The first harvest can occur 45 to 60 days after planting. Harvest or graze sorghum-sudangrass and pearl millet when the plants reach 24 to 36 inches in height, leaving a 10-inch stubble to promote regrowth. If the plants are allowed to grow beyond 36 inches in height, forage quality drops dramatically. To maximize production, apply 60 pounds of nitrogen fertilizer at establishment and 40 to 60 pounds after each harvest.

Use caution when harvesting or grazing summer annual forages during periods of prolonged drought since nitrates can accumulate in the lower stems resulting in nitrate poisoning. To minimize the risk of nitrate poisoning when conditions are dry and forage growth is slow, additional applications of nitrogen fertilizer should be delayed until adequate moisture is available for rapid plant growth.

Prussic acid poisoning is also a concern with sorghum-sudangrass following plant injury from frost or stress from drought. Do not graze sorghum species before they reach 24 inches in height and do not graze plants for 14 days after they have been stressed or damaged by drought, frost or hail.

It can be difficult to get the coarse stems of sorghums and millets to the 18 percent dry matter necessary to prevent spoilage of dry hay. Making baleage by wrapping bales with plastic at a high moisture content is an alternative. Forage is mowed and allowed to wilt to 45 to 60 percent moisture. This may take 6 to 24 hours depending upon the crop, the yield, the swath density and weather conditions. After it is baled,

it should be wrapped in plastic within four hours if possible. The bales will undergo the ensiling process which may take up to six weeks.

Keys to making high quality baleage:

- Make tight dense bales to eliminate as much oxygen as possible
- Make wet bales smaller than dry hay bales for ease of handling
- Use plastic twine or net wrap rather than treated sisal twine which can break down the plastic
- Wrap with six layers of 1-mil white plastic
- Store bales in a well-drained area, near the area where they will be fed
- Repair tears in the plastic with silage tape to avoid spoilage

More information can be found in MU Guides Warm Season Annual Forage Crops <https://extension.missouri.edu/publications/g466> and Growing Millets for Grain, Forage and Cover Crop <https://extension.missouri.edu/publications/g4164>

Source: *Valerie Tate, agronomy specialist*



Billions of Cicadas Bring Magic to Missouri in 2024

Billions of cicadas will buzz this spring as two broods of cicadas emerge at the same time. These two broods last emerged together in 1803 and will not emerge together again until the year 2245. Periodical cicadas have the longest known life cycle of any insect. Broods are groups of cicadas that share the same emergence years. Broods receive a number listed as a Roman numeral. Brood XIII only emerges every 17 years while Brood XIX emerges every 13 years. The last time these two broods emerged together was when Thomas Jefferson was president, decades before Missouri statehood.

Emergence will occur in 18 states in the midwestern part of the United States. For the most part, most Missourians will only experience Brood XIX, the Great Southern Brood. It last appeared in Missouri in 2011. Expect them to emerge in late April to early May. Those who live in northeast Missouri near the Illinois border might see the dual emergence of both broods. That is where the two broods could collide for a memorable occurrence.

Cicada nymphs stay in the soil for 13 or 17 years

depending on their brood. They emerge when the soil warms to 64 degrees and dig their way out of the ground. They subscribe to the “safety in numbers” approach and emerge all at once. They climb trees, fence posts, or anything vertical before shedding their hard skins, and then head to treetops, mate, lay their eggs and die within a 4 to 6-week period. Expect to see cicadas after a spring rain and expect to see a lot of them – as many as 1.5 million per acre. This creates a feeding frenzy for predators and litter so heavy that the sidewalks and highways may need shoveling.

Brood XIX, a 13-year brood has four species. Other states that will see Brood XIX include Alabama, Arkansas, Georgia, Indiana, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Virginia. These will emerge late April through the second week of May. Brood XII, the Northern Illinois Brood, is a 17-year cicada with three species. It will appear in Iowa, Illinois, Indiana, Wisconsin and possibly Michigan in 2024. Some stragglers may make their way into southern Illinois and the St. Louis area. Expect emergence mid-May through June.

The loud sound you hear is from male cicadas only, says Reall, as they send out their mating call. With five eyes each, two large and 3 tiny, they truly are on the lookout for a mate. They have only four to six weeks from the time they emerge from the soil to ensure the next generation of offspring. Once they mate, the males soon die. After the female lays her eggs in the tree’s branches, her work is done too, and she also dies. Her nymphs fall to the ground, burrow into the soil and begin the process all over again.

Their melodious tune can be as loud as a lawnmower and is unique to its species. The synchronized male singing can be louder than a jet engine. Cicadas are drawn to the vibrating sounds of power tools and lawn mowers. Cicadas, while loud and messy, are harmless to humans and their pets, says Reall. They don’t sting or bite. Reall warns against using pesticides that will harm birds and beneficial insects such as butterflies, bees and moths. If there is concern about new trees or bushes, protect them with a loose cover of cheesecloth.

Reall urges Missourians to help map the cicada emergence using the Cicada Safari app, created by entomologist Gene Kritsky - <https://cicadasafari.org/>

Sites to learn more:

<https://www.fs.usda.gov/foresthealth/docs/CicadaBroodInteractiveMap.pdf>

<https://cicadas.uconn.edu/broods/>

Source: *Dr. Tamra Reall, horticulture specialist*

Choosing Deer-Resistant Plants for Landscapes

Many gardeners, homeowners, golf course superintendents and public park managers express frustration toward deer and the damage they cause from rubbing their antlers on trees and shrubs and browsing on plants in the landscape. Unfortunately, there are not many simple solutions to preventing deer damage without eliminating deer completely. Deer management in landscapes will require an integrated pest management (IPM) approach. This includes monitoring deer pressure and the population, fencing or excluding deer from valuable landscape plants, using repellents and planting deer-resistant plants.

Deer are selective feeders. Understanding their feeding habits may be helpful when planning your landscape. Deer feeding habits are affected by experience and previous movement patterns, geographic area, weather conditions, nutritional needs, seasonal plant availability and plant palatability. Available food sources change with the seasons, thus changing the level of damage and the types of plants damaged. A plant not bothered by deer in the summer, may become a food source during a long, cold winter. Snow cover for an extended period of time may cause deer to browse on plants they normally would not feed on.

As deer have become a major problem in many gardens, gardeners have begun learning what plants deer prefer and ones they do not like. Deer preference for landscape plants will vary with several factors, but there are some plants that are more resistant to deer. Plants labeled as "deer resistant" often have common characteristics such as rough, hairy, spiny, or have a presence of aromatic compounds in the stems or leaves. For example, lavender and boxwood are considered aromatic plants, whereas some viburnums and oakleaf hydrangea possess leaf textures thought to be distasteful to deer.

Deer seek plants rich in protein, especially in spring and summer, and as they recover from winter. They get about one third of their water from moisture in plants, which is the reason they prefer moist and tender plant parts and often feed on new growth, usually on the outer parts of plants, such as new leaves and buds, or immature stems. Certain plant smells attract deer, and other times may just want to sample the newest additions to the landscape. Deer seem to know which plants are poisonous, and which ones to avoid. Deer avoid plants they may have tried and did not like, or which made them sick. They usually avoid plants with a strong aroma like marigolds, fuzzy leaves like lamb's ear, prickly leaves or stems like hollies or barberries, or those with a bitter or alkaloid taste such as yarrow. Deer rely on their sense of smell as an early warning system of approaching danger. Mask this, using aromatic plants, and deer tend to stay clear. Some fragrant plants that

generally deter deer include catmint, chives, lavender, mint, sage, and thyme. Gardeners will often interplant these among more desirable deer plants to keep them away. Below are some plants which deer do not seem to like:

Scientific name	Common Name	Hardiness Zone
<i>Picea pungens</i>	Colorado Blue Spruce	3-7
<i>Asimina triloba</i>	PawPaw	5-8
<i>Berberis</i> spp.	Barberry	4-8
<i>Buddleia davidii</i>	Butterfly bush	5-9
<i>Buxus</i> spp.	Boxwood	5-9
<i>Vina minor</i>	Periwinkle	4-8
<i>Achillea</i> spp.	Yarrow	3-8
<i>Dicentra spectabilis</i>	Bleeding Heart	3-9
<i>Antirrhinum majus</i>	Snapdragon	annual
<i>Hesperis matronalis</i>	Dame's Rocket	3-8
<i>Hyacinthus orientalis</i>	Hyacinth	3-7
<i>Lobularia maritima</i>	Sweet Alyssum	annual
<i>Lavandula</i> spp.	Lavendar	5-9
<i>Digitalis</i> spp.	Foxglove	3-8
<i>Juniperus horizontalis</i>	Creeping juniper	4-9
<i>Nandina domestica</i>	Nandina	6-9
<i>Sambucus Canadensis</i>	American Elderberry	4-9
<i>Convillaria majalis</i>	Lily-of-the-Valley	2-7
<i>Bergenia</i> spp.	Berginia	3-8
<i>Dryopteris marginalis</i>	Wood Fern	3-8
<i>Narcissus</i> spp.	Daffodil	4-8
<i>Nicotiana</i> spp.	Flowering Tobacco	annual
<i>Papaver orientale</i>	Oriental Poppy	3-7
<i>Pelargonium graveolens</i>	Scented Geranium	annual
<i>Pervoskia atriplicifolia</i>	Russian Sage	5-9
<i>Pulmonaria</i> sp.	Lungwort	3-8
<i>Rheum rhabarbarum</i>	Rhubarb	4-7
<i>Scilla</i> spp.	Scilla	2-7
<i>Tagetes</i> spp.	Marigold	annual
<i>Stachys byzantine</i>	Lamb's Ear	4-8
<i>Tanacetum vulgare</i>	Common Tansy	3-9
<i>Thymus</i> spp.	Thyme	3-8
<i>Aquilegia</i> spp.	Columbine	3-9
<i>Anethum graveolens</i>	Common Dill	annual

Source: *Jennifer Schutter, horticulture specialist*

New Fence Building Resource

The saying of good fences makes for good neighbors, can be very expensive with the cost of fencing materials. University of Missouri Extension has released a new guidesheet and spreadsheet tool to help determine construction budgets for fencing.

The tool was built for a variety of fences including woven wire, barbed wire and high-tensile. The costs of building a fence vary by type of fence mainly due to types of material needed. In addition, the shape of the pastures or paddocks affects the quantity of materials needed and

labor required for construction of the fence.

The publication, *Pasture Fence Construction Budget* focuses on the common types of fences in Missouri and based on the costs (January 2024) of building a quarter-mile (1,320 feet) perimeter fence with different types of permanent fencing plus temporary interior fencing. These are: woven wire, 5 wire-barbed wire, and 6-wire high-tensile. In addition, the guidesheet contains information on building electric interior fence and corral fencing.

The budgets include materials to build the fence, tools and labor. There is also an adjustment factor for certain types of terrain. The printed publication has a line-by-line listing of materials. Since no two farms are the same, each person will need to customize the budgets. One way to customize is to use pencil and paper. The other way to customize is by downloading a free Excel file and make the adjustments. Customizing the budgets will provide a more accurate estimate.

The publication also includes an electric interior divider budget, based on using two-strand electrified fence with

fiberglass posts. This budget is based on a quarter-mile (1,320 feet) as well.

The final budget in the publication is for corral fencing. The budget is based on 500 feet of fencing consisting of 2 7/8-inch diameter drilled stem posts and one-inch sucker rod laterals with 2 3/8-inch drill stem top rail.

The budgets have limitations. For example, labor rates vary based on experience and location. Also, keep in mind there is not an exact definition of good fence, so the budgets may not align perfectly with expectations.

Fencing is a long-term investment for many livestock operations. The fencing budget guidesheet and spreadsheet are tools and resources to help farmers make informed decisions.

The print publication can be found at <https://extension.missouri.edu/publications/g1193>. The downloadable spreadsheet can be found at <https://tinyurl.com/MUfence24>

Source: *Mary Sobba, ag business specialist*