

2022 Ag Times



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MARCH 9, 2022
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MARIES COUNTY **Advocate**

Hay! Belle made a difference

Fifth anniversary of Starbuck Wildfire



BY ROXIE MURPHY
ADVOCATE STAFF WRITER
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Sunday marked the fifth anniversary of a string of wildfires that burned down homes, fenced fields, trapped livestock, and destroyed 450,000 acres in the state of Kansas. It also marks the anniversary of an agricultural community coming together to make a difference.

The need was in Kansas, the cause was the Starbuck Wildfire that started March 6, 2017, and Jimmy Zumwalt was the man that started the movement.

“It made me a better person and restored my faith in humanity,” said Zumwalt when he was asked about leading the March 24, 2017, convoy to Kansas that included 23 semis, dually and gas trucks loaded down with supplies and draped with American flags. “Whether they was involved or not, it boosted people up and still to this day people come

and thank me for doing it.”

It wasn’t a government-paid movement, but an old-fashioned call to help and support where they saw a need. Individuals called in credits to their MFA accounts and dropped off donations at Double L Country Store. Wendy Zumwalt took \$13,000 in orders for t-shirts that said “Hay! We Made Difference!”

See **Wildfire**, Page 3B



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Wildfire • from page 2B

Farmers took their own supplies, using their own equipment on their own trucks with their own money on a 510-mile trip. They spent a week-and-a-half asking for donations of supplies, funds and transportation. More than 125 individuals and businesses responded.

The group, later dubbed The 419 for the number of hay bales they were hauling, drove to Kinsey, Kas., before they split, one group went north and the other went south.

The northern group drove 20 miles to a private farm where the farmer's haybarn had made it through the fires. Former Missouri state representative Tom Hurst was in that group.

"A good shot of rain and their grass will grow," said Hurst then, who owns his own spread in Meta.

He explained that the 419 round bales could feed about 1,000 head of cattle for 21 days. By then, the rain should have done the rest.

Rick and Sue Evans live 50 miles southeast of Dodge City, Kas., and lost about 1,500 acres of their spread.

"The timing of the fire, March — two

See **Wildfire**, Page 4B



VOLUNTEERS AND community members (top) gather in a circle to say a prayer on March 24, 2017, as the 23 truck convoy (left) prepares to leave on a 510 mile trip to Kansas. The Starbuck wildfire in Kansas (right) destroyed an estimated 450,000 acres of farmland, pasture, fences and homes. **PHOTOS BY JACOB WARDEN**



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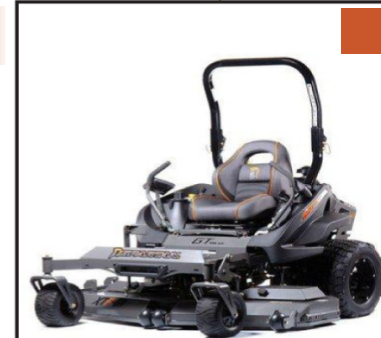


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Wildfire • from page 3B

weeks after we had an inch of rain and the weather turned warm and the grass started growing halfway decent," he said, bringing testament to Hurst's prediction.

Jacob Warden, with the *Maries County Advocate*, was also along to document the community's ride to Kansas.

"I remember thinking the Tuesday before 'how do we cover that from home? You can't sit at home and cover that.' I went to bed that night and the thought was I would just take my camera and go with them. I came in the next morning and was taking out papers and said 'hey, Dad, I think I will just go with them on this convoy trip.'"

Publisher Dennis Warden agreed that the trip would be better covered on the road.

"I called Jimmy and asked if any shotgun seats were available because I wanted to go," Warden said.

Zumwalt had found a driver with an open seat and on March 24, Warden left with the convoy.

When they reached Kinsey, Kas., Warden went with the southern group to Ashland, Kas. They learned for themselves that the news headlines "Ashland in ashes" meant exactly that.

"I rode in a farm truck from Vienna and it was one of the rougher rides," Warden remembers. "The rally point was at a big farm where they had saved a bunch of cows and the neighbors' cows were there."

In March 2017, The *Maries County Advocate* was five-months-old. Facebook had only recently released Facebook Live, and using social media as a way to update folks at home from the road was a battery-draining event that Warden tackled with success.

"Facebook Live wasn't as prevalent then," Warden said. "You could do it, people just didn't."

He interviewed people in the convoy, people from Kansas, people volunteering.

"The audio was bad because the wind was blowing so hard," he said.

Trucks pulled up with supplies, but equipment to unload was scarce. One tractor on-site was limping along in an attempt to unload.

"I thought 'how could one tractor unload

all of this hay?'" Warden said. "But we brought a guy with a Bobcat that was able to unload and help. There were so many carcasses of tractors that had been burnt up trying to do different things during the fire that this was the only one left, and it didn't run well."

They dropped supplies to individuals and left another drop where it could be distributed to area farmers. The Evanses were among those who received supplies.

"I don't even know how it started," he said. "We had Daisy and Sheridan from Wyoming pulled in with a convoy of hay and Jimmy from Missouri and someone from Colorado. Texas. A lot from out of state. It was crazy how it all came together. It had to just be media, Facebook, or whatever. We didn't have a clue it was going to happen then all of a sudden they said 'people are coming' and we are going 'what?' Then they pulled in our yard and said 'what can we do?'"

After the first group went home, some packed up more supplies and went back. Zumwalt made arrangements for a second and third trip.

Now they receive yearly Christmas cards

from their Kansas friends.

Aside from those friendships, Zumwalt says the best feeling is that those people have paid it forward.

"The next year there were fires in other parts of the country and folks that we helped turned around and stepped in our shoes," Zumwalt said. "They said if it ever happened somewhere else they would go and they did. For every action is a reaction and that was their reaction."

They did too. The Evanses said they took supplies to those affected by fire and two years ago for those affected by the Missouri floods.

The Zumwalts received a message from their Kansas friend Sue Evans on March 4, brought on by a Facebook flashback.

"Good morning and hi to you and Jimmy," the Messenger post began. "It's hard to imagine that it has been five years since the fire and God sent you to our country."

Rick Evans said things are just starting to go back to normal.

"Yesterday was the anniversary and we are dry now as we were back then," Rick Evans said. "The physical scars — it killed so many Cottonwood trees. It still is pretty

fresh in people's minds. Especially on a day like today and you see a long ways and see smoke your mind goes back. The emotional thing is still there and even while the physical is getting better and still pretty raw for a lot of people."

Rick Evans said there are reminders everywhere. The wildlife, the cattle, the emotional scars.

"Most people have their fences back up and rebuilt bigger and better," Rick Evans said. "We still have fence posts in the fence line with kids' names on them. Some extras in the shed. They are smudged, but they are there."

Ultimately, the Evanses say thank you. "Thank you to all our Missouri people," they said.

It is hard to imagine so much came from a community as small as Belle. So much hope from a tiny community. So much documented from a brand new newspaper about hearts with a willingness to give.

"We didn't do it for the reward but because it needed to be done," Zumwalt said. "When our community jumped on board, we made life-long friendships and still visit our Kansas people and stay in touch."

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JIMMY ZUMWALT (right) and his sons Bare (at the gate) and Cav (on the tractor) drive their John Deere tractor with round bales to the pasture on their property. **PHOTO BY ROXIE MURPHY**

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Pasture and cattle management strategies for a successful summer grazing season

BY PATRICK DAVIS
University Extension

Proper management of cool season pastures and incorporation of summer annuals is key to a successful summer cattle grazing season. Efficient year-round cattle grazing is important for optimum cattle operation profitability.

Strive to keep cool season pastures vegetative. During the grazing season, cool season grass heights should range between 4 to 8 inches. During the summer months, cool season forages will sometimes exceed this range or seed heads will start to develop. Forage in this growth stage is low quality and will not provide optimum cattle grazing intake and performance. Davis urges cattle producers to clip or mow pastures that are too tall or if seed heads are emerging to reset the pastures which allows for high quality cool season forage regrowth.

Seed summer annuals now to strengthen the summer grazing rotation. Crabgrass, pearl millet, and sudangrass are summer annuals that can be seeded now and grazed in the summer months to fill in the cool season grass slump. Cattle producers are urged to

checkout MU Extension Guide Sheet G4661 as well as visit with your local MU Extension agronomy field specialist to discuss proper seeding and establishment of these summer annuals.

Begin grazing crabgrass at 8 to 10 inches and don't graze lower than 3 inches. Crabgrass can typically be grazed approximately 30 to 45 days after planting.

Begin grazing sudangrass at a height of greater than 24 inches to prevent prussic acid poisoning in cattle. Since pearl millet does not cause prussic acid poisoning in cattle, begin grazing it at a height range between 18 to 30 inches. Do not graze either of these forages below 10 inches. Both of these forages can typically be grazed 45 to 60 days after planting.

Nitrate toxicity can be an issue with sudangrass and pearl millet during summer drought. Contact your local MU Extension livestock specialist for cattle and forage management strategies to reduce potential nitrate toxicity issues.

For more info or questions on how to manage your forage program for a successful summer cattle grazing season contact your local MU Extension Agronomy and Livestock Field Specialists.



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Plan now for antibiotic changes on the horizon

BY LINDA GEIST
University Extension

COLUMBIA, Mo. – While 2023 might seem a long way off, it's not too early for livestock producers think about how recent Food and Drug Administration guidance might affect their operations, says University of Missouri Extension veterinarian Craig Payne.

On June 11, the FDA's Center for Veterinary Medicine published Guidance for Industry No. 263 (GFI #263) in the Federal Register. The document outlines a strategy and timeline for bringing all medically important antibiotics that are currently available over the counter under veterinary oversight. This will affect several antibiotics familiar to livestock producers.

If you have a valid veterinarian-client-patient relationship (VCPR), the impact will be minimal because a veterinarian will be able to issue a prescription for these antibiotics, says Payne. If you don't have a VCPR, now is the time to find a veterinarian willing to work with you to ensure future access to antibiotics.

Under a VCPR, a veterinarian must have sufficient knowledge of your operation to make medical judgments, he says. It also means you agree to follow the veterinarian's instructions.

In 2017, many antibiotics used in the feed or drinking water of livestock moved from over-the-counter status to requiring a Veterinary Feed Directive or prescription. However, a small percentage remained available OTC in other forms, such as injectables, intramammary tubes and boluses, Payne says.

GFI #263 specifically addresses this small percentage. The FDA expects the labels of these remaining OTC antibiotics to display the following language by June 11, 2023: "Caution: federal law restricts this

drug to use by or on the order of a licensed veterinarian."

"This will end over-the-counter sales of antibiotics, and livestock owners will need a prescription from a veterinarian in the future if they want access to antibiotics," Payne says.

He emphasizes that antibiotics won't necessarily have to be purchased through a veterinarian, but a prescription will be required.

GFI #263 is available at www.fda.gov/media/130610/download.

Examples of affected products:

Cephapirin, cephapirin benzathine

- Intramammary tubes: ToDAY and ToMORROW

Gentamicin

- Injectables: Garasol, Gentamicin Piglet Injection

Lincomycin

- Injectables: Lincomix 100, Lincomix 300, LincoMed 100, LincoMed 300

Oxytetracycline

- Injectables: Liquamycin LA-200, Noromycin 300 LA, Bio-Mycin 200, Agrimycin 200, etc.
- Boluses: Terramycin Scours Tablets, OXY 500 Calf Boluses

Penicillin G procaine, penicillin G benzathine

- Injectables: Penicillin Injectable, Dura-Pen, Pro-Pen-G, Combi-Pen 48, etc.
- Intramammary tubes: Masti-Clear, Go-dry, Albadry Plus

Sulfadimethoxine, sulfamethazine

- Injectables: Di-Methox 40 percent, SulfMed 40 percent
- Boluses: Albon, Sustain III Cattle & Calf Boluses, Supra Sulfa III Cattle & Calf Boluses

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- Injectables: Tylan 50, Tylan 200

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With high fertilizer prices, are you better off buying fertilizer or supplemental hay?

PHOTO BY DAVE MARNER

BY LINDA GEIST
University Extension

COLUMBIA — Increases in fertilizer prices add to the cost of growing forage for grazing. This leads farmers to ask if they should buy hay or fertilizer, says University of Missouri Extension nutrient management specialist John Lory.

Comparing the benefits of buying hay vs. applying fertilizer for better yields is complicated, but it is crucial to the bottom line, says Lory.

A fair comparison looks at the costs of hay vs. fertilizer, whether the farmer can use the grown forage or purchased hay, and the nutrient efficiency of the grown forage vs. purchased feed.

Studies at the MU Forage Systems Research Center in Linneus and MU Southwest Research Center in Mount Vernon give some insight, he says.

MU researchers found that 50 pounds per acre of nitrogen boosted spring pasture yield an average of 1,100 pounds

See **High prices**, Page 9B

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High prices • from page 8B

per acre. With nitrogen fertilizer prices near \$1 per pound, the cost of that feed is 5 cents per pound.

What is the cost based on utilization rate?

Lory explains that cattle only eat part of the forage available to them, leaving the rest to waste. High prices make it critical to manage pastures for high forage utilization rates.

Research shows that cattle eat about 60 percent of available forage in highly efficient spring grazing systems, but rates typically dip below 50 percent. That means that cows waste about half of the fertilized forage. At 50 percent use, the actual cost of consumed forage doubles, says Lory. If nitrogen fertilizer is \$1 per pound, cost of consumed feed is 10 cents per pound. Many farmers can buy hay for less than that now.

Forage use for purchased feed usually runs higher than that for grazing, says Lory. Hay utilization rates can reach 80 percent but most often are closer to 65 percent. If hay is \$80 per ton, the cost per pound is 4 cents. However, at 65 percent utilization, the cost per pound of feed eaten goes to 6 cents.

“These examples show how purchased feed has the potential to be an economically competitive approach compared to buying fertilizer when prices are high,” says Lory.

Hay: Feed and fertilizer

The fertilizer value of hay can offset cost.

“When you bring hay or other supplemental feed onto

your farm, you are buying feed and fertilizer at the same time,” says Lory. “A ton of fescue hay contains nearly 100 pounds of fertilizer nutrients. If spread strategically on your farm, these nutrients provide fertilizer value to offset the cost of the hay.”

Beef cows typically excrete most of the nutrients they eat. To get the most value from hay, move the hay and cows to pastures that need fertilizer. Unroll hay bales, move hay rings or use some type of bale-graze system to spread across pastures. All of the excreted phosphate, potassium, sulfur and micronutrients in the hay is available to the pasture as fertilizer, but only about 25 percent of the nitrogen is available. The rest is lost or tied up in the soil organic matter. So, a ton of hay with 12.5 percent protein provides about 10 pounds of nitrogen fertilizer, 12 pounds of phosphate and 35 pounds of potash.

The fertilizer value of hay is usually a little over a penny per pound, or slightly more than \$20 per ton. Recently, nitrogen prices rose to nearly \$1 per pound, and phosphate and potash prices more than doubled. This increases the fertilizer value of hay to more than 2.5 cents per pound.

In pastures, nutrients brought onto the farms as feed or fertilizer recycle and improve yields. When winter feeding hay, the hay’s fertilizer will increase spring pasture growth. When properly managed, about 5 tons of feed on a pasture with a total nitrogen fertilizer value of 50 pounds can provide an additional 1,000 pounds or more of quality spring forage growth.

Fertilizer value also can influence hay purchase decisions, says Lory. Buying high-quality hay increases the fertilizer value of the hay. With current costs, a ton of hay may have \$20 more fertilizer value than poor-quality hay, making the higher-quality hay the more economical feed, even if it costs more up front.

Hay: Predictable feed at a known price with fertilizer value

“Buying hay instead of fertilizer can provide a predictable feed supply to supplement spring pasture growth at a known price,” says Lory. “High utilization can be assured through judicious feeding practices, and unneeded hay can be stored if not used. With high prices, the fertilizer value of the hay has more than doubled, currently around 2 ½ cents per pound of forage or \$50 per ton, offsetting a significant fraction of cost of hay. The fertilizer value of the hay also will boost spring forage growth.”

No matter how you meet your herd forage needs, he adds, high prices require you to maximize forage utilization, both when feeding hay and managing pastures.

For more information, see the MU Extension publication “Calculating Fertilizer Value of Supplemental Feed for Cattle on Pasture.” The four-page guide is available for free download at extension.missouri.edu/g2083.



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Weed electrocution research sparks interest as herbicide resistance impedes current methods

BY LINDA GEIST
University Extension

COLUMBIA — Move over, herbicides. There's a new sheriff in town. And he's toting some powerful guns loaded with electricity to kill weeds.

This shocking new method of weed control was demonstrated at the 2021 Pest Management Field Day at the University of Missouri Bradford Research Center in Columbia.

As more weeds develop resistance to herbicides, electrocution may be the weed management approach of the future, says MU Extension weed scientist Kevin Bradley. MU graduate student Haylee Schreier has studied weed electrocution in row crops for the past two years under Bradley's direction.

The is of special interest to Bradley because it might be the answer to Missouri's growing waterhemp problem. A prolific

See **Electrocution**, Page 11B



PHOTO BY LINDA GEIST

WEED ELECTROCUTION research shows promising results for weed management, especially in waterhemp, Missouri's No. 1 weed problem. The Weed Zapper attaches to a tractor and kills in-row weeds with high-voltage electricity.

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Electrocution • from page 10B

producer of seeds, waterhemp is Missouri's No. 1 weed problem and one of 14 weeds that are herbicide-resistant.

Two brothers in Illinois with backgrounds in farming and engineering designed The Weed Zapper machine. A different pair of brothers purchased the technology and manufacture Weed Zappers at a plant in Sedalia, Missouri.

The Weed Zapper model used in MU research has a copper boom that attaches to the front of a tractor. Driven by a PTO, it hits weeds with 15,000 volts of electricity from a 110,000-watt generator on the back of the tractor. Models cost between \$42,000 and \$72,000.

Metal wheels are grounded, and booms adjust to different heights. Tractor speed is about 2-4 miles per hour, Bradley says. Weed kill is best at lower speeds and is even more effective on some of the more challenging weeds when used at seven-day intervals in late summer.

Schreier's data shows that by the end of the season there is almost complete control of giant ragweed, common ragweed, marehail and waterhemp. It is slightly less effective on grasses.

The growth stage of soybean and the degree of contact that the boom makes with the foliage influences soybean injury. Soybean yield loss is possible if the boom makes constant contact with the soybean canopy at growth stages R3 or later.

In addition to killing weeds, electrocution also affects viability of surviving weed seeds. The most impact is seen in waterhemp, where about 65 percent of seeds become nonviable.

Electrocution is not new to the weed management world, says Bradley. Sugar beet growers in North and South Dakota have been trying this method since the 1950s and 1960s.

The United Soybean Board, Missouri Soybean Merchandising Council and the Weed Zapper company are partners in this project.

Learn more about MU weed science research at weedsience.missouri.edu, on Facebook or @ShowMeWeedson Twitter.

Learn more about Weed Zappers at www.TheWeedZapper.com.

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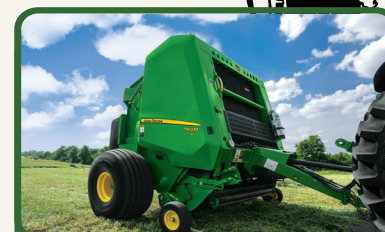
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Cereal rye as a cover crop can reduce waterhemp

BY LINDA GEIST
University Extension

COLUMBIA — Cereal rye as a cover crop may reduce waterhemp populations without yield loss in soybean, according to a three-year study at the University of Missouri.

MU Extension weed specialist Mandy Bish and a team of researchers studied how planting soybean into living cereal rye—“planting green”—and then terminating the cereal rye affected biomass accumulation, soybean stand and yield, and early-season waterhemp emergence. The Missouri Soybean Merchandising Council funded the experiment.

High seeding rates do not increase biomass

The team seeded cereal rye at 30, 50, 70, 90 and 110 pounds per acre in late October and early November. At soybean planting, cereal rye ranged 40-43 inches. Bish found that higher seeding rates of cereal rye did not increase biomass. Regardless of seeding rates, biomass generated was about 14,500 pounds per acre.

Biomass does not affect yield or stand

Bish says accumulated biomass did not affect soybean stand compared to soybean planted into no cover. However, soybean planted into cereal rye grew taller than soybean planted into no-cover plots. Soybean yield was about the same, regardless of seeding rate.

Waterhemp reduced in 2 of 3 years

Biomass from cereal rye cover crop reduced waterhemp emergence for four weeks in 2018 experiments and six weeks in 2020 compared to plots without a cover crop. But this was not true in 2019, when waterhemp pressure at the study site was extremely high.

Bish says residual herbicides were not applied in this study, but the group continues to research integration of cereal rye cover crop with residual herbicides. In a USDA-funded study, MU’s results show that early-season weed emergence was suppressed by about 97 percent when cereal rye was terminated before stem elongation was complete (about two weeks before soybean planting) and a residual herbicide was applied at soybean planting.

“We are currently evaluating combinations of soybean planting dates, cereal rye termination timings and residual

herbicide applications in a collaborative project funded by the United Soybean Board,” Bish says.

No silver bullets in weed control

“Cereal rye, nor any cover crop, should be viewed as a silver bullet for weed control,” Bish says. Understanding the soil seed bank is extremely important when making decisions about integrating cover crops and chemicals for weed control, she adds.

“In studies where waterhemp seed in the soil seed bank was extremely high (corresponding to roughly 500 or more plants per square meter), we have not seen cereal rye consistently suppress waterhemp from emerging,” Bish says. “However, when waterhemp densities are around 100 to 200 plants per square meter, we can see the effects of cereal rye on waterhemp suppression.”

For more information

• “To terminate or not to terminate? What we’ve learned about cereal rye, planting green, and seeding rates,” MU

See **Cereal Rye**, Page 13B

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DURING A RECENT FIELD DAY, MU Extension weed specialist Mandy Bish explains how using cereal rye as a cover crop may reduce waterhemp without yield loss in soybean.

PHOTO BY LINDA GEIST

Cereal Rye • from page 12B

Integrated Pest & Crop Management newsletter, March 2021: ipm.missouri.edu/IPCM/2021/3/cerealRye-MB.

• In “Cover Crops for Weed Management,” part of the War Against Weeds podcast series (waragainstweeds.libsyn.com), Bish discusses cover crops and weed management with MU Extension state weed specialist Kevin Bradley.



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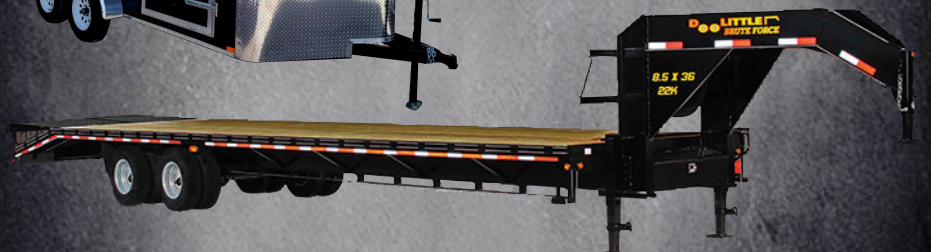
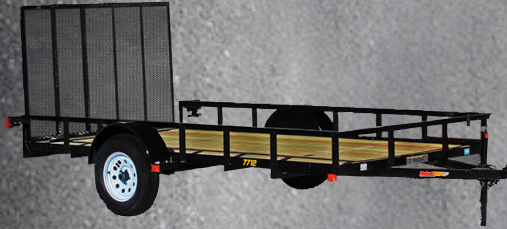


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Drainage water recycling systems improve corn yields

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BY LINDA GEIST
University Extension

A recent report through the Transforming Drainage project shows that drainage water recycling systems can improve corn yields and the environment, says University of Missouri Extension agronomist Kelly Nelson.

Nearly two-thirds of the site-years evaluated in the study saw an increase in yield compared to free drainage, with an overall average yield increase of 19 bushels per acre. The study looked at data from seven sites in the Midwest. These included silt loam fields in Shelby and Knox counties in Missouri, which are part of MU's Lee Greenley Jr. Memorial Research Center, as well as two sites in Minnesota and three sites in Ohio.

Researchers found that drainage recycling systems reduced yield variability by 28 percent over 53 site-years of work. This increases the resilience of the crop system and improves food security, Nelson says.

A combination of drainage and subirrigation also protects the environment by keeping nutrients such as nitrogen and phosphorus from entering downstream waterways, he says. That nutrient-rich water is recycled through irrigation.

Closed-loop drainage control systems capture and store surface and subsurface drainage water in a reservoir and then reuse that water as supplemental irrigation. Water level control structures—boxes with slides or gates that are buried in the ground—are spaced through water management zones based on the field's slope. Flow is adjusted to retain or drain water based on precipitation and the growth stage of the crop.

Researchers also found that corn yields gain most in the second half of vegetative development (9-leaf and greater) to early grain filling (blister stage). They found no yield difference between free drainage and drainage water recycling before the V9 stage or after R2.

Yields increased most in dry years when corn was most vulnerable to water stress and lower yields. Drainage water recycling likely improves corn yield in years when precipitation is below the critical threshold of 5 inches during the V9-R2 period and during extreme temperatures.

Soil characteristics play a major role in yield benefits of drainage water recycling, Nelson says. Deep soils with high water-holding capacity are less likely to be affected by short, dry periods during critical crop growth stages and may benefit less from irrigation. Soils that hold less water include shallow soils and sandy or clayey soils.

Because soil plays such an important role, Nelson recommends the Subirrigation Site Suitability Tool at transformingdrainage.org/tools/subirrigation-suitability-tool to help with initial planning.

The report was written by collaborators from MU, Minnesota Department of Agriculture, Purdue University, University of

Wisconsin-Green Bay, USDA Agricultural Research Service (ARS) and the agricultural biotechnology company Benson Hill. Nelson, Lori Abendroth of the USDA-ARS in Columbia and doctoral student Rebecca Willison worked on the research for the publication.

The report, "Corn Yield Response to Drainage Water Recycling Using Subirrigation," is available for download at bit.ly/3sPU8MH.

Learn more about the Transforming Drainage project at www.transformingdrainage.org.



During a recent field day at MU Greenley Research Center, extension agronomist Kelly Nelson presents results from a new report showing that drainage water recycling systems can improve corn yields and protect the environment.

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Things to consider when selecting crop insurance

BY BEN BROWN
MU Extension

Farmers must finalize their crop insurance decisions for spring planted crops in Missouri by March 15. In 2021, over 9 million row crop planted acres in Missouri were covered by crop insurance policies overseen by the USDA Risk Management Agency. Most farmers purchase revenue protection insurance policies, followed by yield protection policies. Opportunities to increase risk protection within these crop insurance policies are presented below.

Prevent Plant Coverage

Crop insurance's prevented planting provisions provide protection to producers and landowners if they are prevented by extreme weather from planting the insured crop by the insurance policy final planting date or during the late planting period. Prevented planting payments are intended to cover costs accrued prior to planting.

Prevented planting coverage is part of revenue protection and yield protection plans but not of area-based plans. Coverage

is calculated as a percent of the policy's insurance guarantee. Coverage factors for corn are 55 percent and 60 percent for soybeans, wheat, and grain sorghum. Example: a farmer buys a 75 percent revenue protection policy on corn acres with \$800 of expected revenue. Should the farmer be prevented from planting the crop, a prevented planting payment of \$330 ($\$800 \times .75 \times .55 = \330) would be paid. For an additional premium cost, prevented planting coverage can be increased to 60 percent for corn and 65 percent for soybeans, wheat, and grain sorghum.

When considering the 5 percent prevented planting buy-up coverage, estimate pre-planting costs like land rent, fall fertilizer application, and herbicide burndown. If the default prevented planting coverage does not cover pre-planting costs, a risk adverse farmer might be enticed to purchase the 5 percent buy-up option.

High Coverage Policies

The 2014 Farm Bill introduced Supplemental Coverage Option (SCO). At its core, SCO adds additional area-based coverage above the underlying policy up to 86 per-

cent, with certain restrictions. Example: an underlying Revenue Protection (RP) policy of 70 percent could buy a 16 percent band (86 percent – 70 percent) of SCO revenue protection. The policy holder would have individual revenue protection below 70 percent, area revenue coverage between 70 – 86 percent and no revenue protection between 86 percent and 100 percent.

Congress added an additional high

coverage option in the 2018 Farm Bill titled Enhanced Coverage Option (ECO) allowing farmers and landowners to add a layer of area level insurance either between 86 percent – 95 percent or 90 percent – 95 percent. Producers using ECO are allowed to enroll in ARC.

See **Insurance**, Page 17B



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Insurance • from page 16B

Some key points to consider about SCO and ECO are:

High coverage policies provide more protection for an operation by triggering at more shallow losses but come at a higher premium cost.

Government subsidies for SCO premiums are 65 percent; 51 percent for ECO yield policies; and 44 percent for ECO revenue policies.

SCO and ECO are both area-based coverage policies. It is possible for both to trigger payments for losses, only one, or neither.

SCO and ECO cannot be elected if the underlying crop insurance policy is margin protection, area based, or stacked income protection plan.

ECO can be purchased with or without SCO.

SCO and ECO do not qualify for prevented plant coverage.

Conclusion

All crop insurance premiums are set by the USDA Risk Management Agency – not the insurance company selling the policies. This means that the difference between crop insurance providers is the help they can give you at signup and throughout production until the crop is harvested and any indemnities are paid. Ask your crop insurance agent to help you analyze the risk management impacts of the +5 percent prevent plant provision, and the SCO and ECO high coverage policies.

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Legumes improve pastures, grazing, profits

BY PATRICK DAVIS
University Extension

Add legumes to grazing pastures to improve cattle performance and forage production, says University of Missouri Extension Regional Livestock Field Specialist Patrick Davis.

Frost-seed clovers and lespedeza now. They grow well with cool season grasses in Missouri and improve spring and summer pastures.

“Proper establishment is important to incorporation and persistence of these legumes,” says Davis. He urges producers to work with their local MU Extension agronomist when seeding legumes. MU Extension guide sheet G4652 extension.missouri.edu/p/g4652also offers guidelines.

Clovers and lespedeza can be seeded by drill or broadcast, says Davis. He prefers drilling because it improves seed-to-soil contact for better establishment.

“If you broadcast seed, use cattle hoof action as well as the freezing and thawing process to work the seed into the soil,” says Davis.

“Legumes improve year-round cattle



grazing opportunities when added to cool season grass pastures,” says Davis. Clovers enhance grazing in the spring while lespedeza improves grazing during late spring and summer.

Proper grazing management of legumes improves persistence and cattle performance, says Davis. He recommends rotational grazing to prevent overgrazing.

The proper grazing height and rest period help to maintain white clover in cool season pastures, says Davis. Graze pastures to

4-inch stubble height and then rest pastures three to four weeks to maintain mixtures of white clover, fescue, and orchardgrass.

“The best time to graze red clover is when about half the plants are blooming,” says Davis. “At this point, the forage will yield a feeding value similar to alfalfa.”

Cattle bloat is a concern when grazing high-protein, highly digestible legumes. Incorporate white clover in a mixed grass stand or slowly adapt cattle to very thick stands of clover to reduce bloat. Another

way to reduce cattle bloat is to provide supplemental proxalene or bloat blocks to cattle, says Davis.

Lespedeza is a non-bloating legume that improves grazing in summer months, says Davis. Lespedeza is a drought-tolerant, warm season legume that provides summer grazing in cool season mixed pastures.

Do not overfertilize pastures with lespedeza, says Davis. Most fertilizer applications containing more than 30 pounds of nitrogen per acre will reduce stands of lespedeza. Lespedeza is an annual but will come back each year if it reseeds.

Clovers and lespedeza also help to reduce fescue toxicosis in cattle by diluting fescue pastures, says Davis. Adding legumes results in better quality forages, improved cattle production and higher profits.

To learn more about fescue toxicosis in cattle, see “Tall Fescue Toxicosis” at <https://extension.missouri.edu/publications/g4669>.

For more information, contact your local MU Extension agronomy or livestock field specialist. Find more resources on improving grasslands at <https://extension.missouri.edu/programs/nrcs-mu-grasslands-project>.

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MU Extension agronomist offers tips to offset high nitrogen prices

BY LINDA GEIST
University Extension

GALENA — If there was ever a time to do a soil test, this is it, says University of Missouri Extension agronomist Tim Schnakenberg.

Rising fertilizer prices make it too expensive to guess on how to apply nutrients, says Schnakenberg.

Soil tests can prevent buying and applying fertilizer where not needed. See the MU Extension publication “Soil Sampling Hayfields and Row Crops” at extension.missouri.edu/g9217.

Schnakenberg offers several other tips to offset high prices:

- When prices are high, producers might want to prioritize lime over fertilizer if the soil’s pH is low. Lime application improves nutrient availability in the soil, which leads to more fertility from resources already waiting to be tapped
- Using manure from dairy or poultry operations might be a good way to add needed nutrients. Consider demand, trucking costs and the source of the litter.
- Reduce nitrogen loss by injecting manure and com-

mercial sources into the ground instead of spreading on top of the ground.

- Use nitrogen stabilizers with commercial sources unless applied in cooler weather.
- Split applications sometimes can be a more efficient way to reduce losses. Check with your local extension agronomist for the most precise method of nitrogen applications on specific crops and forages.

Don’t overlook ways to more efficiently distribute manure already generated on the farm, Schnakenberg says. If you feed grass hay solely in a bunk at the same location each time, move hay feeding areas around to distribute the manure to other parts of the farm. MU research has also confirmed that a well-planned rotational grazing system greatly helps manure distribution in pastures.

Legumes such as clover and alfalfa are also good long-term sources of nutrients. They fix nitrogen for grass hay crops. Incorporate these legumes into pastures to potentially eliminate the need for nitrogen. Legumes take time to reach their full potential, especially if broadcast over the winter or sowed in the spring.

If prices continue to rise, Schnakenberg recommends

applying phosphate and potash in the fall or early winter. There is little to no loss, and there may even be benefits from early application because there is time to work nutrients into the upper soil profile where roots can fully access them when needed next year.

This recent price hike is a reminder to continuously monitor nutrient levels and maintain fertility as part of a management plan, says Schnakenberg. “It becomes economically unfeasible to fix problems that have developed over the last decade, leaving us suffering production losses that aren’t easily remedied.”

In any case, don’t get into the mindset of only applying nitrogen, he says. Many fields continue to show stress resulting from missed or reduced applications of phosphate and potash after the 2008 fertilizer price hike.

The plant structure of roots, stems and leaves must be built by nutrients like phosphorus and potassium before nitrogen can spur growth, Schnakenberg says. If large amounts are needed and you have to cut corners somewhere, consider at least addressing crop nutrient removal issues and forging build-up recommendations. Consult an agronomist for advice on this kind of management strategy.

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New MU guide looks at silage breakeven price

BY LINDA GEIST
MU Extension

COLUMBIA — University of Missouri Extension recently released an updated cost analyzer to help farmers estimate the breakeven price to justify harvesting corn as silage rather than grain.

“Frequently, corn harvested for silage was planted for harvest as a grain crop,” says Joe Horner, an MU Extension agricultural business and policy specialist. Reasons for this change can include feed needs as well as drought and other events that result in poor grain yield.

Homer and MU Extension economist Ray Massey created the guide to help producers take the guesswork out of the decision to harvest corn as a grain or silage. Silage is the harvest of whole corn plants at 60–70 percent whole plant moisture.

The guide gives options for pricing silage

in the field, delivered to storage and delivered to the feed bunk.

Nutrient considerations

Silage and other forage crops remove more nutrients—especially phosphorus and potassium — from the soil than grain crops. If the soil becomes low on nutrients, the producer incurs extra expense to replace them.

Planting corn for silage to deliberately remove nutrients also is an option in intensive manure-spreading areas and where the potential for nutrient runoff exists.

General rules of thumb

Generally, the rule of thumb farmers use is that silage’s value per ton is 8–10 times the price of a bushel of corn. Massey says a factor of 8–9 is used to price silage in the field and a factor of 9–10 for pricing it in storage.

A higher factor is generally used for

See **Silage**, Page 22B

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Missouri freezing temperature trends

PATRICK GUINAN
University Extension

Missouri air temperatures are trending warmer over the last couple of decades, which is extending the growing season. Figures 1 and 2 show the statewide averages for spring and autumn minimum air temperatures, respectively, over the last 127 years. The trend line indicates a warming of 1.4°F per century. Autumn air temperatures have trended 0.8°F higher.

Dates of last or earliest frost have also shifted. It seems good to focus in on those shifts as we approach the 2022 planting season. Here are 3 findings on Missouri freezing temperatures that stem from comparisons of 20-year averages to 127-year averages:

The last spring freeze is occurring earlier. Figure 3 shows that the average last spring freeze is occurring 3 to 6 days earlier than historical trends.

The first autumn freeze is occurring later. Figure 4 shows that the average earliest

autumn freeze is occurring almost one week later than historical trends.

The average increase in growing season days across Missouri ranged from 7 days (Barton County site) to 20 days (Lewis County site).

These are anticipated trends in a warming world, but Missouri weather is still variable and seemingly random freeze events can and will occur late in spring or earlier in the fall.

The 11 weather stations used in this analysis have a long, reliable track record. They are part of a network called the National Weather Service Cooperative Observer Program, which was established in 1890 when President Benjamin Harrison signed the Organic Act. A major premise of the program was to define the United States climate.

For more information on frost and freeze dates in Missouri, please check out the MU Frost Freeze Guide, which receives a lot of interest this time of year. The web site includes contour maps that show variations

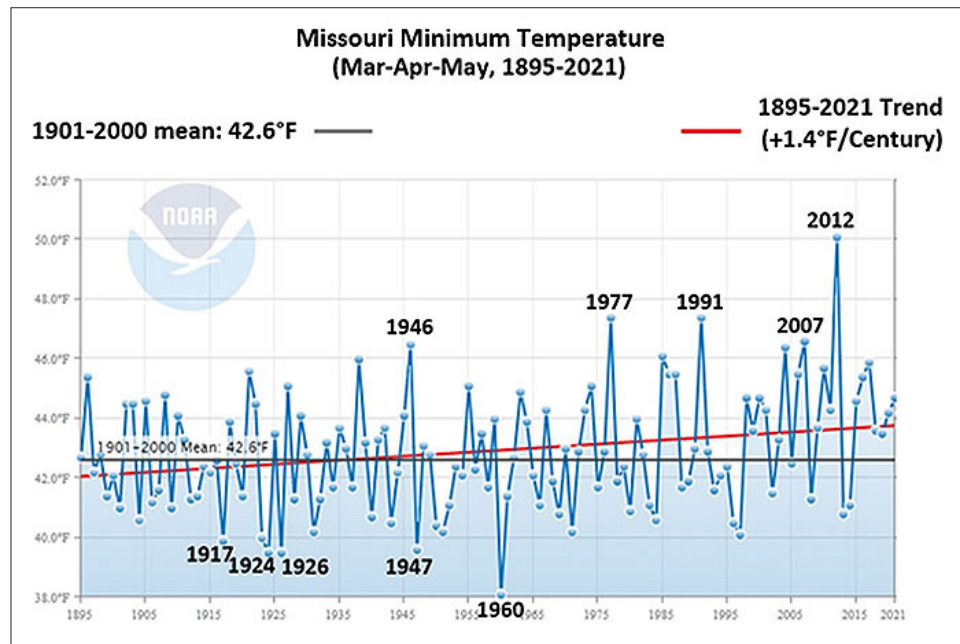


FIGURE 1 Statewide, the average minimum air temperatures in the spring are increasing. in frost/freeze temperature patterns across Missouri. Extreme dates maps are also included. These maps show the most extreme

Did you know?

Farmers and growers face a significant threat in the years to come as industrial agriculture operations continue to expand. According to the National Resources Defense Council, industrial agriculture is the large-scale, intensive production of crops and animals. Such operations make it more difficult for small farmers and growers to turn a profit, and they often involve the use of chemical fertilizers and pesticides. The use of such products poses an additional threat to small farmers and growers, as the Union of Concerned Scientists notes that the heavy application of fertilizers and pesticides accelerates soil erosion and increases pest problems. Consumers concerned by the effects of industrial agriculture on the environment and on small farmers' and growers' ability to earn a good living can support efforts such as regenerative farming and organic farms.

Silage • from page 21B

lower-priced corn and a lower factor for higher-priced corn. “This rule of thumb needs to be reconsidered given current corn and input prices,” says Massey. “Currently, silage priced in the field may be closer to seven times the price of a bushel of corn.”

Another consideration is the dry matter percentage of silage. Most often, price is determined on wet basis — as it stands in the field.

Other considerations

Producers should also consider costs of harvest, shrink, drying, transport and storage. Livestock producers should weigh costs against the cost of other feedstuffs.

Silage harvest requires specialized equipment, including a chopper and wagons.

Also, consider the removal of biomass for silage. The standing crop's value increases because only the grain is removed rather than the entire plant.

See “Pricing Corn Silage” and the silage cost analyzer spreadsheet at extension.missouri.edu/g4591.

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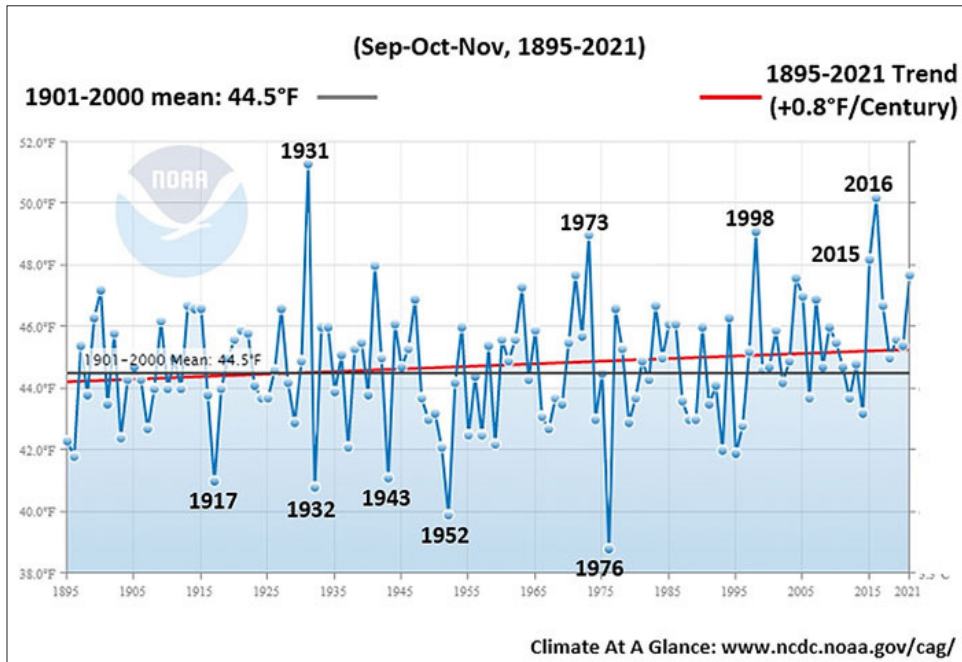


FIGURE 2 Statewide, the average minimum air temperatures in the autumn are rising.

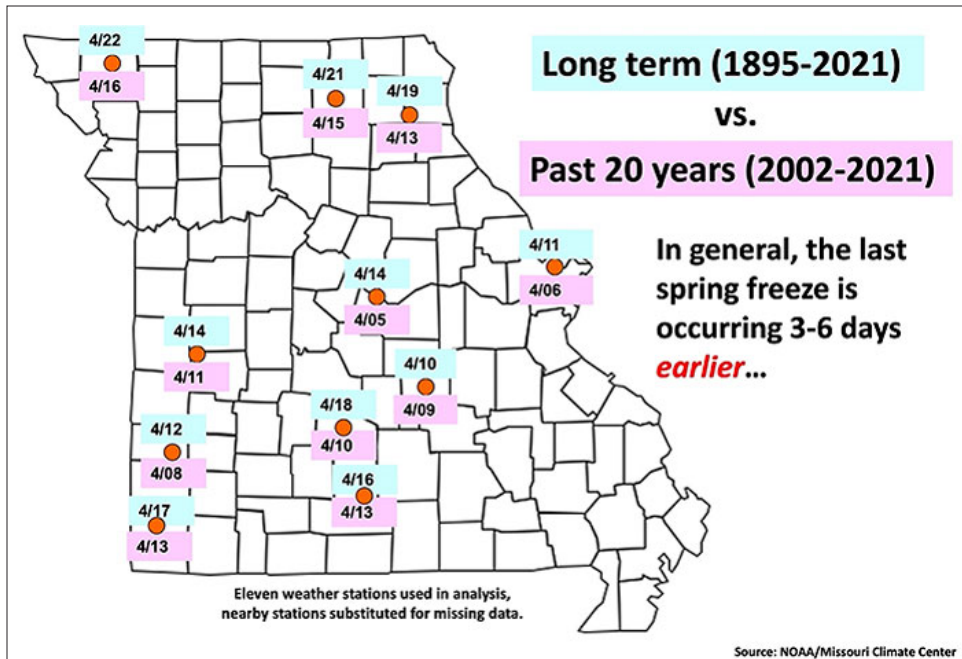


FIGURE 3 Median Date of Last Spring Freeze (≤ 32 Fahrenheit).

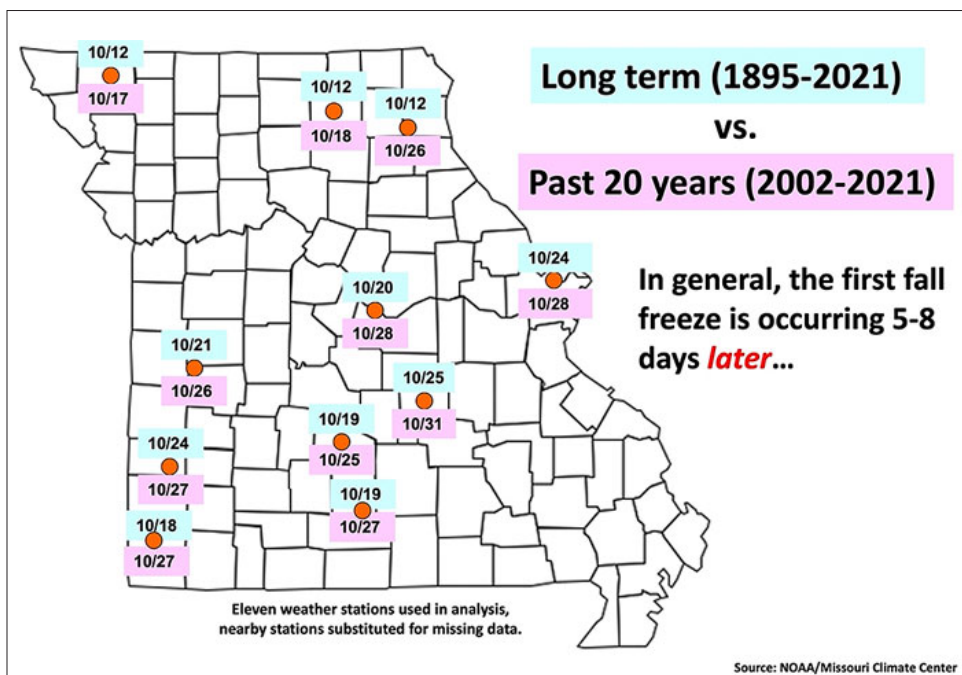


FIGURE 4 Median Date of First Fall Freeze (≤ 32 Fahrenheit).

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