Field Notes

Kerr Center for Sustainable Agriculture E-Newsletter

E-Field Notes
May 2024

Flash alert: **register early for our free elderberry workshop on July 11 - slots are filling fast!**

The pastures and prairies are hitting their stride, and David Redhage gets this month's issue rolling with a review of an **updated guide to native pollinator plants**.

This rest of the issue focuses on **things that you can add a little of to make a lot of difference:**

- **fungi to native prairie plantings**
- **cover crops to livestock operations**
- **even rose oil to keep insect pests off tomatoes**.

In that same vein of getting a lot for a little, your **donations to the Kerr Center** are what enables us to keep bringing you the latest in sustainable agriculture. **Thank you!**

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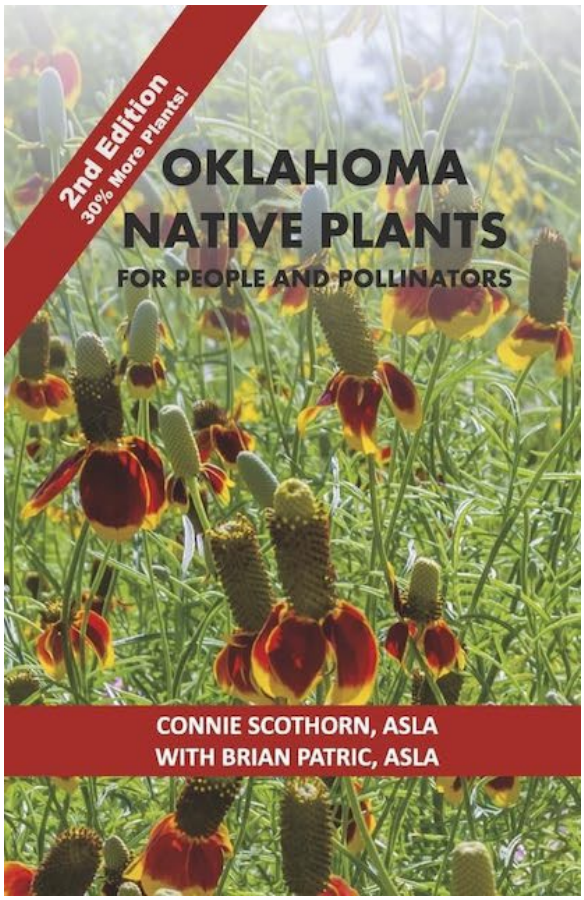
President's Note: Native Pollinator Plants for Oklahoma

In 2019, a book was published, entitled *Oklahoma Native Plants*. The book has recently been updated in a second edition, titled *Oklahoma Native Plants for People and Pollinators*.



It is an excellent book for Oklahoma conditions. A plant selector guide chart is included, which lists the plants, showing exposure requirements, soils, pollinators attracted, perennial or annual, and aggressiveness.

In my opinion, the photos are much more vibrant in the second edition. It is also expanded to include 30% more plants.

Free Elderberry Workshop at the Kerr Center July 11

Join us for this free **elderberry** workshop, with refreshments. Tour the elderberry research plots at the Kerr Center, and hear from several regional experts in the field.

This workshop will cover current elderberry research, production, and marketing, as well as a tour of the plots. The Kerr Center plots contain twelve different varieties of elderberries that are part of a multi-state research grant directed by the University of Missouri.

For more information or to register, visit the **registration page**, or contact the Kerr Center by **email** or phone (918-647-9123). Spaces are limited and filling fast!

Fungi Key to Native Prairie Plantings

There's a fungus among us - but that could be a good thing! Each new study on prairie restoration seems to add to the pile of evidence that **native prairie plants do better with beneficial fungi living on, and even in, their roots**.

In the plant-fungus partnership, the plant shares with the fungus some of the sugars it makes from sunshine. The fungus, in turn, vastly enhances the plant's ability to obtain nutrients and water from the soil.

Such mutually beneficial associations between plants and root fungi are the rule rather than the exception. **More than 80% of land plants depend on root fungi.**

Seen in that light, **using fungi in prairie restoration isn't giving the plants anything extra - it's just returning what's been missing**.

Why have the fungi gone missing in the first place? They're susceptible to things that have contributed to the disappearance of prairies over the past couple of centuries. Tillage harms them, as well as exposing them to sunlight, which they don't tolerate well. Pesticides knock out fungi, along with the weeds they're meant to target.

Restoring that essential below-ground ingredient can have powerful effects on what happens above ground as well. Liz Koziol, a researcher at the University of Kansas, found that **native plants started with their traditional fungal associates had a 40% higher chance of survival - and grew three times larger** - than those without.

Storebought fungal inoculants are available, but may not be the best choice. The fungal species in these over-the-counter treatments are likely not the natives - and may act like invasive species in their own right, outcompeting the native fungi without benefiting the native plants.

OSU professor Gail Wilson has documented the lack of benefits of such commercial fungal inoculants for native plant species in her research - but she's also hit upon **a simple, low-cost alternative. Mixing soil from nearby native prairies into restoration plantings**, she found, **both increased the survival of native prairie plant species, and limited the spread of invasive plants**.

Cover Crops on Livestock Operations

The Kerr Center has been promoting **cover crops** for a good while now - but mostly on the horticulture side. However, cover crops **can have an important, and profitable, role in livestock operations** as well.

The **USDA recently crunched the numbers on livestock operations with cover crops**. It turns out that **Oklahoma is one of the places with the most room to grow the use of cover crops with livestock**.

Many livestock operations grow crops as well, so adding cover crops to their existing rotations can bring in the usual **lengthy list of benefits - better water holding, reduced erosion, improved nutrient balance, and more**.

However, with livestock in the picture, the cover **crops can also be used as additional forage for grazing or haying - which can create a substantial boost for the bottom line**.

The USDA report found that, nationwide, about 14% of livestock operations with cropland are using cover crops. The figure is more than double for feedlots (27%) - and higher still for dairies (33%). Stocker/backgrounding operations are lower (17%), and cow-calf operations use cover crops the least (11%).

In Oklahoma, there's a big divide between east and west. In the east, feedlots and dairies are using cover crops at higher rates than the national average - 37% for dairies, and nearly half of feedlots. Out west, the numbers drop to 14% for both.

On stocker and cow-calf operations, eastern and western Oklahoma look more similar, and lower than the national average: cover crops are in use on 12 to 15% of stocker/backgrounding operations, and just 8% of cow-calf outfits.

With Oklahoma having both a relatively low cover crop adoption rate and a relatively high cattle density, the USDA report says **nearly every county in the state has either "intermediate" or "high" potential for increasing the use of cover crops on livestock operations**.

The full report is available **here**.

Tomatoes Love Roses?

A rose by any other name might smell as sweet, but **could rose oil keep pests off your tomato plants?** According to a recently published study, **the answer is yes**.

Researchers at the Tokyo University of Science treated potted tomato plants with 11 different essential oil extracts. Of those, **rose oil caused the tomato plants to increase the activity of two genes involved in plant defense**.

The **tomato plants treated with rose oil also showed lower levels of leaf damage from moth caterpillars and mites**. Moving out into the field, the researchers found that the pattern held, with **rose oil-treated tomato plants suffering only half the pest damage of untreated plants**.

Rose oil contains the active ingredient of citronella, which is widely used in insect repellents. The researchers found that the citronella in the rose oil directly repelled the moth caterpillars. It did not repel the mites, but it did attract another species of mite that preys on the pest mites.

The research team suggested that their **findings could lead to large reductions in the use of synthetic pesticides in conventional farming, as well as providing another pest-management tool for organic operations**.

The **study** was published in the Journal of Agricultural and Food Chemistry.

Late Spring Events: Elderberry Workshop, SARE Fellows Program, Canning, Cattlewomen's Boot Camp, Grants....

Our latest free [elderberry workshop] is coming up July 11. Register soon to be sure of a spot!

Application deadlines for two SARE programs are coming up soon: the **national SARE Fellows Program** (May 31), and the southern region **Research and Education Grants** (June 7).

OSU Extension is running the first of several summer **canning workshops** on June 5. In this one, in Oklahoma City, learn to make blueberry-lime jam.

OSU's **Cattlewomen's Boot Camp** kicks off June 10.

[Tour season at the Kerr Center is in full swing - book yours today!]

There are many more sustainable agriculture educational activities going on, and we're adding more to the calendar all the time. Get the latest on our online [events calendar.]

Don't forget that you can also use our online calendar to **keep yourself and your friends up to date** on these and other upcoming events, including our tours:

- **Subscribe to our feed** and receive **updates to your personal calendar** as they are made.
- **Share events on the calendar** via a number of **different social media sites**, including Facebook, Twitter, and Pinterest.

FRI
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May 31 @ 7:00 pm

SARE Fellows Program (application deadline)

The deadline for applications to the SARE Fellows Program is May 31, 2024. The SARE Fellows program provides an immersive educational experience for participants to enhance their understanding of sustainable agriculture through broad-based training and interpersonal interactions at unique agriculture operations nationwide. Participating Fellows build professional relationships, improve their teaching and technology transfer skills, and...

SARE
Sustainable Agriculture Research & Education

June 2024

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June 5 @ 5:00 pm - 8:00 pm

Water Bath Canning Workshop – Blueberry Lime

Oklahoma County OSU Extension Center 2500 NE 63rd St., Oklahoma City, OK, United States

Learn how to safely can your favorite high-acid foods. This method of canning is for acidic foods such as fruits (jams, jellies, preserves, conserves, pie fillings), pickles, relishes, sauces and tomatoes. This workshop is hands-on and will involve prepping blueberry lime jam, packing it into jars, and processing using a Ball FreshTech Electric Canner. You...

$15

FRI
7

June 7 @ 11:00 am

Southern SARE Research & Education Grant (pre-proposal deadline)

Southern SARE is requesting pre-proposals for Systems Research Projects that address issues of sustainable agriculture of current and potential importance to the region and the nation. Maximum funding amount for Systems Research Projects is $400,000. Pre-proposals with smaller funding requests are welcomed and encouraged. Southern SARE accepts proposals from applicants in the Southern region: Alabama,...

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10

June 10 - June 12

OSU Cattlewomen's Boot Camp

Stillwater Stillwater, OK, United States

The OSU Cattlewomen's Boot Camp is a project that combines elements of two successful programs, Annie's Project and the Oklahoma Livestock Boot Camps. Using previous agendas from the boot camps and the teaching model of Annie's Project, the program intends to create an informative and engaging learning experience for female producers covering various methods on...

$200

July 2024

THU
11

July 11 @ 4:00 pm - 7:00 pm

Elderberry Workshop

Join us for this free elderberry workshop, with refreshments. Tour the elderberry research plots at the Kerr Center, and hear from several regional experts in the field. This workshop will cover current elderberry research, production, and marketing as well as a tour of the plots. The Kerr Center plots contain twelve different varieties of elderberries...

Free

Support the Kerr Center

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