

Sorghum: The Unlikely Food Source for Pollinators

Sorghum bicolor, a pollen-rich grass species cultivated for grain and forage, which looks similar to corn, can be an important food source for pollinators and other beneficial insects during times when pollen and nectar are scarce.

Researchers from the U.S. Department of Agriculture (USDA)'s Agricultural Research Service (ARS) and Oklahoma State University (OSU) Division of Agricultural Sciences and Natural Resources found that sorghum, commonly called milo, served as a pollen food source for bees, hoverflies, and earwigs. Sorghum is primarily grown in the Central Plains and Southeast United States.

Additionally, when sorghum is infested with sorghum aphids — which are known to feed on all types of sorghum — large amounts of honeydew are produced as waste. This sugary by-product could be an alternative to nectar for pollinators and predatory insects, including flies, bees, wasps, and ants.

"Sorghum is not listed as a plant recommended to homeowners to feed pollinators despite frequent bee sightings," said Karen Harris-



A hoverfly (left) and an earwig (right) eat sorghum pollen. (Photos by Karen Harris-Shultz)

Shultz, a research geneticist at the ARS Crop Genetics and Breeding Research Unit in Tifton, Georgia. "However, we found that sorghum had unintended ecological benefits. It can be a potential landscape plant for homeowners and a food source for pollinators during times of pollen and nectar shortage."

According to Harris-Shultz, people are encouraged to plant nectar-rich crops with different flowering seasons but are rarely recommended to plant wind-pollinated plants, including grasses, for supporting pollinator populations.

The study's findings show promise that grass species like sorghum can be an alternative crop for pollinators during times when other crops are not available for foraging.

According to Wyatt Hoback, a professor of entomology at OSU, pollinators are declining globally, having the potential to jeopardize the human food supply and plant diversity. An alternative crop like sorghum could provide additional food for pollinators and inadvertently benefit predatory insects.

"Pollinators need

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Insects feed on honeydew from sorghum infested with sorghum aphids. (Photo by Karen Harris-Shultz)



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sugar resources to maintain flight and other activities, and they need pollen to have protein for raising offspring," said Hoback.

The recent study was published in *Insects* by Harris-Shultz (ARS), Hoback (OSU), Scott Armstrong (ARS), Michael Caballero (OSU), and Joseph Knoll (ARS).

The Agricultural Research Service is the U.S. Department of Agriculture's chief scientific in-house research agency. Daily, ARS focuses on solutions to agricultural problems affecting America. Each dollar invested in U.S. agricultural research results in \$20 of economic impact.

Source: USDA Agricultural Research Service
U.S. Department of Agriculture



A honeybee (left), southern carpenter bee (middle) and bumblebee (right) collect sorghum pollen. (Photos by Karen Harris-Shultz)

FARM TAX TIP

As the deadline for filing taxes approaches, consider adding farm income averaging to your tax management toolkit.

TAX TIP: FARM INCOME AVERAGING

Producers may be able to average some or all of the current year's income using tax rates from the previous three years.

- Works best when this year's income is greater than years prior
- Can minimize what producers owe
- Allowed for any year when actively engaged in farming



2023 cattlegirls' camp registration now open

The Oklahoma State University Extension Cattlegirls' Boot Camp has opened registration for its next session June 5-7 at the Creek County Fairgrounds in Kellyville, Oklahoma.

The event launched in 2022 to offer female ranchers a fun and engaging learning experience in the production, financial management

and market strategy involved in operating a beef cow/calf operation.

The three-day camp for women was designed using elements of both OSU livestock boot camps and Annie's Project, a national nonprofit that educates and empowers women in agriculture. The workshop was such a success that a waitlist was created for 2023.

Registration is \$150 a person and will remain open until all 50 spots are filled.



Bootcamp partners this year include the U.S. Department of Agriculture National Institute of Food and Agriculture, Southern Extension Risk Management Education, Oklahoma Cattlegirls' Association, Oklahoma Women in Agriculture and the Oklahoma Women Veterans Program. See a list of workshop topics that will be covered and register on the OSU Extension website.

Wheat grazing draws to a close with first hollow stem on the horizon



The first hollow stem stage of grazed wheat, a lead indicator of when to remove cattle from wheat pasture to preserve yield potential, could arrive within the next two to three weeks for some varieties.

Amanda De Oliveira Silva, Oklahoma State University Extension specialist for small grains, said her wheat research team is measuring the crop's progress twice a week, but most wheat varieties, even those planted early, are not quite there yet.

"Wheat is a little behind primarily due to moisture and cold temperatures," she said. "The drought is really affecting crop growth and development. Also, we didn't have the amount of forage we would like this year, so we have a lot of producers who didn't have a chance to graze, especially in the fall."

Some, but not all, parts of the state have received substantial amounts of rain within the past couple of weeks. Silva said moisture is important for dual-grazed wheat, but varieties planted for grain harvest only will need rain most when the plants leave dormancy later this spring.

The U.S. Department of Agriculture estimates 4.6 million acres of wheat were seeded in 2022, an increase of 7% from 2021. Silva said a lot of the state's crop, especially those acres intended for forage, was seeded late using the method of dusting in due to extreme drought conditions.

As the weather consistently warms up, she said producers who graze their wheat can begin measuring for first hollow stem every couple of days.

"The most critical thing is for producers to not graze past first hollow stem to protect the plant's canopy, especially when conditions are harsh," she said. "Plants may not have the ideal conditions for regrowth, and that can harm yield. Different varieties vary up to three to four weeks in reaching first hollow stem."

Learn more about how grazing past first hollow stem can impact wheat yields on Silva's World of Wheat blog and on "SUNUP," OSU Agriculture's weekly television show.

Tips and tricks for beginning gardeners

Growing vegetables sounds like fun, and who doesn't like pretty flowers in the landscape — but where does a beginning gardener start to cultivate a green thumb?

David Hillock, Oklahoma State University Extension consumer horticulturist, said there are things novice gardeners need to keep in mind before turning over the first shovelful of soil or filling the first pot.

"Location is a key part of successful gardening. Most plants need at least six hours of continuous sunlight to perform at their best," Hillock said. "Good soil is also a must. Have a soil test done to see what nutrients may need to be added to the soil."

Natural light isn't the only thing to consider when picking a location. Make sure the garden spot is close to an irrigation source because dragging a hose all over the yard quickly becomes tiresome. Also, keep the garden location close to the house.

"The easier the access, the more likely you'll be to take care of gardening chores, such as watering and pulling weeds," he said.

Hillock cautions new gardeners to take a reasonable approach.

"It's a good idea to start small in the beginning," he said. "It's perfectly fine to start with just a container or two of herbs or a small bed with a zucchini mound and a tomato plant. It can be easy to get overwhelmed with too big of a space in the beginning. Only grow things your family will eat."

Casey Hentges, host of OSU Agriculture's "Oklahoma Gardening" television show, offers tips on five easy vegetables for beginning gardeners to grow or the top five herbs.

Laura Payne, OSU Extension horticulture specialist in Payne County, cautions new gardeners about spending a lot of money on tools and other supplies in their inaugural year of gardening.

"Anytime I start something new, I always feel like I need to have all the tools now," Payne said.

"Don't invest a lot of money on pots, tools and gadgets right away. Start with just a few basic tools and go from there. Consider starting with a trowel, a small pair of loppers or shears and a pair of gardening gloves. Gardeners may even be able to upcycle some things from around the house. Spend some time and determine if gardening is a hobby you're going to enjoy. If so, then invest in more equipment."

It's important for gardeners to know what USDA Plant Hardiness Zone they live in. Growing zones/planting zones help gardeners determine what flowers, plants or vegetables grow in a specific region. Oklahoma growing zones range from 6a in the northwest part of the state to 8a in the southeast corner.

"When going to the local nursery or garden store, check the plant tags to ensure your choices are designed to grow well in your area," Hillock said. "The tags also provide vital information on proper planting techniques, along with light and irrigation requirements."

Gardening is one of the most popular leisure activities, and following these tips will help beginning gardeners get started without being overwhelmed.

OSU Extension recently developed a comprehensive Plant ID website to help both new and seasoned gardeners identify and learn more about hundreds of plants. Plants are listed by their common names in an A-Z format. OSU Extension offers additional gardening information.

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