

What's Growing On?

BASTROP COUNTY MASTER GARDENER ASSOCIATION

September 2023

FALL PLANT SALE

OCTOBER 7TH

9:00a - 1:00p

Tax-Free

BASTROP AREA LIVESTOCK SHOW & FAIR ASSOCIATION

●●● Mayfest Park - 25 American Legion Dr. Bastrop, TX 78602 ●●●



vegetables ● perennials
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Ox Beetles

By Wizzie Brown

Texas is home to three species of Ox beetles, with the most common being *Strategus aloeus* (others are *S. antaeus* and *S. mormon*). These beetles are large, reddish brown and show sexual dimorphism. Males have protruding horns on the pronotum, a platelike structure that covers the thorax. Adults are winged with front wings hardened into an elytra while hind wings are membranous and used for flight. Ox beetles are in the family Scarabaeidae, along with May and June beetles, so they have a similar body shape but are much larger.



Ox beetles have a complete life cycle with four life stages: egg, larva (called a white grub, on left), pupa, and adult. Ox beetles, both adults and larvae, are not typically considered pests although they sometimes feed on plant roots. Eggs are laid in rotten wood or on roots in sandy soil. Larvae are typical

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grubs and are creamy white, C-shaped, with 6 legs and a well-developed head capsule. Grubs last about 6-7 months and then pupate in the soil.

The *Aloeus ox* beetle has major and minor males that have variations in the size of horns on the pronotum. Major males have large horns, two on each side at the rear of the pronotum and one towards the front in the center, while minor males have stubby horns. Males use horns for fighting other males over mating privileges. Female *Aloeus ox* beetles do not have horns, but have a small raised area at the front center of the pronotum that is used for digging in soil.



Aloeus ox beetles are active in Texas spring through late summer. Adults live 4-6 months and feed on flowers and fruit, but populations are usually not dense enough to cause a lot of damage. Often, larvae are found burrowed into tree stumps, other decaying wood, or compost piles where they are considered to be beneficial decomposers. While typically larvae are not considered to be problematic, there have been reports of larvae damaging palms.

For more information or help with identification, contact Wizzie Brown, Texas AgriLife Extension Service Program Specialist at

512.854.9600.

This work is supported in part by the Crop Protection and Pest Management, Extension Implementation Program [award no. 2021- 70006-35347/project accession no. 1027036] from the United States Department of Agriculture (USDA) National Institute of Food and Agriculture.

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New Website Features

Check out our website, which features project slideshows, a new photo gallery section, and an events calendar to check out upcoming activities. Find news articles and our newsletters. Thanks to Dave Posh for keeping the info timely for us <https://txmg.org/bastropcounty/>

Volunteering

Master Gardeners volunteer in the community to teach others about horticulture. We follow the research-based recommendations of Texas A&M AgriLife Extension. Members who complete 50 hours of volunteer service in the year after training earn the designation “Texas Master Gardener.” We use our title only when engaged in Texas A&M AgriLife Extension activities.

Many Benefits to Planting Cereal Rye as Cool-Season Cover Crop

By Howard Nemerov



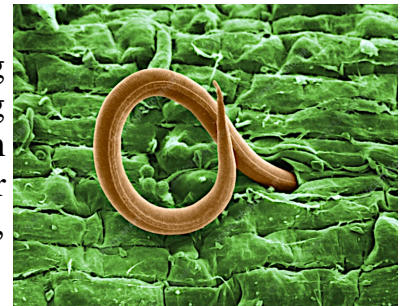
Would you like a simple, one-step solution for insect and weed control while keeping your garden green all winter? A cover crop of cereal rye (aka Elbon Rye) is a great option .

Cover crops provide many benefits that build and maintain soil health.¹ Growing cereal rye from fall through winter reduces erosion during heavy rain events, which are more likely during an El Niño as predicted for this coming fall.²

Another benefit: Cereal rye increases organic matter *in* the soil, because “the majority of the organic material produced is in the root system rather than the top foliage.”³ Cereal rye’s extensive root system builds soil by adding organic matter far deeper than tillers can reach, breaking up soil compaction, and enhancing rainwater absorption and root penetration.⁴ When it dies in spring, decaying roots leave channels for earthworms to travel deeper into the soil, where they produce higher organic content with their castings.

While any good cover crop also provides the above benefits, what sets cereal rye apart are two unique attributes: control of root knot nematodes and weed seeds.

Root knot nematodes are predatory pests that attack plant roots, producing root galls and deformations which reduce normal root function, leaving plants stunted and yellowish. In Bastrop, we’re mainly concerned with Southern root-knot nematode (*Meloidogyne incognita*) which attacks our favorite vegetables, fruits, and herbs (e.g., tomatoes, watermelon, and basil, respectively).⁵



Heavy infestations cause plants to wilt and die.⁶ With crops like tomatoes, root knot nematodes can reduce production.⁷ Left untreated, root knot nematodes over-winter and attack next year’s plantings. Considering that many vegetables and flowers are susceptible, crop rotation may not be a complete solution, though still recommended.⁸ (A list of susceptible and resistant flower species is available to download at the link in endnote 8.)

Cereal rye provides a one-two-three punch that controls root knot nematodes. First, it serves as a trap crop: Once nematodes enter the roots, they cannot escape and die. Second, as cereal rye decomposes, it releases organic compounds that further reduce the nematode population. Third, decomposition feeds beneficial soil organisms that further control root knot nematode populations.⁹

Cereal rye residues also “produce chemicals that reduce weed seed germination.”¹⁰ Along with mulching, spending less time weeding saves your back and hands from repetitive stress injury and frees your time for more pleasant gardening pursuits like harvesting a bumper crop of tomatoes.

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If you're still not sold, consider cereal rye's role in stabilizing soil nutrients. It "absorbs unused soil nitrogen" remaining from previous crops and "can retain as much as 100 lb/acre" of nitrogen that will *not* run off during rain events to pollute waterways.¹¹ Recent research shows that rye cover cropping may also contribute to carbon sequestration, building humus-rich soil instead of letting fields release carbon dioxide into the atmosphere.¹²

Important note: Make sure you buy cereal rye and not annual rye often sold by local retailers. The latter doesn't offer the benefits discussed here.¹³ If you search online for seed, enter "Elbon rye" and verify that you're buying Elbon rye from your source.

Suggested Best Practices

Cereal rye needs cool weather and exhibits excellent frost tolerance. In Bastrop County, a November planting has worked well for me. I rake back mulch and lightly tap the soil with a leaf rake after seeding to slightly cover seed and ensure good contact soil. Water in immediately or seed before rain-fall, and keep moist until you see green shoots appear. After that, water deeply to keep soil moist enough to enhance root development.

Cereal rye can reach 15 inches or higher by late winter. A few weeks before spring planting, I chop it down with a string trimmer and leave it as green manure. Contrary to most expert advice I've read, I do *not* pull rye out or till it in. I just spent a few months growing organic matter deep in the soil. Why eliminate that? I use the string trimmer just before planting to cut rye as close to the soil as possible. When planting spring crops like tomatoes, I use a shovel to cut through the root mass and dig out a planting hole. I mulch with fall leaves and tree service wood chips after planting, further reducing rye's potential to regrow. If it happens, it's a cool-season species and will die off as spring warms into summer. I prefer obtaining the maximum benefit with the least effort, and let Nature restore balance whenever possible.

Rye seed saving is unlikely in our climate. If it manages to produce ripe seed before heat shuts it down, you also risk it becoming "weedy" (plants growing where you don't want them). The USDA says cereal rye "has the potential to become a weed if it is allowed to produce mature seed" and notes that it's "historically grown in the North Central states of South Dakota, Nebraska, North Dakota, and Minnesota."¹⁴

Plant cereal rye this fall, water it in, then sit back and relax as you watch your garden's health grow.

Endnotes

¹ Ledbetter, Kay. "Cover crops play important role in resilient agriculture." Texas A&M AgriLife Extension. Accessed August 23, 2023. <https://agrilifetoday.tamu.edu/2022/01/13/cover-crops-play-important-role-in-resilient-agriculture/>

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³ "Cereal Rye for Nematode Control." Texas A&M AgriLife Extension. Accessed August 23, 2023. <https://aggie-hort.tamu.edu/archives/parsons/earthkind/ekgarden26.html>

⁴ Magdoff, Fred; Van Es, Harold. Building Soils for Better Crops, 4th Edition (p. 33). Sustainable Agriculture Research and Education, USDA. <https://www.sare.org/resources/building-soils-for-better-crops/>

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⁷ Nemerov, Howard and Masabni, Joseph. "Sincocin-Beneficial Control for Rootknot Nematodes?" Texas A&M AgriLife Extension, February 16, 2022. Accessed August 23, 2023. <https://agrilifelearn.tamu.edu/s/product/sincocinbeneficial-control-for-rootknot-nematodes/01t4x000004OkohAAC>

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⁹ “Cereal Rye for Nematode Control.” Texas A&M AgriLife Extension.

¹⁰ Magdoff, Fred; Van Es, Harold. Building Soils for Better Crops, 4th Edition (p. 107). Sustainable Agriculture Research and Education, USDA. <https://www.sare.org/resources/building-soils-for-better-crops/>

¹¹ “Cereal Rye”. United States Department of Agriculture. Accessed August 25, 2023. https://plants.usda.gov/DocumentLibrary/plantguide/pdf/pg_sece.pdf

¹² “Rye the Right Crop for “Nabbing” Nitrates, Capturing Carbon and Generating Bioenergy.” USDA Agricultural Research Service, August 10, 2023. Accessed September 16, 2023. <https://www.ars.usda.gov/news-events/news/research-news/2023/rye-the-right-crop-for-nabbing-nitrates-capturing-carbon-and-generating-bioenergy/>

¹³ “Cereal Rye for Nematode Control.” Texas A&M AgriLife Extension.

¹⁴ “Cereal Rye”. United States Department of Agriculture.



We're Fortunate for Fungi!

Text and Pictures by Howard Nemerov

Without fungi, dead trees would remain in their original state, and the only way to recycle them would be fire. With that kind of fuel load, every forest fire would be catastrophic. Here's a look at two fungus species inhabiting my backyard.

Coprinopsis picacea (Magpie Inkcap)



This one sprang up right after a recent rain in a heavily-mulched bed, growing amongst Golden Guardian Marigolds (*Tagetes patula* 'Golden Guardian.') Fortunately, I saw it early in the morning; by evening the day's heat reduced it to unrecognizable mush.



Leucocoprinus birnbaumii (Flowerpot Parasol)



Interestingly enough, it's growing in a large flowerpot! The “buds” (left) appeared on a late July afternoon, growing in a heavily-mulched pot. Again, I captured the mature fruiting body (right) early the next morning, because they were wilted by evening (lower right).



Both are saprophytic fungi, or saprotrophs: They decompose dead or decaying organic matter—particularly cellulose from woody plants—to use as food.¹ By the time fruiting bodies (mushrooms) appear, fungi can grow miles of mycelia: root-like structures made up of threadlike hyphae.² Mycelia perform the digestive work, breaking down organic matter to extract nutrients. Consider this entire structure a fungal root system, while mushrooms are like flowers. While flowers produce seeds that become the next generation, mushrooms produce spores for the same purpose.

Because I mulch continuously with fall leaves and tree service wood chips, there's always plenty of fungal food in my garden. They break this woody material down, releasing organic matter and nutrients into the soil, just like what happens in the forest.

I'm feeding microbes, and the microbes feed the plants.

Endnotes

¹ Petruzzello, Melissa. “Saprotroph.” Britannica. Accessed September 23, 2023. <https://www.britannica.com/science/saprotroph>

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