

# What's Growing On?

## BASTROP COUNTY MASTER GARDENER ASSOCIATION

February 2021

### Boxelder Bugs

By Wizzie Brown

Boxelder bugs are dark brownish-black insects with reddish-orange markings around the edges of the thorax and wings. These bugs are about ½ an inch long as an adult. Nymphs, or immatures, look like adults but are smaller and do not have fully developed wings which allows you to see their bright red abdomen.



While boxelder bugs typically do not cause damage to the landscape or structure, they may become a nuisance in and around homes beginning in the fall and continuing until spring. In fall,

adults and large nymphs gather in large numbers and move to overwintering areas. Boxelder bugs spend winter in cracks and crevices in walls, around door and window casings, in tree holes and in debris on the ground. Sometimes boxelder bugs try to move indoors for overwintering. On warm days from fall until spring, adult boxelder bugs emerge from their overwintering location to warm themselves in the sun.

Removing female boxelder trees from the area may solve problems with large, repeated infestations of boxelder bugs. Hiding places can be reduced or eliminated by removing debris such as boards, leaves and rocks from the area as well as sealing and cracks and crevices around the home with caulk or expanding foam. If chemical treat-

*(Continued on page 2)*

Hosted by the Bastrop County Master Gardeners

## SPRING PLANT SALE

**ORDER ONLINE MARCH 4-6**  
**CURBSIDE PICKUP MARCH 13**

Order online at <https://bcmga78602.company.site>

Curbside pickup by appointment at

MAYFEST PARK

25 American Legion Dr. in Bastrop



## Virtual Plant Sale Coming Soon!!!

**Online orders:** March 4 (tax-free day)  
 March 5-6

**Drive-through pickup (by appointment) on**  
 Saturday, March 13

Proceeds benefit Bastrop County Master Gardener Association educational programs. BCMGA is a 501(c)(3) non-profit organization and a Texas AgriLife Extension program.

### Inside this issue:

Boxelder Bugs (continued)	2
Does Wood Chip Mulch 'Steal' Soil Nitrogen?	3-6

(Continued from page 1)

ment is desired, treat overwintering areas with chemicals containing active ingredients such as pyrethrins, cyfluthrin, bifenthrin, carbaryl or acephate.

For more information or help with identification, contact Wizzie Brown, Texas AgriLife Extension Service Program Specialist at 512.854.9600. Check out my blog at [www.urban-ipm.blogspot.com](http://www.urban-ipm.blogspot.com)

This work is supported by Crops Protection and Pest Management Competitive Grants Program [grant no. 2017-70006-27188 /project accession no. 1013905] from the USDA National Institute of Food and Agriculture.

*The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas A&M AgriLife Extension Service or the Texas A&M AgriLife Research is implied.*

*The Texas A&M AgriLife Extension Service provides equal access in its programs, activities, education and employment, without regard to race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation or gender identity.*



## 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.

## Funereal Duskywing (*Erynnis funeralis*) on Blue Mistflower (*Conoclineum coelestinum*)

A long fall season provided *Conoclineum coelestinum* time for an extended flower display. This Bastrop County native doesn't start flowering until mid-October, providing late-season nectar for hungry pollinators. You may also get opportunities to capture shy, rare creatures like Funereal Duskywing.

[Text and pictures by Howard Nemerov]



# Does Wood Chip Mulch ‘Steal’ Soil Nitrogen?

By Howard Nemerov

When discussing wood chip mulch, some people expressed concern that it “ties up” soil nitrogen, reducing what’s available to plants and leading to deficiency symptoms. Numerous university extension sources say this isn’t true, with one manageable caveat. Learn how to incorporate wood chips into your soil building program with only upside from your effort.

## Nitrogen, carbon, and plant nutrients

(Note: Texas A&M AgriLife’s comprehensive composting primer discusses the following section in detail; this basic overview relates to mulching.<sup>1</sup>)

Composting involves mixing high-nitrogen and high-carbon materials. Carbon—from inputs like fall leaves and wood chips—provides energy for microbes that break down your compost pile into a nutritious addition to your garden soil. Microbes need nitrogen—examples are cow manure and fresh lawn clippings—to build cells, grow, and reproduce. When there’s enough nitrogen and carbon available, raw organic materials decompose quickly, making their nutrients available to plants.<sup>2</sup>

Composting is a way to accelerate and enhance natural decomposition of organic materials. This process happens no matter what; it’s just slower without a balanced compost pile. This is why, under certain conditions, high-carbon wood chips *might* consume soil nitrogen during decomposition.

## Mulching versus tilling

It’s important to understand the difference between mulching and tilling, and their impacts on soil nutrients. Texas A&M AgriLife Extension notes:

*“A mulch is any material placed on the soil surface to conserve moisture, lower soil temperatures around plant roots, prevent erosion and reduce weed growth.”<sup>3</sup>*

The key here is that mulch remains **on the soil surface**. This is different than tilling, which uses mechanical means to loosen soil for better root penetration, while also mixing organic matter **into the soil**, making nutrients accessible to plant roots. Ideally, only decomposed organic matter gets tilled: compost is a classic example.<sup>4</sup>

Tilling in wood chips isn’t recommended. As A&M notes: “nitrogen depletion will be a temporary problem when fresh wood chips are incorporated into the soil.”<sup>5</sup>

## Benefits of using wood chip mulch

As mulch, A&M reports the advantage of using locally harvest wood chips over expensive bark products:

*Using local mulch (from municipal tree trimmings) around plants has certain advantages over pine or hardwood bark. The contents of the local mulch is much closer to the contents of rich compost. The local mulch blend actually feeds plants being mulched but bark usually causes nutrients to be robbed from plants being mulched.<sup>6</sup>*

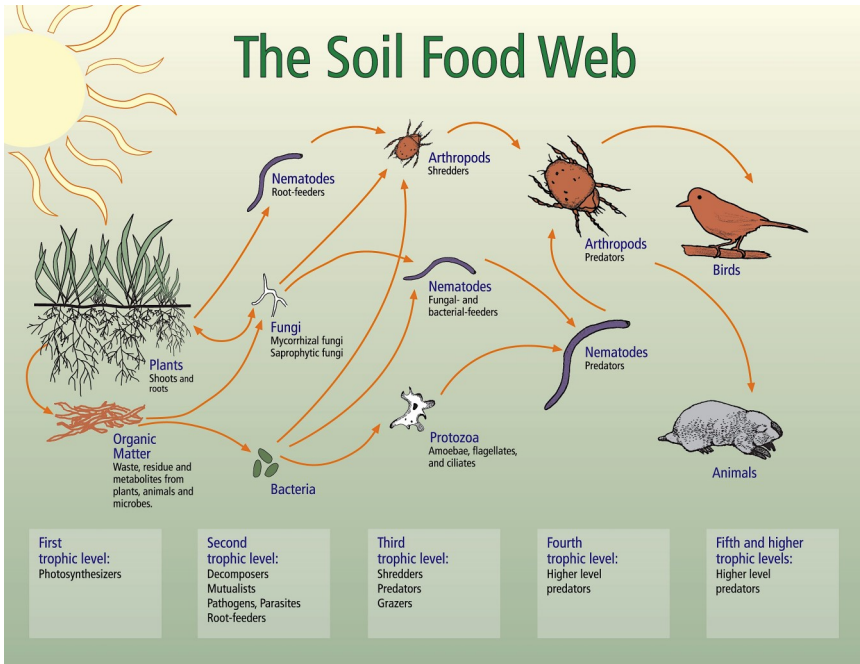
(Continued on page 4)

Trimmings provided by a local tree service usually include many species, supporting a more diverse microbial population.<sup>7</sup> Saprophytic fungi—aka decomposers—consume fresh wood fibers, breaking wood’s lignin and cellulose while releasing nutrients locked up in those dense carbon fibers.<sup>8</sup> The resulting output feeds arthropods and nematodes, which in turn feed other insects and animals in the “soil food web” (see illustration below). As microbes break down wood chips, earthworms and insects carry nutrients into the soil. You’re not “mulching with wood chips,” you’re providing necessary nutrient

sources so that Nature can begin a recycling program as old as time in your garden, providing balanced soil and constant, slow-release nutrients.<sup>9</sup>

The USDA’s soil food web primer is short and worth reading. To sum it up:

- There is a bacterium, fungus, insect, etc. consuming organic material at every step in the decomposition process.
- They produce “waste products” after consuming their favorite food, creating food for the next group of decomposers, or making plant nutrients available (e.g., worm castings.)
- If you build it, they will come.



(Source: USDA Natural Resources Conservation Service)

Mulching with natural organic materials like wood chips is one of the easiest and cheapest ways to build soil. Also, tilling disrupts the soil food web—disrupting microbe populations that naturally exist at various soil depths and killing earthworms that naturally till the soil—making you dependent on regular tilling to inject organically derived nutrients into the soil.

## How to use wood chip mulch

Extension experts generally recommend against using wood chip mulch directly on soil in vegetable beds, to avoid possible nitrogen depletion from decomposing wood chips. North Carolina Cooperative Extension says that fresh wood chip mulch “can cause significant nutrient deficiencies, particularly for herbaceous plants, or if they are incorporated into the soil,” which can happen inadvertently when digging holes to plant.<sup>10</sup>

However, this is a manageable, short-term concern. In nature, fresh tree detritus doesn’t impact soil nutrients, because of the long-term cycling of fresh organic matter covering older, decomposed materials. Fresh organic “mulch” in the forest provides the aforementioned benefits of keeping soil and older materials moister so they may decompose faster, creating a constant, slow-release fertilizing process. ***Consider wood chip mulch as priming a natural nutrient pump when initiating a continuous mulching program.***

Applying fresh wood chips over old mulch creates an insulating layer between soil and new mulch. The old mulch is already decomposing, releasing nutrients into the soil. Any nitrogen removed from older

*(Continued from page 4)*

mulch to help decompose fresh wood chips withdraws from the “nutrient bank account” you’ve invested in—not the soil—and then replenishes those temporary withdrawals with dividends as additional organic matter begins decomposing. Microbes which broke down last year’s wood chips hungrily await fresh food.

In my vegetable beds with 6+ years of no-till sheet composting, annual AgriLife soil test results show no nitrogen deficiency, recommending I only “apply an additional 1 lb N/1000 sqft every 4-6 weeks, as needed, to maintain vegetative growth.” All other nutrients test at high enough levels that AgriLife hasn’t recommended any other fertilizers.

My program involves spreading 1–2" layers each of fall leaves, rabbit manure, and wood chips, in that order (see my respective pictures below). Again, wood chips aren’t in direct soil contact. A middle layer of manure provides nitrogen for leaves and wood chips to break down faster, since they’re in contact with an above-ground nitrogen source.



Any manure could work, including green lawn clippings, depending on lead time. Sheet composting, aka lasagna gardening, may be slower than a compost pile, but Nature gets there eventually. Oregon State University offers a primer on sheet composting: layering alternating carbon and nitrogen layers on new or existing beds. The key here is time: “If you finish your sheet mulch in the fall, the new garden bed will be ready for planting in the spring.”<sup>11</sup> This is an important consideration if using animal manures, to avoid possible burning from fresh manure. The benefit is that when spring arrives, you’re ready to plant: While everybody else is running around to buy and till in bags of compost—and committing “wormicide”—you’re planting tomatoes and flowers.

This is why, as a final protection against possible nitrogen depletion, I mulch my spring vegetable beds in the fall, and prepare for fall crops in late summer, creating fallow periods where microbes begin decomposing fresh organic matter. When it’s time to set out flowers and vegetables, any lost soil nitrogen is already replenished.

Tree services must do something with their trimmings at day’s end. Will they consume precious landfill space? Or will you partner with them to benefit the local environment by letting microbes and earthworms do your tilling and fertilizing?

*(Continued on page 6)*

## Endnotes

- <sup>1</sup> “Don’t Bag It™ – Compost It!!” Texas A&M AgriLife Extension. Accessed February 4, 2021. <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/>
- <sup>2</sup> “Chapter 1, The Decomposition Process.” [Don’t Bag It!] Texas A&M AgriLife Extension. Accessed February 4, 2021. <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/chapter-1-the-decomposition-process/>
- <sup>3</sup> Beck, Malcolm, Parsons, Jerry M., Roberts, Roland E. “Mulches for Enhanced, Low-Cost, Low-Maintenance Landscapes.” Texas A&M AgriLife Extension. Accessed February 3, 2021. <https://aggie-horticulture.tamu.edu/archives/parsons/drought/mulches.html>
- <sup>4</sup> Masabni, Joseph. “Soil Preparation.” Texas A&M AgriLife Extension. Accessed February 3, 2021. <https://agrilifeextension.tamu.edu/library/gardening/soil-preparation/>
- <sup>5</sup> “Fresh Wood Chips for Mulch – Harmful or Good?” Texas A&M AgriLife Extension. Accessed February 3, 2021. <https://agrilife.org/etg/fresh-wood-chips-for-mulch-harmful-or-good/>
- <sup>6</sup> “Mulches for Enhanced, Low-Cost, Low-Maintenance Landscapes.” (See note 3)
- <sup>7</sup> Chalker-Scott, Linda, Ph.D. “Wood chip mulch: Landscape boon or bane?” Washington State University. Accessed February 3, 2021. <https://s3.wp.wsu.edu/uploads/sites/403/2015/03/wood-chips.pdf>
- <sup>8</sup> Ingham, Elaine R. “The Living Soil: Fungi.” USDA Natural Resources Conservation Service. Accessed February 3, 2021. [https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2\\_053864](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2_053864)
- <sup>9</sup> Ingham, Elaine R. “Soil Biology.” USDA Natural Resources Conservation Service. Accessed February 3, 2021. [https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2\\_053860](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/health/biology/?cid=nrcs142p2_053860)
- <sup>10</sup> Hunter, Deborah. “Fresh Wood Chips as Mulch.” North Carolina Cooperative Extension. Accessed February 3, 2021. <https://macon.ces.ncsu.edu/2017/02/fresh-wood-chips-as-mulch/>
- <sup>11</sup> “Three methods for no-turn cold composting.” Oregon State University Extension Service. Accessed February 10, 2021. <https://extension.oregonstate.edu/gardening/techniques/three-methods-no-turn-cold-composting>



### Two Natives

Gulf Fritillary (*Agraulis vanillae*) on Cowpen Daisy (*Verbesina encelioides*). Believe it or not, spring is only a few weeks away. Flowers and butterflies won’t be far behind. [Text and pictures by Howard Nemerov]



### 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/>