

# What's Growing On?

## BASTROP COUNTY MASTER GARDENER ASSOCIATION

August 2022

### Chiggers

By Wizzie Brown

Chiggers are the first stage out of the egg of a particular type of mite. They climb onto people and other animals walking through infested areas, crawl upwards, and wander around the body seeking a good site to settle down and feed. Feeding preference for these mites on humans is in areas where skin is thinnest (behind knees, armpits) or where clothing fits tightly, such as the ankles, waist, and the groin area.



Chiggers do not burrow into skin as many people believe, so “smothering” them with nail polish is useless. When chiggers feed, they inject a digestive enzyme that breaks down skin cells. The skin cells then create a feeding tube called a stylostome that the chigger uses to suck up liquified skin cells to eat. Itching and redness is caused when our body reacts to the enzymes injected into our skin as well as the body breaking down the stylostome. Itching typically begins 3-6 hours after being bitten, peaks at 24 hours, and can last up to two weeks. By the time you begin to itch from chiggers, they are usually long gone as they will fall off the body once feeding is completed or can be brushed off by clothing or showering.

The best way to avoid getting chiggers is to avoid infested areas. Since this is not always possible, here are some other things to try:

- Wear protective clothing- tightly woven items that fit loosely; including long sleeves & pants; shoes or boots.

*Hosted by the Bastrop County Master Gardeners*

## FALL PLANT SALE

# OCTOBER 8

BASTROP AREA LIVESTOCK SHOW & FAIR ASSOCIATION  
 Mayfest Park - 25 American Legion Dr.  
 Bastrop, TX 78602  
 9:00a-1:00p

- Tuck pant legs into socks and boots.
- Use an insect repellent with DEET or picaridin before entering an infested area.
- Avoid sitting on the ground.
- Remove & launder clothing ASAP after being in infested areas.
- Shower/ bathe after being in an infested area; scrub vigorously with a washcloth.

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To treat chigger infestations around the home, try the following:

- Keep lawn trimmed.
- Maintain vegetation; do not allow weeds to grow up & keep brush cleared.
- Target infested areas with residual pesticide sprays.



For chigger bites:

- Do not scratch pustules; opening pustule might lead to infection.
- Oral antihistamines or topical anti-itch creams to relieve itching sensation.

For more information or help with identification, contact Wizzie Brown, Texas AgriLife Extension Service Program Specialist at 512.854.9600.

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## Fall Monarch Migration Self-Starter Kit

By Howard Nemerov

The fall migration needs nectar to fuel up on their way to over-wintering in Mexico. **They do not need milkweed in the fall, as this generation does not reproduce.** While native annuals and perennials, should be the backbone of your pollinator garden, *Zinnia elegans* is a Monarch favorite. Unfortunately, nurseries generally sell annual starts in the spring, so if you want fall Zinnias you must start them from seed. Zinnias are in the Aster family, which includes *Tithonia rotundifolia* (Mexican Sunflower), another plant you'll need to start from seed for the fall migration.

I started this crop indoors on July 2, moved to start pots indoors 2-3 weeks later, and bumped to #1 pots August 6-12. Around September 1, I'll plant them in beds beneath 50% shade cloth until their roots establish, perhaps 1-2 weeks. *Tithonia* just popped first flowers 2 days ago.



## 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.

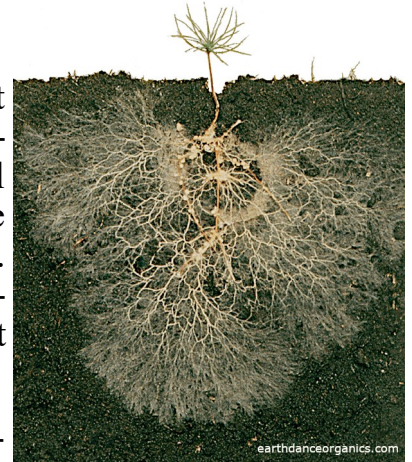
# Mycorrhizae Help Grow Healthier Native Milkweeds

By Howard Nemerov

On August 15, 2022 the Hill Country Chapter of the Native Plant Society of Texas hosted an online lecture by Carol Clark, a Monarch Watch Conservation Specialist.<sup>1</sup> Ms. Clark discussed gardening for Monarch butterflies, and mentioned that native milkweeds benefit from being grown in soil containing mycorrhizae. Since there are many branches of the mycorrhizae family, it's important to know which mycorrhizae milkweeds need so that you can grow the healthiest plants and have the most success growing them.

## Understanding Mycorrhizae

Mycorrhizae are fungi that generally act as mutual symbionts with plant roots, where both organisms benefit from “close and prolonged interaction.”<sup>2</sup> Mycorrhizae attach to plant roots and then extend out into the soil farther than root systems normally go. As a result, mycorrhizae provide water and nutrients that plants couldn't access with their own root systems. In exchange, plants provide mycorrhizae with carbon (food). It's a mutually beneficial relationship, each providing nutrients that the other couldn't get on its own.<sup>3</sup>



For landscape and vegetable plants, there are two main classes of mycorrhizae. Arbuscular mycorrhizae—also known as **endomycorrhizae**—usually partner with vegetable crops, flowering annuals, and perennials. All mycorrhizae produce hyphae, threadlike growths that make up mycelium that function similar to plant roots. With endomycorrhizae, these hyphae grow inside plant roots, whereas **ectomycorrhizal** hyphae grow outside the root.<sup>4</sup> Generally, woody perennials like trees and shrubs partner with ectomycorrhiza. There are exceptions—and some plants like brassicas (e.g. cabbage, kale, cauliflower, mustard greens) don't interact with mycorrhiza at all—so it's best to download a mycorrhizal reference chart listing plants by family and genus.<sup>5</sup>

Regarding native milkweeds, available references do not include the Asclepiadaceae family like milkweeds native to Bastrop County and the rest of Texas. When asked if our milkweeds use endo- or ectomycorrhizae, Ms. Clark was unable to provide a definitive answer, highlighting the need for more research into milkweed propagation and restoration to support the Monarch migration.

Fortunately, internet searches returned research identify the need to provide milkweeds with **endomycorrhiza**, as noted in the journal “Ecosphere”:

*A key to improving milkweed establishment in restoration may be to utilize the milkweed microbiome including arbuscular mycorrhizal (AM) fungi.*

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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/>



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While the authors agreed that more research is necessary to better understand and optimize this beneficial symbiosis, they concluded:

*Overall, we identify that re-establishment of milkweeds of high conservation value can be improved by inoculation with native mycorrhizal fungi.*<sup>6</sup>

## The Right Mix

According to Dr. Fred T. Davies, Jr., Texas A&M Horticulture professor: *Glomus* is a recommended mycorrhizal genus.<sup>7</sup> As an example, four *Glomus* species are included in the MycoApply Ultrafine Endo mix widely available online.<sup>8</sup> I have been using this with noticeable success. There are endo/ecto mixes that cost more, to be used when growing woody perennials or to ensure your shade trees and shrubs are inoculated.<sup>9</sup>

MycoApply recommends adding one pound of their mycorrhizal mix to one cubic yard of soil. This translates to 10 grams in the following peat-lite mix I use in my home growing operation (about 16 quarts total).

## Indoor Grow Mix based upon Cornell Mix

- 8 quarts sphagnum peat
- 5 quarts coarse vermiculite (“Coarse” at Greenhouse Megastore)
- 3 quarts coarse perlite
- 52 grams ground limestone
- 56 grams Blood Meal (14-0-0)
- 29 grams Bone Meal (1-25-0)
- 43 grams dry MaxiCrop powder (0-0-17) or 15 grams potassium sulfate (generally around 0-0-50)
- 52 grams greensand
- 10 grams mycorrhizae

If you don’t want to mix your own, commercial mixes are available for your convenience. For example, Ms. Clark mentioned that milkweeds grown in Pro-mix BX Mycorrhizae “get bigger and bushier in a hurry.”<sup>10</sup>

Two final benefits: First, planting mycorrhizae-inoculated plants into organically managed soils enables mycorrhizae to continue colonizing with existing plants, further producing living, healthy soil that benefits your entire garden and landscape. Second, introducing native mycorrhizae like those in the *Glomus* genus are best, because natives have coevolved here and already know how to interact with each other to produce the healthiest soil environment possible for this climate.

## Endnotes

<sup>1</sup> Clark, Carol . “Planting for Monarchs.” Native Plant Society of Texas Hill Country Chapter, August 15, 2022. Accessed August 19, 2022. <https://www.youtube.com/watch?v=rU-2y6cUuTk&list=PLiz709cmMnPXaJeZvUdJ2b3YK4ppXLWyN&index=5>

<sup>2</sup> “Symbiont.” Biology Online. Accessed August 18, 2022. <https://www.biologyonline.com/dictionary/symbiont>

<sup>3</sup> Davies, Fred T.. Mycorrhizal Effects on Host Plant Physiology. Texas A&M University. Accessed March 2, 2020. <https://aggie-horticulture.tamu.edu/faculty/davies/research/mycorrhizae.html>



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<sup>4</sup> Dunn, Bruce et al. “Mycorrhizal Fungi.” Oklahoma State University Extension, April 2017. Accessed August 18, 2022. <https://extension.okstate.edu/fact-sheets/mycorrhizal-fungi.html>

<sup>5</sup> “Mycorrhizal Status of Plant Families and Genera.” Mycorrhizal Applications, version 1.6, June 9, 2020. Accessed August 18, 2022. <https://mycorrhizae.com/wp-content/uploads/2017/03/Mycorrhizal-Status-of-Families-and-Genera-v1.6.pdf>

<sup>6</sup> Schultz, Peggy A. et al. “Native mycorrhizal fungi improve milkweed growth, latex, and establishment while some commercial fungi may inhibit them.” *Ecosphere*, May 26, 2022. Accessed August 18, 2022. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.4052>

Davies, <sup>7</sup> Fred T.. “Mycorrhizal Effects on Host Plant Physiology.” Texas A&M University. Accessed August 19, 2022. <https://aggie-horticulture.tamu.edu/faculty/davies/research/mycorrhizae.html>

<sup>8</sup> “MycoApply Ultrafine Endo 20 lb Bag.” Mycorrhizalonline.com. Accessed August 19, 2022. <https://www.mycorrhizalonline.com/product-page/ultrafine-endo>

<sup>9</sup> “MycoApply Ultrafine Endo Ecto Mycorrhizae.” AM Leonard. Accessed August 19, 2022. <https://www.amleo.com/mycoapply-ultrafine-endo-ecto-mycorrhizae/p/UEE1>

<sup>10</sup> “Pro-Mix BX.” Premier Tech. Accessed August 19, 2022. <https://www.pthorticulture.com/en/products/pro-mix-bx/>

# Why It’s Good to Leave Aphids Alone

By Howard Nemerov

Milkweeds (*Asclepias curassavica* on right) attract Oleander Aphids and can handle loads that would injure other plants. I didn’t treat because the focus was attracting Lady Beetles and other aphid predators. In this case, three Lady Beetles—likely *Cycloneda sanguinea*—arrived in a timely manner. If you see brown aphids that appear round and hard, those are “mummies”, aphids attacked by parasitic wasps, another beneficial insect you want in your garden. This is why it’s good to avoid overusing insecticides—even organic ones—which kill the food beneficial insects need, and will kill them as well if sprayed.



## References

Brown, Wizzie. “Oleander Aphid.” Texas A&M Extension Entomology. <https://extensionentomology.tamu.edu/insects/oleander-aphid/>

“Aphid Parasitoids.” University of Maryland Extension. <https://extension.umd.edu/resource/aphid-parasitoids>

“Species *Cycloneda sanguinea* - Spotless Lady Beetle.” Bug Guide. <https://bugguide.net/node/view/8878>

