

What's Growing On?

BASTROP COUNTY MASTER GARDENER ASSOCIATION

April 2023

Cutworms

By Wizzie Brown

Granulate cutworms are damaging in the immature, or larval stage. Cutworms can cut plant seedlings stems off at the soil level and on older plants they can climb the plant and feed on foliage or fruit. Young larvae skeletonize leaves while older larvae eat holes in foliage, feed on the surface of fruit, or burrow into fruit. Larvae are nocturnal, which may make it difficult to discover the culprit of plant damage. You may need to inspect the garden at night when larvae feed.

Eggs are laid singly or in clusters on the upper surface of foliage. Eggs begin white in color, but darken as larvae get close to emerging. Larvae are grayish-red with a brown head and light markings along the side of the body. Larvae start off around ¼” but grow to 1.5” in length. Pupae are in soil and are a dark reddish-brown color. Adults are drab brownish-gray mottled moths with a wingspan around 1.5 inches. The front wings have a bean shaped marking paired with a circular marking.

Granulate cutworms feed on a wide variety of crops including beans, cabbage, peas, celery, watermelon, muskmelon, broccoli, cauliflower, potatoes, lettuce, onions, tomatoes, peppers, spinach, carrots, cucumbers, radish, beets, turnips, and brussels sprouts.

If you have had cutworm problems in previous years, you can till soil before planting to disturb pupae. Plant collars can be used to physically block larvae from clipping new seedlings. Collars

(Continued on page 2)

President's Column

By Lee Pacatte

Ah the adventure of a Central Texas spring! With temperatures ranging from the 30's to the 90's (sometimes with only days in between) and precipitation ranging from nada for days or weeks to a deluge in just hours, spring is always an exciting time here. This spring has not disappointed and has even delighted us with one of THE best wildflower displays in recent memory. It is a challenging but rewarding time of year to be a gardener. Whether you are brand new to gardening, an experienced expert, or somewhere along the path in between, we can all experience the satisfaction of working in the soil, the joy of learning with friends and an abiding appreciation for all-things plants. Yeah, we are the plant people. And proud of it!

The Bastrop County Master Gardeners Association (BCMGA) is 6 years old and thriving. We may be young, but we are mighty. We continue to expand our educational and outreach programs to the public and welcome new members to our fami-

Inside this issue:

Cutworms (continued)	2
President's Column (continued)	2
Burying Marigold stems to enhance growth	3-4
Tropical Sage: Annual Or Perennial?	5-7

(Continued from page 1)



can be made from cut sections of PVC pipe, fruit/ vegetable cans with both ends cut out, or aluminum foil wrapped around stems of seedlings. A key to using plant collars is that they need to be partially buried in the soil and sticking up from the ground to protect the seedling and block larvae. If you are confident that no pupae are in the soil, row cover can be used to keep adult moths from laying eggs on the leaves of host plants. If eggs or egg clusters are spotted on plant foliage, they can be squished or removed from plants.

Chemical treatment may consist of insecticidal soap on smaller larval stages. *Bacillus thuringiensis* (Bt) variety *kurstaki* is a biological product that only targets caterpillars and can help to conserve beneficial predator insects. Another biological product is spinosad which is selectively active on insect pests that feed on foliage. Both Bt and spinosad need to have good coverage on the infested plants as they need to be consumed for them to work. This would also mean that you would need to treat with these products in the evening since cutworm larvae are nocturnal. With any pesticide product, make sure to read and fol-

low all labeled instructions and make sure that it can be used in the area that you plan to treat.

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

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(President's Column, Continued from page 1)

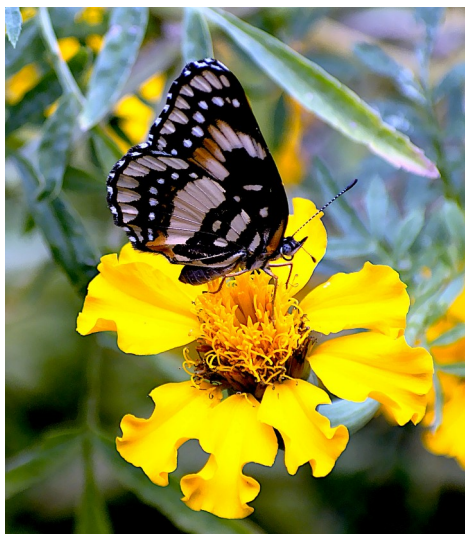
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ly. The spring series of classes is happening now for adults and the popular Lunch and Learns will start up again in late April (had been put on hold during pandemic). We have children's programming in 2 elementary schools and a Boy Scout program this spring. The next intern training class (path to becoming a Master Gardener) will be in August and planning is underway. We have demonstration gardens at Cedar Creek Park, the AgriLife Extension Office, the Animal Shelter, and Bob Bryant Park and requests for more to come online. These are not only educational opportunities for the public, but for members as well, as members assist with upkeep (hands-on learning) and teaching at these sites. We have a new Speaker's Bureau, a seed library project, and a project for downtown planters in partnership with the City of Bastrop. Our Spring Plant Sale was held in March and was a huge success with a record setting 700 community members reached with plants and expertise!

BCMGA has come a long way in a short time, and I believe it is due to the hard work, expertise and care our predecessors put into this fledgling organization. It thrives now, with those strong roots, due to the sustained nurturing (even in challenging pandemic times) of all those who have followed. Thank you to all who have joined, engaged, supported, and cheered us on. BCMGA is working towards not only growing and improving our educational outreach as an extension of the AgriLife Extension program, but to becoming an even more valuable community asset in our home of Bastrop County. Calling all plant people to join in the adventure that is BCMGA!

Bury Your Marigold Stems to Enhance Growth, Heat Tolerance

By Howard Nemerov



Bordered Patch on Crackerjack Marigold Flower

The secret to being a successful gardener is paying attention. Plants tell you when they're happy—or not. An experienced gardener acknowledges teachable moments for the empowering lessons they provide. Marigolds provided one for me.

Marigolds (*Tagetes spp.*) deserve consideration as a regular warm season flower. Marigold flowers attract pollinators, like this Bordered Patch butterfly on *Tagetes erecta* 'Crackerjack,' a variety documented to help control southern root-knot nematode.¹

Last year, I trialed *Tagetes patula* 'Golden Guardian' because many *T. patula* varieties also help control root-knot nematodes.² Golden Guardian is a larger *T. patula* variety, requiring fewer plants a given area. Controlling root-knot nematodes with Marigolds requires planting them as a cover crop; intercropping or companion planting "does not appear to be effective."

The learning experience came from observing Marigold starts with flimsy stems that ended up falling over or even breaking off near the soil line. 'Golden Guardian' never developed strong stems: On the right is a picture of them "laying down on the job." While the initial stem is too weak to hold the plant upright, notice that new growth is upright and healthy. However, performance was more important than visual appeal. I wanted to see if the plants grew lushly and at least a foot in diameter before seed saving and recommending.



Botany: Transpiration and Root Systems

First, a little botany review explains why the rest of this article is relevant. Plant leaves release water into the air (transpiration). This is a good thing, because under normal conditions, this creates a "suction" effect where plant roots draw in water and dissolved nutrients from the soil to replace water lost via transpiration.³ A larger root system means more root hairs permeate a larger soil zone, accessing a greater reservoir of water and nutrients. A larger root system creates a healthier, more heat tolerant plant.

(Continued on page 4)

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.

Seedling Anatomy and Sturdier Marigolds



The key to growing sturdier Marigolds is understanding their anatomy. Marigold seedlings produce a long hypocotyl, the stem between soil and cotyledons.⁴ In the picture on the left is a *Tagetes erecta* ‘Crackerjack’ seedling. Just above the soil is the hypocotyl (blue arrow), then cotyledons (orange arrows), then the epicotyl (yellow arrow) or stem above the cotyledons. True leaves (green arrow), above the epicotyl, are designed to photosynthesize light into energy, producing more vegetative growth and flowers.

It’s important to understand what **adventitious roots** are:

*In plants, roots that form from nonroot tissues are known as adventitious roots. This general definition distinguishes adventitious roots from primary and lateral roots.*⁵

Examining a start more closely shows little white bumps on both hypocotyl and epicotyl. These are nascent adventitious roots; Marigold starts could be planted deeper than the start’s soil level, while keeping the first true leaves exposed. Adventitious roots at the base of the hypocotyl (blue arrows) are close enough to the soil that they grew out and are now part of the root system, helping anchor the stem to keep it upright as it grows taller. Digging a deeper hole to bury more of this stem means you end up with a shorter, stockier plant with a larger root system, which enhances drought and heat tolerance.

Because I “buried” seedlings one to two inches deeper than their original soil surface this year, I have upright ‘Golden Guardian’ Marigolds. Lesson learned.



Endnotes

¹ R. Krueger, KE Dover, R McSorley, KH Wang. “Marigolds (*Tagetes* spp.) for Nematode Management.” University of Florida Extension, November 2019. Accessed August 18, 2021. <https://edis.ifas.ufl.edu/publication/NG045>

² SP Marahatta, K.H. Wang, BS Sipes, and CRR Hooks. “Effects of *Tagetes patula* on Active and Inactive Stages of Root-Knot Nematodes.” *The Journal of Nematology*, March 2012; 44(1): 26–30. Accessed August 18, 2021. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3593261/pdf/26.pdf>

³ “Transpiration – What and Why?” Plant & Soil Sciences eLibrary, University of Nebraska-Lincoln. Accessed August 23, 2021. <https://passel2.unl.edu/view/lesson/c242ac4fbaaf/3>

⁴ Stivers, Lee and Dupont, Tianna. “Seed and Seedling Biology.” PennState Extension, August 28, 2012. Accessed August 18, 2021. <https://extension.psu.edu/seed-and-seedling-biology>

⁵ Bianca Steffens and Amanda Rasmussen. “The Physiology of Adventitious Roots.” *Plant Physiology*, Volume 170, Issue 2, February 2016, Pages 603–617. Accessed August 22, 2021. <https://academic.oup.com/plphys/article/170/2/603/6114063>

Tropical Sage: Annual or Perennial?

By Howard Nemerov



Will Bastrop native *Salvia coccinea*—commonly called Scarlet Sage or Tropical Sage—provide you one summer of color, or will it return next year to become a low-maintenance pollinator plant that draws hummingbirds? That may depend upon some easy cultural practices you can institute with minimal investment.

Lady Bird Johnson Wildflower Center notes that it may act like an annual or perennial in your garden.¹ Local seed retailer Wildseed Farms concurs, calling it a “hardy annual or tender perennial.”²

“Tender perennial” means “a perennial (usually herbaceous) plant that will not overwinter in the garden because it’s too cold.”³ Of course, “cold” is relative: I’ve heard people here tell me it’s “cold” when temperatures drop into the 40s; but being from Minnesota I consider it refreshing. Plants consider it “too cold” by dying during a freeze, but therein lies vagary. When there’s a light frost in spring a true native annual like *Verbesina encelioides* (Cowpen Daisy) responds with freeze damage, so a light frost is “too cold” for it.



I’ve left *Salvia coccinea* outside during light freezes in nursery containers with no visible damage, exhibiting some inherent cold tolerance. According to the LCRA Bastrop weather station, it reached 30.3°F with at least three hours below freezing one night, yet these plants continued blooming.

I didn’t start *Salvia coccinea* seed until January 2021, indoors of course. That was before LCRA recorded Bastrop lows of 9° and 6° on February 15th and 16th, respectively. But my plants survived as root-hardy perennials, experiencing low 20s in early 2022 and last December’s sudden cold snap with three consecutive nights below 20°, including a low of 15.7° on December 23. On the left is a recent photo of a plant emerging in the backyard; the right shows a plant in the front walkway, both taken in late February 2023.



Understanding cold hardiness zones

The 2021 freeze was exceptional: Bastrop is officially in USDA Plant Hardiness Zone 8B, so a minimum of 15° is considered normal for Bastrop, which these salvias survived.⁴ It’s reasonable to assume at this time that *Salvia coccinea* is an herbaceous perennial in Bastrop, likely transitioning to tender perennial or annual in colder zones.

I would add one caveat highlighted in both pictures above: Maintain mulch around these plants, espe-

(Continued on page 6)

cially during winter; extra insulation can mean the difference between roots surviving or not. A layer of fall leaves covered by wood chips also provides enough nutrients and organic matter to keep *Salvia coccinea* thriving.⁵

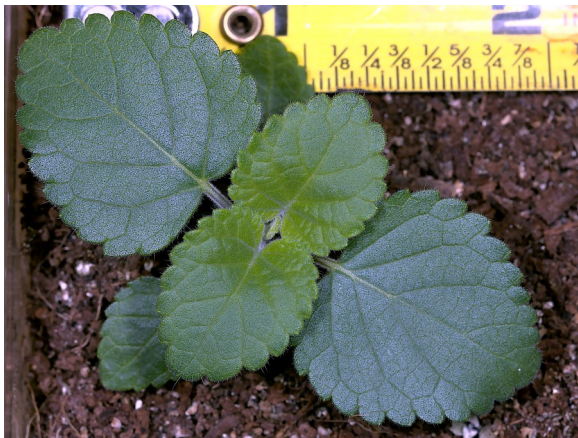
Seed saving and starting



When seed heads mature, its red flowers turn dry and brown. Bend carefully and shake it into a broad container like a one-pound spinach tub. You'll see tiny brownish-black seeds like those on the right. Place on a plate and let air dry for a week or so. Seeds often need to dry out before they can break dormancy and sprout. This is another survival mechanism telling seeds that cool, wet winter is over and warmer, drier days approach when it's ideal to sprout and grow.

If *Salvia coccinea* likes your microclimate, it will reseed itself. For seedlings like the

one on the left, carefully dig with a hand trowel and immediately pot up into a start pot or quart container with a quality potting mix, and keep in full shade until it puts on new growth. In this way, even if *Salvia coccinea* performs as an annual in your garden, it will still return each year.



Compared to annual flowers like Zinnias, which germinate outside or indoors when temperatures reach the 70s, many native plants need special treatment to germinate. *Salvia coccinea* seed surpasses 50% germination rates at 72° on my indoor plant stand with no special treatment. Another option is to sow a flat outside in a protected area like a covered porch beginning in late January or early February, after threat of hard freeze has passed (bring it in for the night if a late freeze happens). A flat set outside on our covered deck had a germination rate over 60%; I placed the flat under lights indoors once seedlings began emerging. Some native seeds respond well to nights in the 40s with days reaching 70°

F, Nature's way of telling them, "Spring is coming so get going."⁶ In any case, I cover seedling flats and keep the starting mix moist but not soggy to encourage germination.

Care and culture

Salvia coccinea is one of a short list of natives that flowers well in shade. It's xeric, meaning that once established it should only need supplemental water during extended drought. It reaches about two feet tall and wide when mature, making it versatile enough to border a walkway, produce a wave of color when mass-planted, or be a focus-point in a low-growing mixed bed. It has extended spring and fall flower seasons, continuing through summer in milder years.

Conclusion

As with any hardy plant, it's best to provide extra water and care the first year until established. This means working in compost before planting, and irrigating during drought to avoid heat stress and wilting. Once established, maintain your mulch layer and *Salvia coccinea* provides years of cheery red blooms, enticing hummingbirds and other pollinators to make your garden a destination.

Endnotes

¹ “*Salvia coccinea*.” Lady Bird Johnson Wildflower Center. Accessed February 26, 2023. https://www.wildflower.org/plants/result.php?id_plant=SACO5

² “Scarlet Sage.” Wildseed Farms. Accessed February 26, 2023. <https://www.wildseedfarms.com/products/scarlet-sage/>

³ Cameron, Art; Fausey, Beth; Whitman, Cathy; Runkle, Erik. “Tender Perennials.” Greenhouse Production News, June 2004. Accessed February 26, 2023.

⁴ “USDA Plant Hardiness Zone Map.” USDA Agricultural Research Service. Accessed February 26, 2023. <https://planthardiness.ars.usda.gov/>

⁵ Nemerov, Howard. “Does Wood Chip Mulch ‘Steal’ Soil Nitrogen?” What’s Growing On? February 2021, pages 3–6. Accessed February 26, 2023. <https://txmg.org/bastropcounty/files/2021/02/02-Feb.pdf>

⁶ Nemerov, Howard. “Seed Starting at Home.” What’s Growing On? Pages 4–7. Accessed March 24, 2023. <https://txmg.org/bastropcounty/files/2020/12/12-Dec.pdf>



(Continued from page 6)

(Continued on page 8)

(Continued from page 7)