

Widow Spiders

By Wizzie Brown

Widow spiders are in the genus *Latrodectus*, meaning “biting in secret”. Four species of widow spiders can be found in various parts of Texas. To properly identify three of them to species, one would need to dissect the spider and look at the genitalia. We can somewhat narrow down what type of widow spider based upon location and shape of markings on the spider.

Southern widows – *Latrodectus mactans*, western widows – *Latrodectus hesperus*, and northern widows – *Latrodectus variolus*, all look remarkably similar to each other while the brown widow – *Latrodectus geometricus*, is easy to discern from the other widows in the state. Brown widow spiders are not native to Texas and originate in Africa. They have naturalized and can be found in various parts of the state.



Female brown widows can vary in color from light brown to gray with a reddish-orange hourglass on the underside of the abdomen. Lighter colored females may also have white markings on the upper side of the abdomen. Legs are alternating bands of black/ dark brown and light brown.

Southern widows, western widows, and northern widows tend to be dark grey to black in color. Northern widows may completely lack an hour-

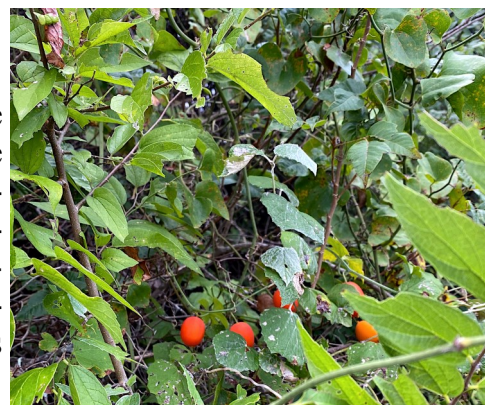
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Is It Poison Ivy?

By Carolyn Turman

Many harmless and beneficial plants are commonly mistaken for *Toxicodendron radicans* (Poison Ivy). At the same time, contact with poison ivy can cause a very painful rash. In this picture, the poison ivy is hiding among the other plants.

Can you find it?



The plants in the photo include *Ibervillea lindheimeri*, snake-apple in the lower center; branches from a *Celtis occidentalis* (Hackberry tree)

on the left side and bottom right; *Smilax bonanox*, (Greenbrier) in the top right, and *Toxicodendron radicans* (Poison Ivy) just below the Greenbrier. For more information on these plants check out the plant database at wildflower.org.

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glass or may have two red lines in place of an hourglass. Southern and western widows have an hourglass or two triangles on the underside of the abdomen. Western widows may have the back triangle somewhat larger than the front. All three of these widows may have a reddish-orange spot on top of the abdomen just above the spinnerets. Nevertheless, widow spider coloration can vary wildly.



Southern widows tend to be the most found widow spider in most parts of Texas. Western widows displace them in the western part of Texas and down into the Valley. Northern widows tend to reside in the eastern parts of Texas while brown widows are variable and we are still tracking where they are found. You can report sightings of brown widow spiders here:

<https://civr.ucr.edu/texas-brown-widow-study>

Juvenile widow spiders have a gray to black abdomen with white stripes and yellow and orange spots. Adult males may be completely black or have coloration similar to juveniles. They do not have an hourglass marking like the adult females, but often have markings on the upper side of the abdomen.

Females lay eggs in a round or teardrop shaped sac which can hold around 200-400 eggs. A single female can lay between 4-9 egg sacs in a year. Depending on temperature and time of year, eggs usually hatch after about 20 days. Spiderlings stay near the egg sac for several days



where they consume their brothers and sisters. Survivors throw a thread of silk to the wind and are carried off in a process called “ballooning.” They eventually locate a sheltered spot where they

build a loosely woven web and remain for the rest of their lives. As time progresses, widows build larger webs to capture larger prey. Males eventually leave their webs to find females for mating. In a natural setting, most females do not eat males after mating.

Widow spiders do not like being in the open. They can often be found outside in protected areas such as rainspouts, shrubbery, firewood piles or unused grills or BBQ pits. It is also possible to find them in garages, cellars, crawl spaces, attics, furniture, or electric or water meter boxes. Widows are shy creatures and often people are bitten when they accidentally disturb a web.

The bite of a black widow sometimes is not noticed, but when it is, it often feels like a pin prick. The bite location will have two red marks surrounded by redness and swelling. The bite reaction is systemic and intense pain usually occurs within 1-3 hours and continues for around 24 hours. Other symptoms include tremors, nausea, vomiting, leg cramps, abdominal pain, profuse perspiration and rise in blood pressure. It is also possible for breathing difficulties and unconsciousness to occur. If bitten by a black widow, immediately seek medical attention.

When working around the house or in the yard, it is best to wear leather gloves to avoid being bitten by venomous arthropods. The easiest way to remove widow spiders is with a vacuum. Make sure to shake out shoes, clothing and linens that have been in storage.

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

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A friend and I were examining the snake apple (not poisonous and not edible) and she had to seek medical attention for a severe reaction from the poison ivy.

Try matching the following names to the photos below (A–E).

- _____ Acer negundo, Boxelder maple,
- _____ Rubus sp., Dewberry
- _____ Parthenocissus quinquefolia, Virginia creeper
- _____ Toxicodendron radicans, Poison ivy
- _____ Rhus trilobata, Aromatic sumac



(Photo by Kathy Cox, Lost Pines Master Naturalist)

(A)

(B)

(C)

(D)

(E)

Following are the answers and information about poison ivy and these look alike plants.

(A) *Rhus trilobata*, **Aromatic Sumac** is a deciduous shrub with 3 leaves. Leaves and twigs are aromatic when bruised. This native plant provides food and habitat for many gamebirds, songbirds, and large and small mammals.

(B) *Acer negundo*, **Boxelder maple** seedlings resemble poison ivy, with three leaflets, but boxelder seedlings grow to become leaves with three to seven leaflets. Also, boxelder leaflets are arranged on the stem opposite from each other, not alternatively like poison ivy. Boxelder has yellow fall color, lacks the hairy aerial rootlets of poison ivy and does not have berries. These trees help to shelter wildlife and stabilize stream banks.

(C) *Toxicodendron radicans*, **Poison Ivy** is a perennial shrub or vine with alternate leaf arrangement, 3 leaves, red stem, and beautiful fall foliage and no thorns. It hides around other plants along roadsides and hiking paths. The oil, urushiol, is in the leaves, stems and roots of poison ivy. Wash your skin right away if you come into contact with this plant. Washing off the oil may reduce your chances of getting a poison ivy rash. A rhyme to remember is “Leaves of three, let it be.”

(D) **Rubus sp.** including Dewberries, Blackberries, and Raspberries usually have woody stems with prickles like roses; spines, bristles, and gland-tipped hairs. Besides berries for pies and jam, they provide nectar, fruit for birds, nesting material and structure for native bees.

(E) *Parthenocissus quinquefolia*, **Virginia creeper ivy** is a well-known poison ivy look-alike. While both plants are vines, they can be distinguished by their leaves. Poison ivy has three leaflets while Virginia creeper has five, occasionally 3 or 7. Virginia creeper vines are thick like poison ivy vines, but will be covered in light-colored tendrils rather than rough hair. The berries of a Virginia creeper are blue-black, not opaque white or yellowish like poison ivy berries.

For more information check out the plant database on wildflower.org.



Seed Starting at Home

By Howard Nemerov

This week—it's still November as I write this—I made a spring seed-starting list, including vegetables, bedding plants, and native annuals, milkweeds, and grasses. Comparing this list to 2019's seed starting spreadsheet, I realized that mid-December to early January seed starting brings April flowers. (Those of you from up north: May is way too late here to plant a spring garden).

Last December, I wrote an article on growing your own tomato starts, which included basic seed starting tips.¹ Its directions serve here for those wanting to build their own indoor seed-starting system. This article focuses on germination and how to improve success rates.

I recommend you download [Norman C. Deno's book "Seed Germination Theory and Practice"](#) which is freely available at the National Agriculture Library of the United States Department of Agriculture.² Deno collated germination tests from numerous genera, seeking to codify best practices for a given species. There are two supplements covering additional genera, also available from the National Agriculture Library.³

Different seeds have different requirements in order to germinate. Seed starting is a process of substituting science for nature, giving seed what it needs to break dormancy and start growing. As Deno notes on his title page:

Every species has some mechanism for delaying germination until after the seed has been dispersed. The Science of Seed Germination is the discovery and description of such mechanisms and the development of procedures for removing them so that the seeds can germinate.

The first 80 pages of his book describes these mechanisms and how to manually address them. To make sense of the rest of the book—and the supplements—you need to understand basic germination procedures to benefit from reading about starting seeds for each species. *The text looks ugly—it's a low-budget electronic reproduction—but is searchable.*

There are three main germination mechanisms, and the procedures for mimicking them are easy to learn. The following section defines these mechanisms, and the last section contains examples, along with data analysis from my own experiments.

Seed Germination Strategies

Deno notes that “temperature is a major variable in seed germination.”⁴ Most seeds broke dormancy at “either 40 or 70 [degrees] but not both.”⁵ The other critical issue is time. These seeds need to be stored in dry conditions for three months at either 40° or 70°, depending on genetic requirements. As Deno notes: “All seeds are ultimately killed if dry storage is continued long enough.”⁶ Seeds that need dry storage at 70° are what Deno calls “D-70 germinators.”⁷ Refrigerating or freezing may preserve viability for longer periods after the drying period.⁸

Some varieties need oscillating temperatures, varying from 40° at night to 70° during the day.⁹ While you could create an indoor system mimicking what Nature provides, it's practical to start these seeds outdoors in January to February here in Bastrop County.

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Some species require a period of 40° while also being moist, then placed in 70° conditions to finish breaking dormancy. Deno calls both types “40-70 germinators.”¹⁰

There’s a twist on this two-temperature process that Deno calls “70-40 germinators,” where “germination inhibitors have been destroyed at 70, but germination occurs only at 40...”¹¹ In those rare cases where you’ve failed with the three procedures discussed here, you could try removing a flat of stubborn seeds from your growing stand and placing it on a refrigerator shelf—if your spouse/partner will tolerate “dirt” in the fridge. (I save plastic greens containers to use as seedling flats, discussed in the tomato article, and would attach their plastic cover to reduce domestic strife.)

D-70 Germinators

These are the simplest seeds to start: place at the appropriate depth in your starting medium and add water. Examples include most annual flowers and vegetables. I refrigerate my AlleyKatz paste tomato seeds until next year’s starting time in early January. Four samples since 2019 produced a 94% germination rate.

Tithonia rotundifolia (Mexican Sunflower) provides nectar all season, drawing an extensive variety of native bees and butterflies, as well as Monarchs and honeybees (see picture below). Like AlleyKatz, saved seed remains in the fridge until planting time. Four samples produced 71% germination.

Annual herbs are another example of a D-70 germinator. Four samples of Genovese Basil from Seed Savers Exchange produced 62% germination; two samples of my first accession saved from the original line have produced 43% germination. It may be that they needed more dormancy time, since I started them right after harvesting. More testing will tell if storing them until next spring increases viability.



Honeybee on approach to *Tithonia rotundifolia*.

Under the same conditions, two samples of a commercial Zinnia variety from an online source—California Giant—produced 98% germination. Another three samples of California Giants, purchased off the rack at a big box store, produced 51% germination. This reflects what Deno discussed about seeds needing 70° dry storage to be viable, but begin dying if stored too long. This makes a case for buying from reputable seed retailers, who manage and turn over stock to avoid selling poor-quality seed.

Native Bluebonnets fall under this category, with a variation. I have attained over 60% germination planting *Lupinus subcarnosus* (Sandyland Bluebonnet), and over 79% with *Lupinus texensis* (Texas Bluebonnet). Both were removed from refrigerator storage, set into moist starting medium, and placed on my growing stand. The “catch” is seeds got *scarified* before planting (no, it has nothing to do with Halloween).

Lady Bird Johnson Wildflower Center explains the scarification process:

To increase bluebonnet germination rate, scarify the seeds. Scarification means scratching or nicking the seed coats to simulate natural weathering processes. Once scarified, most

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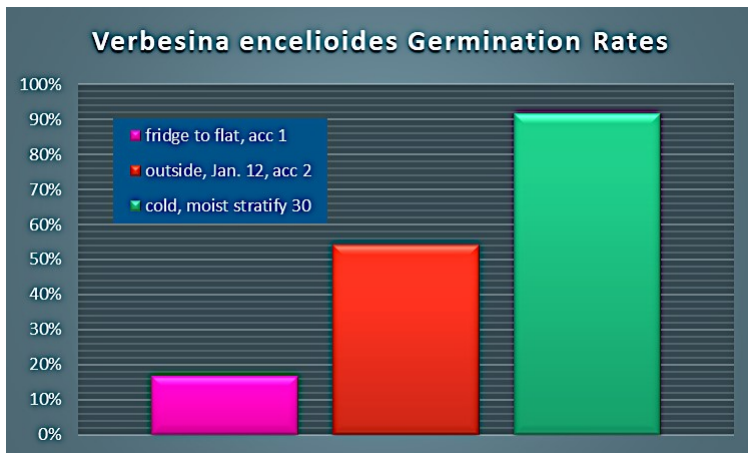
*seeds will germinate quickly and should be watered for several weeks, especially if the weather is dry.*¹²

Following one of Lady Bird’s suggested methods, I rubbed the edge of each seed on fine sandpaper, just enough to lighten the color, then planted.

40-70 Germinators

Other species insist on moist, cold germination. Native Milkweeds (*Asclepias* species) are a prime example. The same is true of *Echinacea* species. Past germination tests showed near 0% germination if I plant them in flats on my growing stand. To attain over 50% germination, both genera need what’s often called “moist stratification.” It’s not a complicated procedure. Lady Bird Johnson Wildflower Center has a one-page explanation of various approaches.¹³ My standard is folding seeds in moist paper towels, wringing out excess, placing in a plastic bag, and storing in a refrigerator drawer for 30 days. Lady Bird discusses using a container filled with vermiculite or similar medium, and placing starting flats in the refrigerator.

Verbesina encelioides (Cowpen Daisy) is an example of how native annuals differ from commercial annuals like Zinnias. Since 2019, four samples produced a 54% germination rate, but deeper examination shows a preference for moist, cold treatment. One sample received moist, cold stratification for 30 days, achieving 92% germination. I placed two other samples outside on the covered deck on January 12, 2020: Both samples attained 54% germination. If your refrigerator is off-limits to science experiments, late winter germination outside is a satisfactory alternative, providing enough moist, cold to break dormancy, assuming you keep the starting medium properly moist.



Verbesina encelioides seedling, 11 days from germination.

Some native grasses show a preference for moist, cold stratification, too. *Bothriochloa laguroides* ssp. *Torreyana* (Silver Beard Grass) germinated at 8% when treated like a D-70 (fridge to flat under lights). Winter starting outdoors (40-70 germination) pro-

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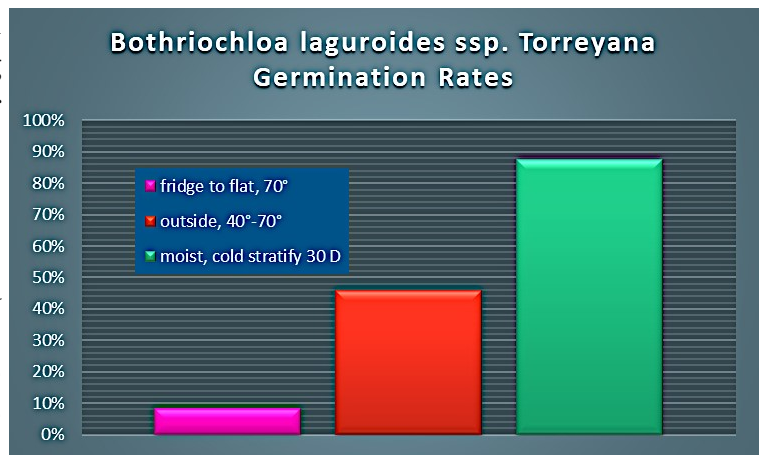
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duced 46% germination, a viable alternative with similar results to *Verbesina encelioides*. Stratifying in a moist paper towel for 30 days in the refrigerator produced 88% germination.

Some natives prefer outdoor 40-70 germination, which best mimics Nature. Two samples of *Engelmannia peristenia* (Engelmann’s Daisy) produced 2% germination under moist, cold stratification. Treating three samples as a D-70 (fridge to flat) resulted in 15% germination. One sample placed outside in January produced 21% germination. If you haven’t a growing system, this is a good choice: Just place outside in a flat of moist medium, and seedlings should begin emerging in about 10 days.



Engelmannia peristenia seedling, 14 days from germination.

Endnotes

1. Nemerov, Howard. “Tomato Growing at Home: From Seed to Harvest.” Bastrop County Master Gardeners Association Newsletter “What’s Growing On?” December 2019. Accessed November 20, 2020. <https://txmg-wpengine.netdna-ssl.com/bastropcounty/files/2019/12/2019-12-Newsletter-1hn-1.pdf>
2. Norman C. Deno. *Seed Germination Theory and Practice*, June 1, 1993. Accessed November 20, 2020. <https://naldc.nal.usda.gov/download/41278/PDF>
3. Norman C. Deno, *First Supplement to the Second Edition of Seed Germination Theory and Practice*, March 1, 1996. Accessed November 20, 2020. <https://naldc.nal.usda.gov/download/41279/PDF>
4. Norman C. Deno, *Second Supplement to the Second Edition of Seed Germination Theory and Practice*, January 1, 1998. Accessed November 20, 2020
5. Ibid.
6. Ibid, page 10.
7. Ibid.
8. “How to Save Seeds.” Seed Savers Exchange. Accessed November 22, 2020.

<https://www.seedsavers.org/how-to-save-seeds>

9. Norman C. Deno. *Seed Germination Theory and Practice*, pp 41–42.

10. Ibid, pp 24–26.

11. Ibid, page 25.

12. “How to Grow Texas Bluebonnets.” Lady Bird Johnson Wildflower Center. Accessed November 21, 2020. <https://www.wildflower.org/learn/how-to-grow-bluebonnets>

13. “Ask Mr. Smarty Plants.” Moist, cold stratification. Lady Bird Johnson Wildflower Center, September 7, 2010. Accessed November 20, 2020. <https://www.wildflower.org/expert/show.php?id=6154>



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