



**By growing  
milkweeds,  
you can help  
the monarch  
butterfly  
and other  
important  
pollinators**

**BY NORMAN MURRAY**

# HOMEGROWN MILKWEEDS

**R**ecent concern for declining monarch populations due to habitat loss — both here and on their wintering grounds in Mexico — has generated much interest in growing milkweeds, the primary plant on which monarch butterflies lay their eggs. Once the larvae hatch from the eggs, they only eat milkweed and a closely related vine, making these native plants quite popular. However, the benefits of planting milkweeds extend well beyond simply providing leaves for monarch caterpillars to eat.

Milkweeds provide resources for many species. Their flowers are visited by a constant trail of nectar-feeders and are often covered with a host of butterflies. With 18 species of milkweed native to Missouri, they have adapted to most habitats in the state — from wetlands to glades — so finding one to suit your local conditions is fairly easy. While some milkweeds look nondescript, all provide valuable nectar to many species and serve as hosts to monarch larvae. And many are finally being recognized for their ornamental qualities in landscaping.

Growing milkweeds from seed is not as simple as planting many of the more familiar annuals. Milkweeds do not rapidly grow from seed and flower in the same year like annuals. Rather, they are perennials that live for decades, so expectations for their first blooming vary. They have different requirements for their seeds to germinate and plants to become established, which make them a bit more challenging. Since harvesting the seed is labor-intensive, it is expensive. Simply throwing seeds into a flower bed or grassy habitat is likely to result in disappointment and wasted money. However, milkweeds can be established from seed if you follow some basic rules.

### Germinating Native Seeds

#### *Wake Up Call*

Most native wildflower seeds are dormant when they fall from the seed head, usually in late summer or fall. If they are stored in a warm, dry environment, like your house, and planted in the spring, they will remain dormant and fail to germinate. Instead, native plant seeds require a period of 30 to 60 days, depending on the species, of cold, damp contact with soil to stratify or “awaken” so they will germinate.



Plume moth on butterflyweed

### Pollinators

Many species other than monarchs will use your milkweeds, especially while they are flowering. Their abundant nectar supplies attract great varieties of insects, including bumblebees, sweat bees, plume moths, clearwing moths, wasps, butterflies, and skippers. These pollinators in turn attract visits by predatory insects, spiders, and birds attracted by the draw of an easy meal.

Unlike many flowers, milkweeds' pollen isn't easily accessible to insects. Rather, their pollen is held in unique bola-shaped structures — two pouches on the ends of a filament — hidden in narrow slits. When an insect's leg slips into these structures, the pouches wrap around the leg and pollen gets pulled out as the insect struggles to free its leg. Interestingly, these flowers are so strong that occasionally insects are trapped when they are not strong enough to pull their leg free.



Bumblebee on butterflyweed



Monarch butterfly

PLUME MOTH AND BUMBLEBEE: NORMAN MURRAY; MONARCH BUTTERFLY: NOPPADOL PAOTHONG

## Planting Seeds Directly in Soil

### Bare Soil

For new plantings, site preparation is imperative. This means providing weed-free bare soil. This may require multiple applications of herbicide to ensure tough perennial vegetation is killed, allowing germination of native seeds to occur. If you plan to sow seed into an existing flower bed or large planting, you need to treat the area with extensive weeding, raking, or a fall prescribed burn so bare ground is available and the seed has a chance to germinate.

Broadcast the seeds onto the soil surface during the winter — January and February are prime months. Aim for about 24 seeds per square foot. This is far more milkweeds than are likely to grow, but the extra seed helps guarantee success. Tossing seed on top of snow is also a good technique, as the contrast with the white snow allows you to see where you're planting and the melting snow seats the seed into the soil. If planting a mix that includes small seeds, you may want to blend it with sand or potash fertilizer to add bulk as a carrier to evenly distribute the seed, so it does not blow away as easily.

### Press Down

To ensure germination, press the seed into the soil. In small spaces, simply walk around and press the seed in with your feet. For larger areas, drive over the planting with a lawn tractor with wide tires or pull a lawn roller or cultipacker over the area.

### Sunlight

Select your location carefully to allow young plants at least six hours of sunlight each day. During the first growing season, young plants need full sunlight to grow strong. In flower beds, learn to identify the seedlings and keep beds weeded to allow seedlings to grow. In larger plantings where weeding is impractical, mow them periodically to maintain them at about 6 inches

Of the 18 species of milkweed native to Missouri, seven are commonly available commercially and are frequently used in landscaping. These more readily available species are common, Sullivant's, whorled, swamp, butterflyweed, purple, and spider (or green) milkweeds.

**Common and Sullivant's milkweeds** are somewhat similar, having fragrant, pinkish flower clusters, growing 3 to 4 feet high, and developing colonies from underground stems. Sullivant's milkweed likes wetter soils than common milkweed and both do best in full sun.

**Whorled milkweed** also spreads with underground stems but is a much smaller plant, only growing 1 to 2 feet in height. It has very narrow leaves that surround the stem and greenish-white, fragrant flowers. It enjoys dry or average soils and full sun or partial shade.

**Swamp milkweed** prefers wet soils, but will grow in average soils. It's shorter-lived than other milkweeds. This species has large displays of pink flower clusters, grows to 3 or 4 feet in height, and prefers full sun.

**Butterflyweed** grows in average to dry soils and produces bright shows of orange to red flower clusters, growing about 2 feet in height. It does best in full sun.

**Purple milkweed** grows best in light shade and produces rich purple flower clusters. It grows about 3 feet high in dry to average soils.

**Spider, or green, milkweed** has the largest flowers of Missouri's milkweed species, with greenish outer parts and purple centers. It grows 1 to 2 feet tall under full sun in dry or rocky soils.

Other species may be propagated and used by skilled gardeners who appreciate what these species add to their plantings.



Common milkweed



Sullivant's milkweed



Spider (green) milkweed



Whorled milkweed



Swamp milkweed



Butterflyweed



Purple milkweed

in height. Even if you cut some of the milkweeds' leaves, ensuring that the remaining vegetation receives sunlight is worth sacrificing some plant height to avoid shade cast from taller annual weeds like ragweed, fox-tail, and horseweed.

### Patience

Many native wildflower seedlings are destroyed due to lack of patience and misunderstanding. Remember, these plants are investing in long-term survival, not a rapid flush of growth and flowering just to make seed and die like annuals. It's not unusual for native forb seedlings to grow a few inches above ground, as well as over a foot below ground, in their first year. I once

germinated a compassplant that grew 12 inches above ground and over 3 feet of root length in only three months after germination.

Learn to identify your seedlings and give them time. Once established, they will provide you and pollinators with flowers for decades to come. If you need some flowering in the first year, include some quick-blooming species like lance-leaf coreopsis. Recognizing seedlings can be tricky, so use this guide to identify young native forb seedlings: [1.usa.gov/1LxHDv5](https://www.usda.gov/1LxHDv5).

### Germinating Seeds in Pots

Germinating milkweeds and other native wildflowers in pots for transplanting is a good alternative to planting

directly in the ground. Planting valuable seed into pots can result in literally dozens or hundreds of plants. Some species are especially difficult to establish in plantings and require special seed treatments, so growing them in pots for transplanting is a better strategy for increasing diversity of restorations. Plants grown in pots can establish quicker than the same species germinated in the ground. Transplants will often flower years earlier, too.

Plants started in pots can be transplanted easily into existing flower beds or habitats. These plants will have a higher chance of survival than simply broadcasting seed into the vegetation and hoping that a seedling survives. Transplanting in the fall seems to increase the survival of the young plants.



January and February are prime months to start your own milkweed plants from seed. To germinate seeds in pots, sow the seeds on the surface of the soil.



Swamp milkweed seeds



Sprinkle ¼-inch of soil on top of seeds and press firmly. Place the pot outside in an exposed, sunny location. Seeds need to be in cold, damp soil 30–60 days for them to germinate. Wait to transplant until plants have at least two to three sets of true leaves.

### Choosing a Pot

The size of the pot doesn't matter, though smaller containers require frequent watering. Larger, deeper pots will allow plants to develop deeper roots, which may make transplanting more difficult. I find that recycling half-gallon and 1-gallon landscaping pots works very well and will grow several plants per pot.

### Planting in Pots

Regardless of your container size, the process of planting is similar:

- » Plant any time between November and the end of March (January and February are best).
- » Ensure your potting soil is damp and sterile, so you won't have weeds.
- » Fill your container with potting soil and drop the pot a few times on a hard surface until the soil is firmly settled in. Refill as needed so soil is just below the rim of the pot.
- » Sow the seed on the surface of the soil. Aim for sowing about one viable seed per square inch. Viable

seeds will have a germ — or a raised lump in the center of the seed surrounded by a wing — as opposed to empty seeds, which are flat. Sprinkle ¼-inch of soil onto the seeds and press firmly or drop the pot again to settle.

- » Place the pot in an exposed, sunny location to allow snow, ice, and rain to awaken the seeds.

### Thinning

Your seeds will germinate in spring. Keep the pots in a sunny location and water them as needed to maintain moist soil, but don't overwater. If plants are crowded when they pop up, thin them out or carefully transplant them to other pots or into the ground, but wait until they have at least two to three sets of true leaves, or those that grow after the seed leaves.

The potted seedlings are very hardy and can grow for some time in the pots. In fact, if the pot is set on the ground, the plants will likely grow through the bottom and root into the ground beneath. If you don't have the yard space to plant them, butterflyweed and rose verbena



provide habitat for monarchs and can be grown in large pots together.

### Landscape With Natives

Gardening with milkweeds and native plants presents a unique opportunity. Rather than insisting on pristine leaves and flowers with no real use to wildlife, we can learn to value a garden that is both colorful with flowers and teaming with busy butterflies, caterpillars, birds, frogs, and other living things. When many different species can enjoy a native planting, the whole living community can be enjoyed as a thing of beauty.

Bear in mind that with native plants, chewed, eaten leaves must be left alone to fuel the caterpillars that later morph into pollinating butterflies and moths. Even caterpillars provide a food source for frogs, birds, and other life that we enjoy watching. Most native plants naturally resist overconsumption with their own chemical resistance, so they do not become so ragged as to become unsightly.

If you want to enjoy beautiful flowers for years while helping to maintain the phenomenon of migrating monarchs, milkweeds certainly have a place on your property, whether in your landscaping or other locations. Why not try your hand at producing some plants this year? For some easy tips and plans for backyard monarch habitat, visit [on.mo.gov/1OAKcy6](https://on.mo.gov/1OAKcy6).

Milkweeds — both plants and seeds — can be purchased from Missouri's many native plant dealers. Visit [grownative.org](https://grownative.org) for more information. Additional information, including landscaping plans, is available at [on.mo.gov/1OgD8SJ](https://on.mo.gov/1OgD8SJ). ▲

*Norman Murray is the species and habitat chief in the Wildlife Division. He is an avid naturalist and propagator of native plants. Last year he grew 20 species of native plants, including four milkweed species, for his property and to share with friends.*

### Pests

Some pests will affect milkweed plants. Generally, these will not threaten the survival of the plant, but may make them unsightly. If your goals include seed production, these insects may require some control. However, keep in mind that the "pest" species also serve as food sources for other insects attracted to a native garden, and are not always bad.

#### Oleander aphids

These tiny yellow-orange aphids are ubiquitous and seemingly appear spontaneously. All are female, as they reproduce asexually and give live birth, and they can exhibit explosive population growth. They inhabit tender tips of milkweeds and undersides of leaves most densely. At high densities, they can weaken plants and may spread diseases. If control is necessary, use liquid dish soap at 1½ tablespoons per gallon of water (1¼ teaspoons per quart) and thoroughly spray the aphids. The soap will not harm most other insects, including caterpillars, but may cause some burning to the plant leaves if the mix is too strong. Consider spraying the plant with water a couple of hours later to minimize damage.



NORMAN MURRAY

#### Milkweed bugs

These orange-and-black insects look similar to boxelder bugs and pierce milkweed stems and pods to suck the sap and other plant juices. They especially attack pods to suck developing seed germ and will destroy its viability. If seed production is a goal, control of some kind — soap as for aphids, knocking nymphs off plants, or squashing — will be necessary.



NOPPADOL PAOTHONG

#### Moth caterpillars

Other caterpillars also use milkweeds as their host plants and may dine on their leaves. These fuzzy caterpillars are those of moths, including the milkweed tussock moth, also called the milkweed tiger moth. Again, keep in mind that these caterpillars are part of the reason you planted milkweeds and are adding to the diversity of your habitat. If control is required on young plants, they may be picked by hand.



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**ON THE COVER: A monarch caterpillar crawls on a butterfly milkweed plant. Milkweeds are the primary plant on which monarch butterflies lay their eggs, and the only plant the larvae eat once they hatch. Photograph by Noppadol Paothong**

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