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**PRESS**

## Growing milkweeds for monarch butterflies

You can support the survival of monarch butterflies by growing milkweeds in your home landscape or garden.

*Duke Elsner, Michigan State University Extension*

The monarch butterfly is one of the most widely recognized butterflies in North America, well known for its spectacular migrations. The caterpillar stage feeds only on the leaves of plants in the milkweed family. In recent decades, the availability of milkweed for monarchs has greatly reduced because of changes in the way we use land from gardens and lawns on up to forests and fields. This has contributed to a severe decline in the population of this beautiful butterfly.

Anyone with a bit of garden space to spare can help the monarch population recover. Planting milkweeds on your property will provide food plants for monarch caterpillars and nectar sources for adult butterflies. In addition to supporting the monarch, milkweed species are important sources of nectar for dozens of other butterflies and numerous pollinating insects such as native bees and honey bees.



Duke Elsner

Monarch butterfly nectaring on common milkweed.

### Which milkweeds to grow

There are over 100 milkweed species in the United States, but typically only a few species will be adapted to the climate and growing conditions in a particular area. Therefore it is important to choose the correct milkweed varieties to grow on your property. Some milkweeds can spread rapidly by means of underground rhizomes, so be cautious about planting these where space is limited or other plants may have trouble competing.

### Planting milkweeds

Milkweeds can be started from seeds or as young container plants. Older milkweed plants are very difficult to transplant, so [Michigan State University Extension](#) does not recommend this approach.



Duke Elsner

Monarch caterpillar on common milkweed.

# Smart Gardening

Milkweed seeds can be collected from existing plants or purchased from commercial suppliers. Seeds need a three-month period of exposure to cold (**cold stratification**), so it is a good practice to plant seeds in autumn. Container plants can be planted in spring, but it is advisable to wait until the threat of spring frosts has passed. View the [statewide table for frost free dates in Michigan](#).

## More information

- [Gardening for Monarchs](#), Monarch Joint Venture
- [Plant Milkweed for Monarchs](#), Monarch Joint Venture
- [Monarch Watch Milkweed Market](#)
- [Common Milkweed](#), USDA Forest Service
- [Butterfly Milkweed](#), USDA Forest Service
- [Swamp Milkweed](#), USDA Forest Service

Commercially available milkweeds for Michigan			
Common name	Scientific name	Native range in Michigan	Available as
Common milkweed	<i>Asclepias syriaca</i>	Throughout	Seed
Butterfly milkweed	<i>A. tuberosa</i>	Throughout	Container plants and seed
Swamp milkweed	<i>A. incarnata</i>	Throughout	Container plants and seed
Whorled milkweed	<i>A. verticillata</i>	Southern Lower	Seed
Tall milkweed	<i>A. exaltata</i>	Throughout	Container plants
Prairie milkweed	<i>A. sullivantii</i>	Southern Lower	Container plants



Butterfly milkweed with a bevy of butterflies.



Swamp milkweed flowers.

## New Pollinators and Pollination webpage at MSU Extension

The MSU Extension website has a new [Pollinators and Pollination page](#) designed to house upcoming meeting information, research updates and important information about pollinators, pollination and beekeeping.

You can also sign up at <http://bit.ly/MSUENews> to receive our pollinators and pollination newsletters in your email. These newsletters will contain articles about all things bees and pollinators, as well as upcoming pollinator-related events.



## Warm season vegetables to grow during summer

There are many warm season vegetables you can grow now that do best when weather and soils are warm.

*Gretchen Voyle, Michigan State University Extension*

In the great, big world of vegetable gardening, there are approximately 50 kinds of delectable, edible plants commonly grown. They can be divided into two broad categories: cool season vegetables and warm season vegetables. Cool season vegetables grow best in spring and fall when temperatures are mild, and most can withstand light frosts. Warm season vegetables do best when weather and soils are warm, and can really handle hot weather. When either type are asked to grow well and perform at the wrong part of the season, they fail to please.

### Growing conditions for warm season vegetables

Warm season vegetables need eight or more hours of uninterrupted sun to produce a good crop. It requires a great deal of sunlight energy to produce fruit. Increased hours of direct sun results in more flavorful vegetables.

Soil temperatures should have warmed adequately for seeds to germinate and transplants to grow well. Garden soil temperatures need to be between 60 and 85 degrees Fahrenheit, but warm season crops do best if soil temperatures are above 70 F. You can buy a soil thermometer at a nursery or garden center. For accuracy, check the soil temperature early in the morning before the temporary heat of the day has raised it.

Most garden vegetables require a soil pH of around 6.5 and organic matter content of 5 percent or more. To find out if nutrients are acceptable for growing vegetables, consider getting a [soil test](#). Purchase a [Michigan State University Extension Soil Test Mailer](#) at [MSUSoilTest.com](#) to check nutrients, soil pH and organic matter content soil type and receive a recommendation to improve the soil. As a rule, vegetable plants need 1 inch of water per week to maintain even moisture throughout the soil profile during the growing season. However, weather patterns alter evaporation and water usage by the plants. Keeping a rain gage handy to measure natural rainfall and irrigation coupled with inserting a trowel or soil probe to investigate soil moisture is always helpful.

### Seeds or transplants?

Many popular warm season vegetables such as beans, corn, squash, cucumbers, pumpkins and okra can be directly seeded into the garden at the end of May or possibly the beginning of June in more northern Michigan counties. They require warm soil to germinate and grow. If the soil is too cold, seeds can rot before they germinate.

With transplants, these small plants have usually been started indoors about eight weeks before they are going into the garden. This extends their production time in the garden because they are older. When buying transplants, choose those without flowers or fruit. Plants in starter trays that have set flowers or fruit will not be as productive as those without. Plants such as tomatoes grown in large containers that have set some fruits are less likely to be affected by this stress. Picking off flowers or fruit will not reverse the plant to green growth.

### Examples of warm season vegetables

**Tomatoes** are one of the most popular garden vegetables, but they are technically grouped as fruit. For best production, plants need to be caged or staked to prevent damage to the fruit. Tomatoes grow best with warm soil, so not using mulch or covering the soil early in the season with clear or black plastic can warm the soil more rapidly. Adequate and consistent water is required to keep tomatoes from developing a physiological problem called blossom end rot, where the top is red and rounded but the bottom is flat, black or brown and leathery. This could happen because of a lack of water or infrequent watering, or the tomato is growing in too small of a container, so roots cannot spread out enough to get moisture.



Tomatoes can exhibit blackened, leathery bottoms when soil moisture fluctuates and fruit is developing.

Rebecca Finneran

# Smart Gardening

There are many **pepper** varieties available from mild to wild. A relative of the tomato, their growing requirements are very similar. It is possible to grow hot and sweet peppers next to each other in the garden and the fruit will not pick up the flavor or hotness of its neighbor. However, if seeds are saved, they will be a mix-and-match of pepper neighbors.

The original **eggplant** fruit was white. This is how the name was chosen. Now there are many kinds from purple to striped exteriors. Pick eggplant fruits when small. If you go for the giant ones, often the interior is soft and mealy. Like their pepper and tomato cousins, eggplants appreciate full sun and adequate water to make fruit.



Harvesting eggplants when small will ensure a firm texture.

**Tomatillos** are closely related to tomatoes, eggplants and peppers but, it is important to have two or more tomatillo plants for cross pollination. Sometimes referred to as a husk tomato, the bright green fruit inside of the papery husks are used in salsas. They are grown with the same conditions as tomatoes.

**Cucumbers** are best directly seeded into the garden. If the soil is warm, seeds can be up in about a week. Cucumbers produce best when trained onto a fence or trellis. Fruit will not be damaged by being in contact with the soil and is less accessible to critters like slugs. Keep them watered because cucumbers that do not have enough water can be misshapen and bitter.

**Summer squash** and **winter squash** are vining plants that can take up large areas of the garden. However, it is possible to grow bush zucchini and bush yellow summer squash in a much smaller area. Summer squash are harvested when the skin is tender and soft, and is cooked with the skin on. If your thumbnail can easily pierce the skin, it is tender. Winter squash are left in the garden as long as possible but picked before the first frost. Their skin needs to be hard so it can survive winter storage.

**Pumpkins** need a great deal of room to grow because of the long vines. If growing giant pumpkins, put them in as transplants so they have a longer season to produce those giant, orange orbs. Other kinds of pumpkins can be directly seeded. Pumpkins with skin that doesn't harden well store poorly.



Pumpkins come in many shapes and sizes.

**Watermelon** and **muskmelon** should be purchased as transplants. Michigan does not have a long enough growing season to grow big watermelons but the small, round, dark green melons will grow well. The advantage of these round beauties is they do not take up as much refrigerator room and have a sweet taste and firm flesh. Watermelons and muskmelons require a great deal of water when growing and producing fruit. To tell if your melon is ready to pick, look at the bottom of the melon for a light yellow or whitish area. Then, use the pad of your finger or thumb to gently press on the stem where it joins the melon. It should separate easily. Thumping on melons only bruises them.



Melons have a long growing period and should be grown in transplants.

**Fresh beans** and **dried beans** can be grown in gardens. Green and yellow or wax beans are grown as bush plants. Pole beans grow as vines and need to be trained on a trellis or fence. Flat beans like Fava beans or lima beans are picked when fresh. To extend harvest, plant a portion of the seeds at two-week intervals. Beans for drying like kidney or great northern are harvested when the pods dry out.



Pole beans and flat beans can easily be grown in the garden and direct-seeded at two-week intervals for longer harvest period.

**Sweet corn** is mainly pollinated by wind. It is important to grow corn in a block of at least four rows. Sometimes the super sweet varieties do not germinate as well as they should. Plant them closer than the label recommends. As soon as tiny leaves are out of the ground, carefully transplant those that

are too close to places where there are gaps in the rows. Sweet corn is the only vegetable where you are eating the seeds. Because of cross-pollination issues, do not plant sweet corn near field, Indian or popcorn because it can negatively affect the taste of the sweet corn.

## Smart gardening for insects – cover up the rows!

Using row covers to prevent insect damage is a smart gardening practice.

*Rebecca Krans, Michigan State University Extension*

By using row covers properly, vegetable gardeners can reduce or eliminate the need for pesticides on certain crops. Row covers are exactly that, a material designed to cover rows. Of course, not all row covers are created equal, so it's important for gardeners to know what the options are, what each type provides and determine their own goals for their vegetable garden. If a gardener doesn't have traditional rows, they can adjust a cover to fit their square foot garden, raised bed or planting area.

### Pick a row cover that fits your goals

Row covers come in different forms, from perforated plastic to spunbonded polyester or polypropylene. Different weights are available and it's the cover's weight that determines how much light will be transmitted through, and ultimately, its best use in the garden.

Lightweight covers that are 0.5 to 0.6 ounces per square yard are primarily used for insect control. Due to their light weight, they transmit the most light – 85 to 90 percent. This material will easily tear, so it doesn't have as long a life as heavier covers.

There are also mid-weight covers from 0.9 to 1.25 ounces per square yard, which are used to provide early maturity, increase early yields and total yields, improve quality and extend the season. They allow 70 percent of light through.

Heavy covers from 1.25 to 2 ounces per square yard are used mainly for frost protection as they only transmit 30 to 40 percent of light through.



A lightweight row cover secured over a raised bed.

### How to cover up for insects

Install your lightweight row cover immediately after planting. Be sure to secure all edges to the ground with soil, rocks or metal pins. Making sure there are no entrance holes for pest insects to enter is critical to your prevention efforts.

You also want to make sure you are practicing crop rotation and not planting a vegetable of the same family in the same location for at least three years. Six years is even better if you have this option. Some of the insects overwinter at the edges of the garden, and the following spring they will move back to a vegetable's location from the previous year. If you change the location of the vegetable and make use of a row cover, the insects aren't as likely to find the vegetable they seek. Be conscious that when using

# Smart Gardening

row covers, if a pest does sneak in, no natural insect enemies such as ladybugs, lacewings and other predatory and parasitoid insects will be present under the covers to assist; it's best to prevent the pest from getting in at the start.

The lightweight covers will not need a support over most vegetables. The only exceptions will be vegetables with tender growing points, such as tomatoes, peppers and summer squash. In windy conditions, a row cover may damage these plants from wind abrasion. Make use of hoops formed from wire, PVC or electrical conduit to support row covers for these vegetables.

## What insects can you control by covering up?

By covering some vegetables right after spring planting, you will control a number of adult insects from finding the vegetables they seek. Cabbage root maggot flies, cabbageworms and cabbage loopers will attack all brassicas, such as broccoli, cabbage and cauliflower. Flea beetles that attack a variety of vegetables can be

controlled as well by covering up brassicas, potatoes, tomatoes and eggplants as soon as you plant.

Cover your spinach, beets and chard to prevent spinach leafminer flies from laying eggs. You can control striped cucumber beetles from getting to your melons, summer squash, cucumbers, winter squash and pumpkins by covering up after planting; be sure to remove the cover when flowers appear as bees and other pollinators will need to get to the flowers to pollinate.

## Row cover considerations

Be mindful that using row covers will take extra time, effort and continued investment. Gardeners need to be sure to continue monitoring vegetables under row covers for too high of temperatures, which may cause blossom drop or reduce quality of cool season crops. Covers may be damaged if animals have access to them, and lightweight covers may only last one season, so disposal can be a concern. If you are looking for a smart gardening practice to reduce your need for pesticides, consider row covers as a tool within your smart gardening toolkit to assist with insect control.

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## How to protect your yard and garden from deer and rabbits

Smart tips for protecting your landscape and garden plants from deer and rabbit damage.

*Diane Brown, Michigan State University Extension*

### Managing deer damage

Deer are opportunistic feeders. They prefer a variety of foods, treating landscape plants as a salad bar. Often, feeding injury occurs in irregular patches and surrounding plants may be trampled. Deer do not have upper front teeth, so plants they have damaged often have a ragged appearance. Signs of injury to woody plants include frayed branch ends, development of a browse line on trees and buck rubs on trees. Buck rubs occur in fall during breeding season, usually on smooth-barked trees. Male deer regrow antlers every year. They remove the velvet from their antlers and scent-mark their territory by rubbing their antlers on trees, shredding the bark and often, if they are young trees, pushing them over.

Managing deer injury in home landscapes usually falls into the category of using plant species less-favored



Deer feeding damage to Hostas.

by deer, exclusion or repellents. For a list of plants less bothered by deer, see "[Deer-Resistant Plants for Homeowners](#)" from Michigan State University Extension. Scare devices, such as alarms and cannons,

are not practical in urban areas and are generally ineffective as deer get used to them.

Fencing is probably the most effective means of managing deer damage, although it can be quite costly. If local zoning allows, electric fences are the most effective means for protecting a garden area. Perimeter fences need to be at least 8-10 feet tall to be effective. Temporary wire or plastic enclosures around plantings can be used to protect plants over winter and vegetable gardens during the growing season.

Repellents repel by either taste or smell; some contain a mix of ingredients that provide both. Check the label to make sure what the product is labeled for. Very few are registered for use on edible plants, so read carefully. One drawback of using repellents is they will need to be reapplied periodically to be effective, and if the deer are hungry enough, they will likely eat the plants anyway.

## Managing rabbit damage

Rabbits frequently damage woody plants in winter and early spring. Damage occurs primarily within 2.5 feet of the ground, but can appear higher during the



Poultry fencing can be used to protect beds and vegetable gardens from rabbit feeding damage.

winter due to snow being piled up. Their damage is easy to recognize. Rabbits prefer thin-barked trees and shrubs and gnaw the bark in patches; branch ends and herbaceous plants and vegetables are cut cleanly with a sharp angle on the end, unlike the ragged chewing caused by deer.

Wire screen cylinders placed around trees for vole protection during winter are not high enough to prevent rabbits causing damage. Wrap branches with tree wrap up at least 5 feet to provide protection during winter. Fine-mesh chicken wire or poultry fencing can be used to protect beds and vegetable gardens. A double layer of chicken wire fastened to fence posts will make it more secure. Be sure to bend the wire down in an “L” on the outside away from the garden and bury it or secure with stakes to prevent digging.

Repellents used for rabbits have the same considerations as products used for deer. Check the repellent labels for sites and directions for use. In addition, dried blood can be effective for repelling rabbits in spring or summer, but it loses effectiveness after a rainfall and must be reapplied after it rains.

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## Drought-tolerant plants save water, money and time

Drought-tolerant plants conserve water usage while still providing beauty and function in the landscape.

*Mary Wilson, Michigan State University Extension*

With climate change concerns, unpredictable droughts and high energy prices across the country, nearly everyone is looking for ways to conserve resources and cut costs. A simple step to conserve water usage in your landscape is to select drought-tolerant plants. Many of these thrifty plants use less water, but still provide beauty and function in the landscape.

### Start off smart

When creating a water-wise landscape, follow these key strategies for success.

- **Recognize site variations.** Areas in your landscape may significantly vary in soil type (sand

# Smart Gardening

versus clay), exposure to light (sun versus shade) and wind, evaporation rates and moisture levels. Sandy, well-drained soil dries out quicker, while heavy clay soil is likely to remain moist longer. Adding in exposure to sun and wind can create a dry microclimate even in areas with adequate rainfall.

- **Select plants that match the site conditions.** Use plants that thrive under existing site conditions. A poor match leads to poor performance and possible plant death.
- **Group plants of “like needs.”** Intentionally group plants together that have similar water and sun exposure needs. Group any water-demanding plants together in a site close to a water source.
- **Provide care during establishment.** Even drought-tolerant plants require supplemental watering during establishment. Once the root system is established, the plant will require less attention. Apply an organic mulch to conserve soil moisture for newly developing roots.

## Characteristics of “drought tolerance”

Drought-tolerant plants have built-in features to minimize water loss and maximize water uptake. Plants may have reduced leaf areas and bear small leaves or needles as in the case of evergreens. Some drought-tolerant plants with large leaves have

deep indentations (sinuses) between lobes in the leaves to reduce their leaf area. Another sign of drought tolerance is leaves covered with a heavy accumulation of wax such as that seen on white fir (*Abies concolor*). This wax serves to conserve water within a plant.

The presence of fine hairs on the leaves of some plants like silver sage (*Salvia argentea*) is another adaptation that traps moisture at the leaf surface. Drought-tolerant plants like false blue indigo (*Baptisia australis*) have deep roots that pull in moisture well below the soil surface.

Are native plants drought-tolerant? Perhaps. It depends on where the plant evolved and site conditions where the plant will be placed. Do some research; don't assume “native” is synonymous with “drought tolerance.” There is some information in the Plant Facts section of [www.nativeplants.msu.edu](http://www.nativeplants.msu.edu).

Examples of drought-tolerant trees, shrubs, perennials and annuals with pictures can be found at <http://bit.ly/Drought-tolerant-plants>.



Plants with silvery or hairy foliage such as silver sage (*Salvia argentea*) tend to be very water-smart.

## Looking for more?

For more information on a wide variety of **smart gardening** topics, or to find out about smart gardening classes and events, visit [www.migarden.msu.edu](http://www.migarden.msu.edu).

Stay up-to-date with resources and news for home gardeners by signing up at <http://bit.ly/MSUENews> to receive MSUE Home Gardening Production Digests via email.