

SAVE THE MONARCHS

PLANT MILKWEED!!!!!!

HAIRY BALLS MILKWEED

a/k/a Balloon Milkweed

a/k/a Gomphocarpus physocarpus

a/k/a asclepias physocarpus

Annual milkweed - does not spread



Please Join Us at: **Donna's Monarch Butterfly Sanctuary** (Facebook Group)

Monarch Butterflies spend the winter in Mexico. In March they head north, mate, lay eggs and eventually die. Their offspring's eggs hatch as caterpillars, pupate into a chrysalis, and eclose as a butterfly. (Butterflies do not form a cocoon). Their lifespan is approximately 3 to 6 weeks. This process repeats itself over and over taking four to five generations to reach the northern United States and Canada. In Autumn, the 5th generation flies 2,000 miles back to Mexico where they spend the winter high atop the trees, roosting together to stay warm. This generation lives several months as opposed to the 3 to 6 week life span of their ancestors. Monarchs have a 3% chance of making it to an adult butterfly in nature due to predators.

Monarch Butterflies are not yet an endangered species. They are in New Zealand, Australia, the West Coast of the USA and Hawaii. However, the Northeastern migratory path, which runs from Mexico, up the East Coast, to Canada, and back is at risk of extinction. Why?

#1. LACK OF MILKWEED: Milkweed is the host plant for the Monarch Butterflies. It is the only plant she will lay her eggs on. *This is what the Monarch caterpillars eat!* Without milkweed, Monarchs will cease to exist. Land development and the use of herbicides such as Round Up are reducing the amount of milkweed available for the female Monarchs to lay their eggs.

#2. ILLEGAL LOGGING IN MEXICO: This is the Monarchs' overwintering grounds which are crucial for their survival over the winter.

HOW CAN WE HELP? PLANT MILKWEED!

While we cannot do anything to stop the illegal logging in Mexico, all of us throughout the United States, and especially the East Coast can help by planting milkweed.

- When planting milkweed, you can observe Monarchs in different stages of their life cycle.
- **HAIRY BALLS MILKWEED DOES NOT SPREAD by rhizomes.** It is not an obnoxious weed; it is an annual.
- **Full Sun: Space: 2 feet apart Height: 4 to 5 feet Recommended: Plant in Groups of 3**
- Avoid eye contact with milkweed sap.
- May be harmful to pets if ingested.
- Hairy Balls Milkweed and butterfly habitats are available.

PLANTING INSTRUCTIONS

- Milkweed is the Host Plant for the Monarch butterflies. It is the only plant the female Monarch will lay her eggs on. When they hatch, the Monarch caterpillars will ONLY EAT MILKWEED.
- Oftentimes you will see a milkweed plant whose leaves have been completely consumed. Nothing is left but stems, yet it is covered with caterpillars. Without milkweed, those caterpillars will starve. It is recommended to plant them in a minimum of groups of three. If they eat one entire plant, they can crawl to a nearby plant for food.
- If you are going to actively rear Monarchs, and harvest their eggs, it is perfectly fine to plant your milkweed in one garden.
- If you are going to plant milkweed and let nature take its course, it is recommended to plant milkweed in a minimum of groups of three in different areas on your property.
- Each female Monarch can lay up to 300 eggs. In nature, 3% to 10% of the eggs laid will make it to an adult butterfly.
- Spiders and ants eat the eggs.
- Preying mantis, stink bugs, beetles, lizards, wasps and birds also eat the caterpillars. However, it is said that once a bird eats one, it won't eat a second. The ingredients of the milkweed make the caterpillars distasteful.
- Tachinid flies and cichlid wasps parasitize the caterpillars. Their larvae bore into the caterpillars and eat them from the inside out, ultimately killing the caterpillars
- If we plant an abundance of milkweed in one area and let nature take its course, we create a "target-rich environment." The helpless caterpillars fall victims to the predators.
- If we plant milkweed in groups of three and far from the other plants, the predators may focus on one garden, not knowing caterpillars are in another area. This increases their chances of survival and making it to an adult butterfly.
- Amend your soil with peat moss or potting soil to allow drainage if there is a high clay content.
- **AVOID GETTING MILKWEED SAP IN YOUR EYES.**

GROWING HAIRY BALLS MILKWEED FROM SEEDS

1. Seed starting soil 2. Heat mat 3. Humidity Dome 4. 6500K grow light
 - No cold stratification is needed.
 - Germination will occur in 3 to 5 days.
 - Start indoors in January/February
 - Seeds sown in the garden will not germinate until June. These late starting plants will not produce ripened seed pods before first frost for the following year.

MILKWEED TOXICITY

TOXICITY OF MILKWEEDS: Milkweed toxins are called cardiac glycosides and the levels are higher and lower in different milkweeds. **Monarch female butterflies, if given a choice, like to choose milkweeds with higher levels of these glycosides/milkweed sap to protect their baby caterpillars.**

Butterfly weed/ tuberosa, Cardenolide (mg/g) levels 0.004170147
Narrowleaf Milkweed/fascicularis 0.018372852
Whorled Milkweed/verticillata 0.021662409
Purple Milkweed/purpurascens 0.04790275
Swamp Milkweed/incarnata 0.051820588
Showy Milkweed/speciosa 0.192794394
Common Milkweed/syriaca 0.370894586
Woollypod Milkweed/eriocarpa 0.695109063
Tropical Milkweed/curassavica 0.867703059
Sullivant's Milkweed/sullivantii 1.048871333
Desert Milkweed/erosa 1.448095625
Balloon plant Hairy Balls/physocarpa 3.005173722

Above is a list of the cardenolides in milkweed sap. Study was done by Professor Jaap de Roode and Professor Mark Hunter.

Courtesy of [Mum Moore](#) This chart was shared from The Beautiful Monarch facebook page.

NATIVE MILKWEED IN MARYLAND - perennials (there are more)

Common – spreads by rhizomes – considered an aggressively spreading obnoxious weed. Will pop up in your lawn and other places. It is difficult to eradicate. It gets covered with aphids. By August its leaves harden, turn leathery, split, get black spots and the tall plants fall over.

Swamp milkweed: Is a perennial that does not spread. For me, it has been a finicky plant that is prone to rust. It gets few monarch eggs. It does not seem to like overhead watering.

Butterflyweed – flower is all orange. It has narrow leaves and does not attract many females for egg laying. It is a good nectar source.

NON-NATIVE MILKWEED – annuals *** this is what we plant in our gardens**

Hairy Balls milkweed a/k/a Gomphocarpus physocarpus HAIRY BALLS IS NOT SWAN MILKWEED
Its seed pods are perfectly round!!!

Swan Milkweed a/k/a/ Gomphocarpus fruticosus Its seed pods elongate and develop a tip, resembling the tail end of a swan. *The only way you can differentiate Hairy Balls and Swan is by the shape of the seed pods and size of the leaves. Swan milkweed leaves are thinner than those of the Hairy Balls plant.* We won't be planting it again. Hairy Balls provides more foliage for the caterpillars.

Tropical milkweed a/k/a asclepias curassavica – Mentioned in many articles with regard to the possibility of the plant harboring OE spores. Mostly in areas where it lives over the winter, especially Florida. An annual in northern states. The plants are removed and fresh are started in the spring. OE spores die off.

NECTAR PROVIDING PLANTS

Butterflies get their food from the nectar on plants.

The following list is what we planted in our gardens:

Perennials:

Butterflybush
Joe Pye Weed
Salvia (perennial)
Coneflowers
Heliopsis (false sunflower) Varigated
Beard Tongue
Agastache

Annuals:

Lantana
Verbena
Salvia (annual)
Zinnia
Sunflowers
Tithonia a/k/a Mexican Sunflower (big orange flowers)
Pentas

HOST PLANT - A host plant is what a butterfly lays her eggs on.

Caterpillars eat the shell of the egg, then start eating the leaves of the host plant.

Monarchs Milkweed

Black Eastern Swallowtails Dill, Fennel, Parsley, Carrot leaves, Rue, Celery? Cilantro?

Spicebush Swallowtails Spicebush and Sassafras trees

Gulf Fritillaries Purple Passionvine

Search Butterfly Host Plants and a list of plants will come up, instructing you which specimen to plant that will attract a specific butterfly species.

TERMINOLOGY

Eggs **Hatch**

Caterpillars **Pupate** When the caterpillar pupates, it sheds its skin for the last time, exposing the chrysalis. Monarchs shed their skin 5 times. Each phase is called an Instar. The 5th instar caterpillars eat like munching machines for the last two days before they pupate.

(Think of it like this. Our clothing is our stripes. When we undress, and the body is naked, our skin is our chrysalis.) A butterfly sheds its skin exposing the chrysalis which is already there. At first it is gooy, then it will harden within a few hours.

***Moths form a cocoon Butterflies form a chrysalis pronounced Chris A Lis
Plural Chrialises or Chrysalides .

Butterflies **Eclose** (There is no N in the word) Pronounced E Close
When the butterfly comes out of the chrysalis the term is **Eclose**, not enclose.

It is crucial that anyone who actively rears Monarchs ensure they are doing so in a responsible way. With the risk of OE and NPV, cleanliness is of the utmost importance. There are tutorials online with regard to bleaching eggs and leaves. Chart courtesy of Ricardo Bacallao.

Bleach Solutions for Eggs & Leaves					
Bleach Brand	Bleach - % Sodium Hypochlorite	Dilution Ratio		Resulting % Sodium Hypochlorite Solution	Water/Bleach Solution
		Water	Bleach		
Walmart - Top Job *	2.75	19	1	0.14%	5%
Great Value Cleaning Bleach *	6.00	19	1	0.32%	5%
Clorox - Concentrated	6.00	19	1	0.32%	5%
Clorox - Concentrated	6.00	32	1	0.19%	3%
Clorox - Concentrated	7.50	32	1	0.23%	3%
Kroger - Home Sense **	8.25	32	1	0.26%	3%

* per website

** per email

Notes

1. Use regular bleach - no scenter, no splashless, nothing but bleach
2. Bleaching eggs - 60 seconds **MAX**
3. Bleaching milkweed leaves - up to 5 minutes
4. **WARNING** - bleach will dissolve the cement holding your diamond in your rings!

Cleaning/Sterilization Solutions				
Bleach - % Sodium Hypochlorite	Dilution Ratio		Bleach % Sodium Hypochlorite	Water/Bleach Solution
	Water	Bleach		
2.75	10	1	0.28%	10%
2.75	5	1	0.55%	20%
6.00	10	1	0.60%	10%
7.50	10	1	0.75%	10%
8.25	10	1	0.83%	10%

Arguments with regard to Native vs. Non-Native.

1. **“Non-natives may naturally sow seeds and choke out natives.”** Answer: (In northern states they are annuals. Naturally sown seeds will germinate in late spring. Due to starting late, the volunteer plants will not produce ripened seed pods before first frost. They will not produce volunteer plants the following year.
2. **“Non-natives may entice Monarchs to “hang around” and delay starting migration.”** Answer: Hairy Balls and Tropical are amazing plants. Their leaves remain soft and supple and are a favorite of the Monarchs. To discourage females from hanging around, cut them back in September to discourage egg laying. (You still need the plants to feed the remaining caterpillars.) One can put paint strainers over the plants to discourage egg laying or dig them up, pot them and put them in a habitat until your last caterpillar has pupated.
3. **“Tropical milkweed may harbor OE spores.”** Answer: All milkweed can harbor OE spores. In northern states, tropical milkweed is an annual. If it has OE spores, they will die over the winter along with the plant. We start fresh in the spring with new plants. We can also bleach our eggs with a solution for 60 seconds. This process kills OE spores that could be on the eggs. Plants can also be bleached. (There are tutorials available online with regard to bleaching eggs and plants).

CONCLUSION:

We began our butterfly gardens several years ago. We followed the advice of researchers who strongly encouraged the planting of native milkweed. We purchased Common milkweed. We had no idea it would spread by rhizomes, is considered an obnoxious, aggressively spreading weed and is something farmers try to eradicate. We also added swamp, butterflyweed and showy milkweed to the garden. For three years we had very little activity.

NATIVES TO MARYLAND: PERENNIALS: (There are more but these are what we are familiar with):

Common milkweed: It is a native and can be seen on roadsides, in the middle of fields. It is not an attractive plant. It spreads and pops up in places it is not wanted such as under the sidewalk and into the lawn. It grows tall and oftentimes falls over, laying on the ground. By August, when migration hits peak in Maryland, many of its leaves begin to turn yellow, leathery and get spots on them. Additionally, common milkweed is oftentimes covered in aphids. These are sap suckers that will ruin the milkweed if left alone.

Swamp milkweed: has been a finicky plant for us and is prone to rust. Perennial – does not spread.

Butterflyweed: has low levels of cardenolide and does not attract many females for egg laying. It is a good nectar source.

Showy milkweed: Spreads by rhizomes. Attracted few monarchs for egg laying in our gardens.

NON-NATIVE MILKWEED: ANNUALS

Hairy Balls milkweed *gomphocarpus physocarpus*

Swan milkweed *gomphocarpus fruticosus* (sister plant to hairy balls – smaller leaves)

Tropical milkweed *asclepias curassavica* (controversial articles written about this plant)

Hairy Balls: We stood at the edge of the garden and watched as a female Monarch arrived. She fluttered from hairy balls to hairy balls to hairy balls, skipping the common, swamp, butterflyweed, showy and tropical. (*We did not have swan at that time. We will not grow Swan again; Hairy Balls is much better*). This was a jaw-dropping moment. I knew there was something going on in the garden, but I didn't know what.

A few months later I saw the Milkweed Toxicity chart. It lists hairy balls as having the highest level of cardenolide in it than any other milkweed listed in the study. This was a life-changing moment; I witnessed this with my own eyes. It was then I decided to start harvesting the seeds and begin growing it.

Tropical milkweed has controversial articles written about it. They refer to the possibility of them harboring OE spores (*Ophryocystis elektroscirrha*, a protozoan parasite that affects Monarchs), over the winter which may infect future Monarch generations. In northern states, all of these plants die in the cold. Perennials sprout in the spring, annuals need to be restarted. Our gardens have dozens of tropical milkweed plants and we do not have any issues with OE.

To ensure OE is not present and affecting your butterflies, one can bleach their eggs. This is a 19:1 ratio of water to bleach. One minute swish in the bleach water, followed by one minute into a water rinse. There are many articles on the internet explaining bleaching Monarch eggs.

Please do your own research and decide what variety of milkweed is best for your garden. **For us, we will continue to plant Hairy Balls and Tropical milkweed.** We just can't get rid of this Common milkweed! We will not be growing Swan a/k/a *gomphocarpus fruticosus* in the future.