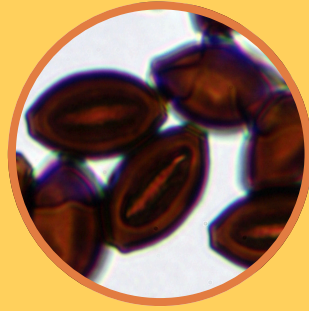


Tropical Milkweed and OE: Potential Risks for Monarchs



What is *Ophryocystis elektroscirrha* (OE)?

OE is a debilitating parasite that infects monarchs and a few related species. Infected adult monarchs harbor many thousands of microscopic OE spores on the outside of their bodies. When dormant spores are scattered onto eggs or milkweed leaves by infected adults, monarch larvae consume the spores, and these parasites then replicate inside the larvae and pupae, spreading the infection. Monarchs with severe OE infections can fail to emerge successfully from their pupal stage or may emerge with difficulties causing malformed wings. Monarchs with mild OE infections can appear normal but have decreased fitness, causing shorter lifespans and reduced reproduction. Although research suggests that tropical milkweed can lower OE replication within infected monarchs due to high levels of cardenolide toxins, it does not cure it. Moderately infected monarchs still spread the parasite to their offspring, so it is important to note that tropical milkweed is ineffective at curing or preventing the spread of OE.



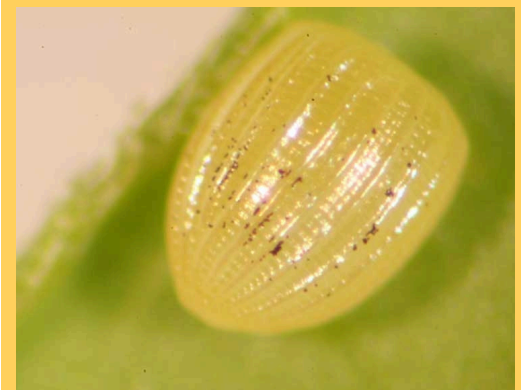
PROJECT
MONARCH
HEALTH

Learn more about OE at:
www.monarchparasites.org

Risks of Tropical Milkweed

Tropical milkweed (*Asclepias curassavica*) has a native range extending from South America to as far north as Mexico. Still, it is widely available at commercial nurseries across the U.S. and Canada, where it is not native. Its tropical nature means it is well adapted to grow year-round in mild climates that do not experience regular freezing temperatures. By contrast, milkweeds native to the migratory monarch breeding range naturally go dormant during the winter months. Each fall, monarchs migrate from northern breeding grounds to overwintering sites in central Mexico and coastal California, where they cluster in trees and stay in a semi-dormant state, known as reproductive diapause, until the spring. However, the year-round persistence of tropical milkweed in parts of the southern U.S. and California may interfere with the monarch's natural migratory and overwintering behaviors. Monarchs that encounter these plants during migration may become reproductive and forego migration.

The persistent nature of this milkweed in areas where it can grow year-round also increases its likelihood of carrying higher loads of *Ophryocystis elektroscirrha* (OE). While any milkweed species can be an OE carrier and spread the disease, tropical milkweed is particularly problematic in areas where it does not die back, eliminating the spore loads on the plant.



Photos by Sonia Alitizer

Information presented in MJV handouts is based on the best-available science. Relevant publications and summarized findings are available through our annual research reviews.

Risks of Year-Round Breeding

If milkweed is present and green, it makes that habitat viable for monarch reproduction, which presents several potential challenges during winter months when monarchs would not typically breed. Research in this area is ongoing, but recent work suggests that winter-breeding monarchs suffer higher risks of mortality and lower ability to reproduce due to:

Infectious disease

Winter-breeding monarchs have higher OE rates than spring or summer generations. Data from Project Monarch Health showed that 49% of winter-breeding monarchs were infected with this parasite, compared to 9% of migratory monarchs sampled in Mexico and 15% of migratory monarchs sampled in the northern U.S. and Canada. This may be due to the increased accumulation of OE on milkweeds in areas where it does not die back.

Food shortage

Because tropical milkweed plants often harbor high densities of monarch larvae during the winter, larvae can eat plants to the ground and run out of food. Occasionally, a killing freeze may also knock back all the plants in an area hosting winter-breeding monarchs. Thus, compared to summer-breeding larvae, winter-breeding larvae face a higher risk of food limitation, leading to starvation or cannibalism.

How You Can Help

Support Monarchs At Home

- Only plant milkweed native to your region.
- If you already have tropical milkweed in your garden, prune the milkweed stalks before the fall migration when native milkweeds are typically dormant to discourage winter breeding and eliminate OE. Re-cut the milkweed every few weeks through February as leaves re-sprout.*
- When possible, remove and replace tropical milkweed plants with native species.*

**These recommendations are not applicable in South Florida (south of Orlando), where a distinctive, non-migratory population exists. However, native milkweed planting is still encouraged in this area.*

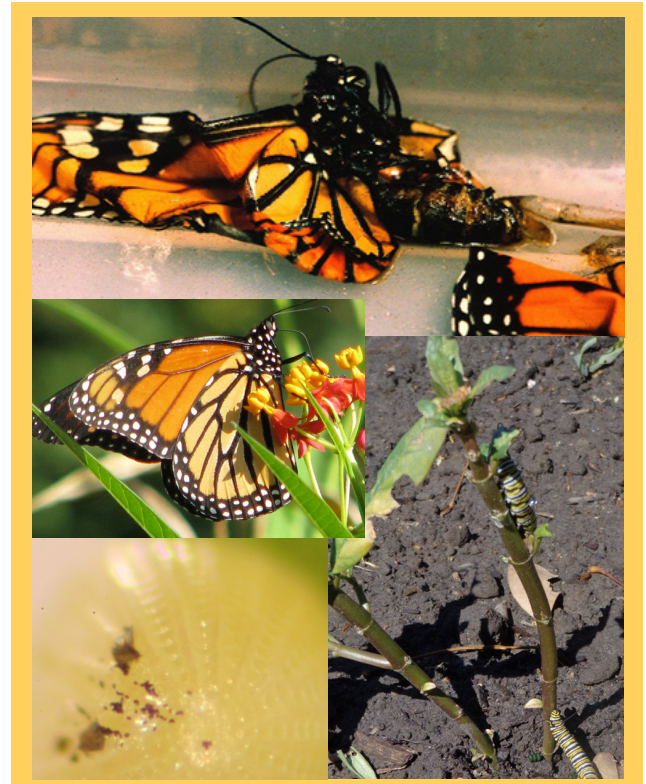
Participate in Community Science

- **Project Monarch Health**: Test for OE by collecting and submitting parasite samples from adult monarchs.
- **Journey North** and the **Western Monarch Milkweed Mapper**: report observations about monarchs and milkweeds during all seasons.
- **Monarch Larva Monitoring Project**: collect data on monarchs' use of milkweed near you.
- **Integrated Monarch Monitoring Program**: collect data on monarchs and their habitat during the breeding season.

**Note: handling monarchs at any life stage for any purpose is prohibited in California without a permit.*

Advocate and Contribute

- Create demand for native, pesticide-free milkweeds by asking for them at your local nursery.
- Reach out to local municipal leaders to encourage participation in conservation programs.
- Support and contribute to organizations working to conserve monarchs and pollinators.



(Clockwise starting with the top) Photos by: S. Altizer, D. Satterfield, J. de Roode, P. Davis

