

How does the age of a Milkweed plant affect where Monarchs lay their eggs?

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Background Information:

Common Milkweed (*Asclepias syriaca*) is native to the United States and Canada. In its lifetime, it can grow to be about 3-5 feet tall. The leaves on this type of milkweed are elliptical shaped and are 4-9 inches long.

Our milkweed site is on two slope sides of a city water reservoir. One side is a very steep slope and the other is a narrow easy slope. This reservoir is in a Duluth, MN neighborhood edged by road, houses and natural life. There are also trees, flowers, and grass surrounding our site.

We have always wondered if the age of a plant is a variable that female monarchs use in determining where to lay their eggs.

Hypothesis:

H 1: Female Monarchs lay eggs on younger milkweed, because they are healthier plants.

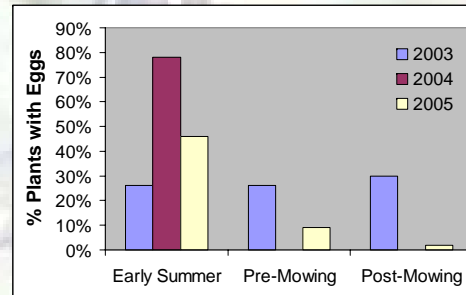
Null Hypothesis: The age of the milkweed plant does not affect where a female monarch lays her eggs.

Methods:

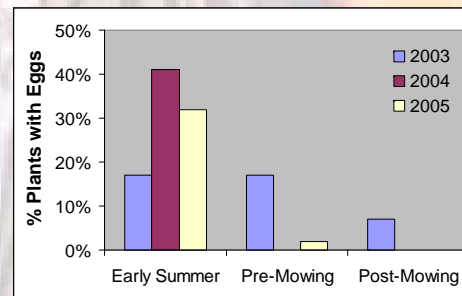
As part of the Monarch Larva Monitoring Project, we monitored plants throughout the summer at two different sites owned by the city of Duluth MN, using standardized methods described at www.mlmp.org. Each summer, both sites were mowed at some point during the summer. We divided monitoring dates into three categories: early summer, the week before the site was mowed, and the time after the site was mowed when there was new milkweed growth.

We randomly selected plants to monitor during each monitoring session using a system that involved drawing cards to determine the distance and direction to travel to the next plant. For each plant monitoring, we recorded the number of eggs and larvae on each plant.

Eggs to Milkweed on Site 71



Eggs to Milkweed on Lower Chester



Conclusion:

We found that monarchs laid the most eggs on the milkweed in the beginning of the season. There is not a consistent relationship between the ratio of plants with and without eggs and mowing; in some years there were more eggs before the mow and in other years there were more after the mow. Our data were taken over the course of three years, and mowing did not occur at the same time every year; two of the mows occurred in the first two weeks of August, and the other in July. This makes it difficult to determine how plant age affects female choice of plants.

If we continued this experiment, we would change several variables. Instead of testing for age, we would measure the height of the plant. We would also try to work with the city to have more control of when the plants were mowed, and would like to ask that some be left unmowed so that females would have a choice between plants in different conditions. Lastly, we would study over a longer time period with more observations.

References and Acknowledgements

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<http://oregonstate.edu/debt/HORC/locationhome/photos.html>

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