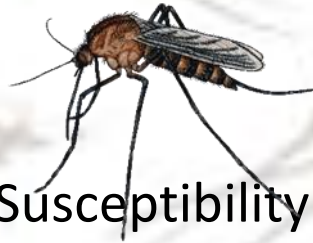


This activity learning resources that continue to support the environmental sciences and Florida's Next Generation Sunshine State Standards. Please do not hesitate to reach out if we can be of further assistance to you or students.

Resistance War:

Determining the Susceptibility or Resistance of Mosquitoes
WebQuest



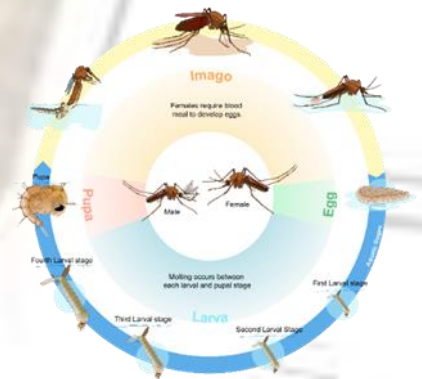
Introduction:

The history of insecticide use, for both mosquito control and major agricultural purposes is long. It is important for scientists to continually monitor and detect for the emergence of an insecticide-resistant strain of mosquitoes. Where regular mosquito control and larvicide operations are undertaken in an area to control mosquitoes, the normal susceptibility levels of the larvae should be determined as early as possible. This WebQuest will introduce you to the history of pesticide use, control and the use of susceptibility testing to monitor resistance among our mosquito populations.

Think:

Mosquito Biology

1. What are mosquitoes? [Which Mosquitoes Are Bad?](#)
2. How many mosquitoes do we currently have in Florida?
3. How many mosquitoes do we have worldwide?
4. How many mosquitoes are dangerous to people?



Mosquito-Borne Illnesses

[How do Mosquitoes Spread Disease?](#) The Florida Department of Public Health has a mission to monitor the geographic and arbovirus surveillance systems over the eastern and southern United States. There you can find the latest press release [arbovirus information](#).

Pesticides

The use of plant extracts as insecticides can be dated back at least [4,000 years](#). A Pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest. A [pest](#) may be insects, mice, other animals, fungi, unwanted plants or microorganisms.

1. Nobel Prizes are awarded for outstanding academic, cultural or scientific advances. Why would the discovery of a pesticide be granted a Nobel Prize?
2. Today, ladybugs are used to control aphids (a pest that suck sap from plants), just like predatory ants were used to control pests in Chinese orchards. What could be the advantages and disadvantages of using insects to combat pests?
3. If pesticides are openly applied in fields, why do some insects evolve pesticide resistance while others don't?

Dig Deeper:

1. [Sterile Insect Technique \(SIT\)](#) is a technique used to sterilize specific species of mosquitoes to reduce their populations or eradicate them, it is insecticide-free. Which mosquito species does Lee County Mosquito Control target?
2. How does this compare to [genetically engineering mosquitoes?](#)



3. How is Lee County Mosquito Control using [SIT techniques](#) to combat local harmful mosquito species?

Personal Responsibility

[What can you do to reduce mosquito populations?](#) There are many ways to control mosquitoes at home. What does the [CDC](#) recommend?

Application Methods

[Mosquito Control 101](#) What recommendations does the [Florida Department of Health](#) make for mosquito disease prevention? How do scientist use [Bioassays](#) to monitor for mosquito resistance to surveillance techniques?

Discuss:

1. You are planning a research trip to study mosquitoes in Uganda. What precautions does the [Centers for Disease Control](#) recommend before traveling?
2. There is a lot of controversy about the use of DDT and its history in the environment. Research to find arguments for both opposing views.

Search Topics

- History of DDT
- Rachel Carson and the Silent Spring
- Arguments against DDT
- Argument for DDT



Learn More

1. Where can I find up to date information from [Lee County Mosquito Control](#) and the [Lee County Mosquito Education Program](#).
2. Where can I learn more about local mosquitoes and [mosquito control operations](#)?
3. Where can I find what areas of Lee County are being [treated](#)?
4. How would some make a [service request](#)?

