

Mosquito Larvae Protocol

Mosquito Larvae Sampling Field Guide

Task

Collect and identify mosquito larvae to the genus level. Samples can be taken for species level identification in the lab.

What You Need

- ☐ Nets
- ☐ Squirt bottles
- ☐ White plate or pan
- ☐ Plastic bags
- ☐ Rubber bands
- ☐ Permanent markers
- ☐ Hand lens or magnifying glass
- ☐ Microscope (for species identification)
- ☐ *Mosquito Larvae Identification Key*
- ☐ *Mosquito Larvae Data Sheets*
- ☐ Long pants, long-sleeve shirts; sunscreen; insect repellent
- ☐ Additional equipment needed if collecting water quality measurements.

In The Field

Site Definition

If not done already, complete a site definition using the *Site Definition Sheet*.

Current Conditions

1. If collecting water transparency, follow the *Water Transparency Protocol*.
2. Estimate the maximum water depth: <0.5m or >0.5m.
3. Estimate the perimeter of water body if puddle, pond or lake OR width if drainage ditch, stream, or river: ☐ < 1m, ☐ 1-10m, or ☐ >10m.
4. Estimate the area of observation site in shade: ☐ 0%, ☐ 25%, ☐ 50%, ☐ 75%, or ☐ 100%
5. Record whether the site has vegetation or algae.
6. Record if, and what type of odor, the water has: ☐ normal/none, ☐ fishy, ☐ sewage, ☐ chemical, ☐ petroleum, ☐ other.
7. If there is surface oil on the water, identify the type: ☐ none, ☐ slick, ☐ sheen, ☐ globs, ☐ flecks, ☐ other.
8. If you have not measured the turbidity of the water estimate whether it is: ☐ clear, ☐ turbid, or ☐ very turbid.
9. Record the season: ☐ dry, ☐ wet, ☐ spring, ☐ summer, ☐ fall, ☐ winter.



Mosquito Larvae Sampling

10. Did you sample a container? ☐ Yes ☐ No. If YES, GO TO STEP 13.



Sampling in Water Bodies, such as puddles, tire tracks, phonds, and streams:

11. Dip the net under the surface water to 1 meter or less depth along the side of the water body. The net is maintained at an acute angle with respect to the water surface. (See Figure 1 below.) If the water body is too small or shallow for the net size, sample the entire water body.



Figure 1: Sampling in non-container sites.



12. Follow the instructions below for sorting and identifying the mosquito larvae. Take 5 samples. Wait 5 minutes between each sample. GO TO STEP 17.



Sampling Containers

13. Locate all water containers in and around the house/school.

14. Write a unique identification number (ID) on each water container. (Students can use a permanent marker to label the containers.) Write the corresponding container IDs on your *Mosquito Larvae Protocol Data Sheet*.

15. Complete the information about the containers in the *Mosquito Larvae Protocol Data Sheet* (ID, container type, water level, lid, lid type, container color, and cleaning frequency).

16. Collect larvae. The method depends on size of container.

a. Large water containers are water containers that can hold 500 L or greater of water. (Examples include large water jars, water pools, and cement tanks.) Sample large water containers by dipping the net in the water, starting at the top of the container, continuing to the bottom in a swirling motion and sampling all edges of the container. (See Figure 2.)



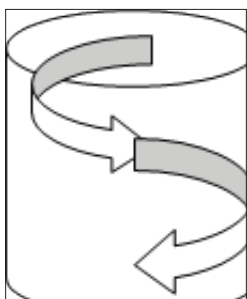


Figure 2. Large container sampling technique in a swirling motion.

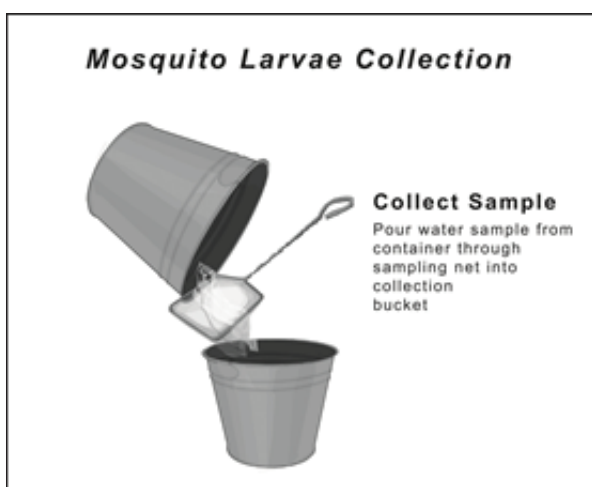


Figure 3. Small container sampling technique. The container could be anything that you can pick up and pour through a net into a bucket.



After sampling the water:

17. Empty the sample onto a white plate or pan. You may need to gently squirt the net to remove any organisms or debris in the net. (See Figure 4.)



Figure 4. Use a squirt bottle to remove debris and larvae from net.

18. Use a hand lens or magnifying glass to examine what is in the water. Use the *Mosquito Identification Key* or other identification key to identify the genus in the field. Place the organisms that are not mosquitoes back into the water. If you are identifying to the genus level, discard the mosquito larvae when finished identifying.
19. If identifying the mosquito larvae to species, place mosquito larvae with a small amount of water from the container in a plastic bag and close it with a rubber band. Make sure to leave some air space in the bag. Label the bag, sample number 1, 2, 3, 4, or 5. If taken from a container, include the container ID. (See Figure 5.)

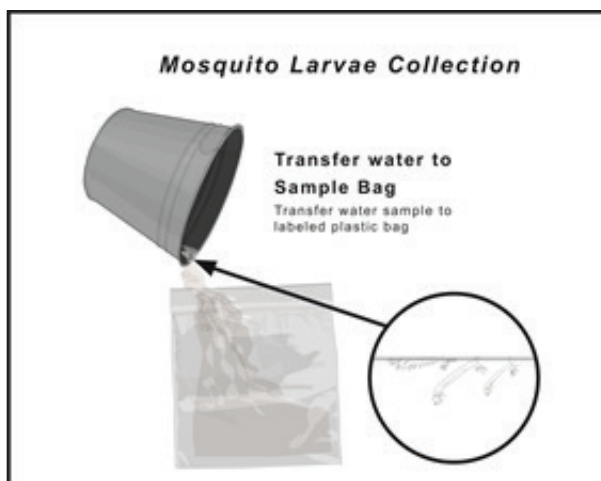


Figure 5. Place water samples in bags with labels.

20. You may bring mosquito larvae to the lab. If you haven't done so already, identify to genus level by eye or by using a hand lens. Identify to species level by using a Microscope and *Mosquito Identification Key* or other identification key.
21. Record number of each mosquito genus or species on the Data Sheet.

Welcome

Introduction

Protocols

Learning Activities

Appendix