Culturing Vinegar Eels

Live Material Care Guide

Background

Turbatrix aceti, or vinegar eels, are free-living Nematodes that are relatively easy to culture. Vinegar eels are particularly good study organisms for biology students because they have virtually transparent bodies. Digestion is readily visible using a compound microscope, and the development of larva can often be observed *in utero*. Eggs are fertilized internally, and a single female may give birth to as many as 40 live young at a time—pretty amazing considering they reach a maximum size of only 2 mm.

Although many Nematode worms are parasitic and often cause harm to the plants and animals they thrive on, vinegar eels feed on the "mother of vinegar" fungus and bacteria found on the bottom of non-pasteurized vinegar containers.

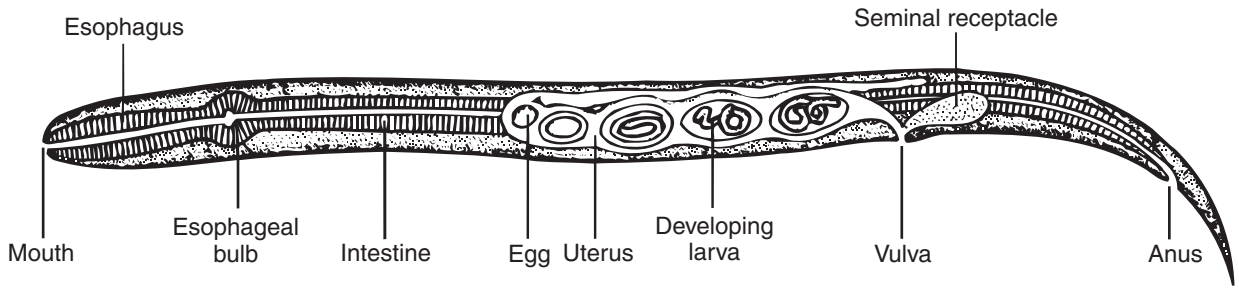

Figure 1. Female Vinegar Eel *(Turbatrix aceti)*

Culturing/Media

Commercial vinegar has been pasteurized to inhibit the growth of organisms, so bulk, non-pasteurized vinegar should be used as a media source for vinegar eels. Unpasteurized apple cider or cider vinegar work best. Add approximately 200 mL of vinegar to a suitable-sized glass culture dish or plastic container (a quart size works well) along with a few small slices of apple. Introduce the vinegar eels into the culture container and loosely cover to slow evaporation. The cultures should be aerated by forcing air into the liquid using a clean pipet. Keep the cultures at room temperature and out of direct sunlight.

Subculture at least 4 times per year by adding approximately a cup of old media containing vinegar eels to a new culture with fresh bulk vinegar. Monitor culture vigor using a stereoscope. Placing a dark piece of paper underneath a Petri dish makes the organisms easier to view. With regular subculturing, vinegar eels can be maintained indefinitely.

Tips

- If bulk vinegar is not available, pasteurized apple cider vinegar can be used as long as it is allowed to sit uncovered for 3–4 days before adding eels to the culture.
- To view the internal structures of the vinegar eels, remove them from the culture using a wide-stem pipet. Prepare a depression slide using a hanging drop of vinegar from the media.
- Some sources refer to vinegar eels as *Anguillula aceti* rather than *Turbatrix aceti*.

Disposal

Please consult your current *Flinn Scientific Catalog/Reference Manual* for general guidelines and specific procedures, and review all federal, state and local regulations that may apply, before proceeding. Vinegar eel cultures may be disposed of according to Flinn Suggested Biological Waste Disposal Method Type IV.

Publication No. 10587
061616

Materials for *Culturing Vinegar Eels* are available from Flinn Scientific, Inc.

Catalog No.	Description
LM1101	Vinegar Eels, 30
LM1102	Vinegar Eels, 100
AB1264	Culture Dish, 300-mL
AP2253	Wide-Stem Pipets
ML1378	Depression Slides

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.