

# Identification

## REARING FRUIT FLY LARVAE TO ADULTS FOR THE PURPOSE OF IDENTIFICATION

### BASIC METHOD

Pupae need to develop in a dry medium such as sand or sawdust. Once flies start to emerge they need to be provided with access to water and sugar for survival and for colour development. After about four days they may be collected, killed and prepared for study (Lawson et al. 2003).

### YOU WILL NEED

- a clear plastic tub with a well fitted lid with a large hole cut in it
- mesh to put between the tub and the lid
- river sand or untreated sawdust as a pupation media
- sugar cubes, water, chux type sponge, inactive torula yeast (protein source) - to feed the flies

### PROCESS

- Put about 1cm of sand or sawdust in the bottom of the tub.
- Put infested fruit on the sawdust.
- If the fruit is large, wet and sloppy you may want to put the fruit on another smaller container with a mesh lid, inside the other container, so it drains into that rather than the media.
- Leave the tub somewhere that is roughly the same temperature as outside, away from ants and direct sunlight. If it is cooler and you have access to a controlled temperature room, you may want to keep the fruit at warmer temperatures e.g. 27°C and 70% relative humidity.
- Allow about 5+ days for the larvae to pupate. In cooler conditions or with harder fruit such as apples this may take up to 30 days.
- After 5 days check for pupae that have emerged as adults. Don't open the lid as any adults may escape. Check for adults every day after this.
- Once you see adults they will need the food and water. Put a sugar cube on top of the mesh; put a 3cm slice of the Chux in a small container of water and have one end resting on the gauze so the flies can drink from the wicking Chux. Mix the yeast with enough water to make a paste: put a dob of this on top of the gauze.
- Wait 5-7 days after flies have emerged to kill them. They need this amount of time to fully develop and colour up so they are identifiable.
- You can kill the flies by putting the whole rearing tub in a large freezer.

Note: if you have fruit that may be a quarantine intercept, rearing should only be undertaken in an appropriately accredited quarantine containment laboratory. You may have an exotic and don't want to breed it and have them escape!

## SUPPLIERS

Fermex Inactive Yeast from Lesaffre. See website for contacts in your state

<http://www.fermex.com.au/products/?id=7> (~\$70 for 15kg)

[http://www.fermex.com.au/contact\\_us/](http://www.fermex.com.au/contact_us/)

Inactive torula yeast in smaller quantities can also be purchased from health food stores.