



## **FROGS AND FOOD**

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### **CULTURING FRUIT FLIES (*Drosophila* sp.)**

Equipment required:

- Fruit Fly Starter Culture
- Ventilated culturing container
- Suitable fruit fly culture medium
- Raffia/wood-wool/ corrugated cardboard for pupation and roosting

By far the most popular feeder insect in dart frog husbandry, fruit flies are easy to breed at home and a number of species are available depending on your own preference.

The two most commonly used species are differentiated by their size, namely the small fruit fly (*D. melanogaster*) and the giant fruit fly (*D. hydei*) and the decision to use one or the other is based mainly on the size of your dart frog. *D. melanogaster* can also be found in many forms, including vestigial winged, wingless and glider varieties.

There are a number of methods used to culture fruit flies but there are a few basic principles:

Firstly you need a suitable culturing container. Culture pots specifically designed for fruit fly culturing can be bought from livefood suppliers but they can just as easily be cultured in glass or plastic pint cups with tights or net curtain securely attached over the top with elastic bands. The container must be adequately ventilated to prevent stagnation and mould formation.

Next you need a culture medium. Again a number of ready mixed formulas can be bought from livefood suppliers but perfectly adequate culture media can be made at home. The recipe I use is:

1 cup fine porridge oats

1/3 cup dried potato flakes (not powder or granules as these can contain dairy products which make the culture stink to high heaven)

1 tsp sugar

1 tsp dried bakers yeast

Enough orange juice or water to make the medium moist but not sopping wet (a little dry medium at the bottom is good as the medium becomes more liquid with time)

I also add 4-5 tablespoons of vinegar which I have found to reduce mould formation (although you can buy Nigapin which is a mould inhibitor) as well as vitamin drops or multivitamin powder.



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Place this in your container to a depth of about 3-5cm (depending on size of your culture pot).

Next you need a suitable material to place on top of the culture medium which will provide structure for the maggots to pupate on; raffia or wood wool is perfect for this and is easily available.

After letting your culture medium ferment slightly (normally about a day) you can add your flies from your starter culture. I add at least 100 flies but usually more, if you do not add enough you will not have enough maggots produced to work through the medium and prevent bacterial and fungal overgrowth, resulting in poor or crashed cultures.

Keep your cultures at around room temperature. Any higher may lead to drying out of the medium. The first generation of *melanogaster* will appear after 7-10 days and *hydei* slightly longer (14-18 days).

A feature of *D.hydei* is that the male flies take about week in order to become fertile so either use a mix of old and new flies to seed a new culture or wait until after the first flush of flies.

Other species of fruit flies commonly used are:

*Drosophila funebris* - a species slightly smaller than *D.hydei* and noticeable by their bright red eyes. Culture as *D.hydei*.

*Drosophila mulleri* - a wingless species slightly larger than *D. melanogaster* resembling an ant more than a fly. Culture as *D. melanogaster*.

*Drosophila buzzatti* - a vestigial winged fly (so flightless) cultured as *D. melanogaster* but slightly larger in size.

One disadvantage of fruit flies is that cultures can crash for apparently no reason and so it is always wise to have more cultures than your anticipated need. Another is that unlike crickets you are unable to gut load them prior to feeding to your frogs so dusting with a suitable vitamin powder is required according to individual needs.

Mites represent the biggest problem associated with fruit fly culture. They compete for food with the flies/larvae and some mites actively harm the insects themselves. Keeping cultures on mite paper or in shallow pans of water can prevent spread between cultures. Often mites arrive in starter cultures or from older cultures and dusting your flies prior to seeding a new culture can prevent spread this way. Some evidence has shown mites can be reduced by misting your cultures. Microwaving the porridge oats used prior to making culture medium may reduce incidence of grain mites.

On every forum dedicated to dart frogs you will find many discussions about reducing or eliminating mites in cultures.