

## Weighing tadpoles

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Where the variation in tadpole weight within replicate tanks is not required, or where tadpoles are too small to be easily weighed individually, tadpoles can be weighed 'on mass' very accurately with the minimum of disturbance or harm to their wellbeing. This technique is commonly used in studies of tadpole growth up until metamorphosis when individual weights must be taken.

Front leg emergence is the best stage to measure metamorphosis in anurans. The development of different organs in tadpoles during metamorphosis, and the relative rate of each metamorphosis stage, varies considerably between species.

Front leg emergence is the most defined stage of metamorphosis. The growth of the back legs from bud to final form occurs during the whole metamorphosis process. However, front leg emergence generally occurs over a 24hr period. Then most tail absorption occurs soon afterwards. However, the period of the final stage of tail absorption can be prolonged and vary greatly between species.

Depending on the size and number of tadpoles the balance should be accurate to at least 0.1g and preferably to 0.01g. The method described below is particularly valuable where very small tadpoles are weighed. With small tadpoles the weight of water can be considerable. As long as they are kept wet tadpoles can last out of water for minutes without harm. However, tadpoles are delicate and must be handled gently.

### Sampling tadpoles

*Right.* Prepare the scales by placing a piece of absorbent paper towel several layers thick on plate. On top of this place a piece of fiberglass fly screen to prevent tadpoles adhering to the paper. A cylinder cut from a plastic bottle is then placed over the fly screen to restrain tadpoles. The balance is then zeroed.



*Left.* To sample tadpoles a net of appropriate size is used. Particularly for small tadpoles a white or light colored net should be used. Otherwise tadpoles may be left in the net. The net should be placed in a container with water. Then gently pour the water with the tadpoles through.

*Right* The tadpoles are quickly and gently poured onto the scale

*Below.* The weight is taken (**Wt1**).



The tadpoles are returned to their tray (at this stage they can be easily counted before adding water to the tray).

The weight of the wet paper, fly wire, plastic bottle is then taken (**Wt2**).

The weight of tadpoles  $Wt = Wt1 - Wt2$ .

