

Handling Drosophila (Fruit Flies)

Most commonly fruit flies are used for genetic experiments. In Order to conduct these experiments it is necessary to separate the male and female Drosophila so that planned crosses can be made. Female flies will not mate for about 10 hours after emerging from the pupal case. If the males and females are separated each 10 hours, a supply of virgin females is insured.

Male and female Drosophila may be distinguished from each other by examining the genital organs on the ventral posterior of the fly's abdomen. Male fly genitalia are surrounded by heavy bristles. The female's are not. Male Drosophila, have a black comb-like organ on the lateral areas of the 4th joint of the front leg. Sex combs cannot be seen without some means of magnification. Abdominal differences in both shape and color are readily distinguished between males and females. The male's abdomen is quite round on the end and is darker than the female's. The female's abdomen comes to a definite V-shape point in the rear. Males are generally smaller than the female Drosophila.

Most Drosophila transfers and examinations are made while the flies are anesthetized. The anesthesia used is usually ether (di-ethyl-ether) although carbon dioxide is sometimes substituted. Ether is the most common and easily used agent. Etherizers can be bought from any of the biological supply houses. The flies should be left in the etherizer chamber only long enough to stop their movement. Flies that extend their wings at right angles from their bodies are over etherized and should be considered dead. Drosophila will be killed or rendered sterile if they are re-etherized too many times in a short period.