Our results show that there was intrapopulational genetic variation for hybridization in both species. This has been already noticed in some reports (Eoff 1975, 1977; Carracedo & Casares 1985). However, since these species appear to be almost completely isolated in nature, natural selection for sexual isolation seems to be improbable. Further work is necessary to understand the origin of sexual isolation between these sibling species.

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Castro, J. and J.L. Ménsua. University of Valencia, Spain. Effect of the seeding site on viability and developmental time of three genotypes of **Drosophila melanogaster.**

Viability and larva-to-adult developmental time are two important components of fitness in Drosophila and they can be related to phenomena such as larval facilitation (Lewontin 1955; Beardmore 1963; Bos et al. 1977; Bos 1979), as well as to concepts of microniches (Tosić & Ayala 1981) and microenvironments (Barker 1971).

Viability and developmental time of three strains of **Drosophila melanogaster** in an uncrowded situation, but with different seeding sites in vials, were studied.

The strains employed here were: a wild strain and two mutant strains for eye colour; cardinal (III, 75.7) and sepia (III, 26.0). A total of 72 newly hatched larvae ±2 hr old were seeded into 10 x 2.5 cm vials with 10 ml of boiled yeast medium according to the following ways: (1) All larvae seeded at the same time

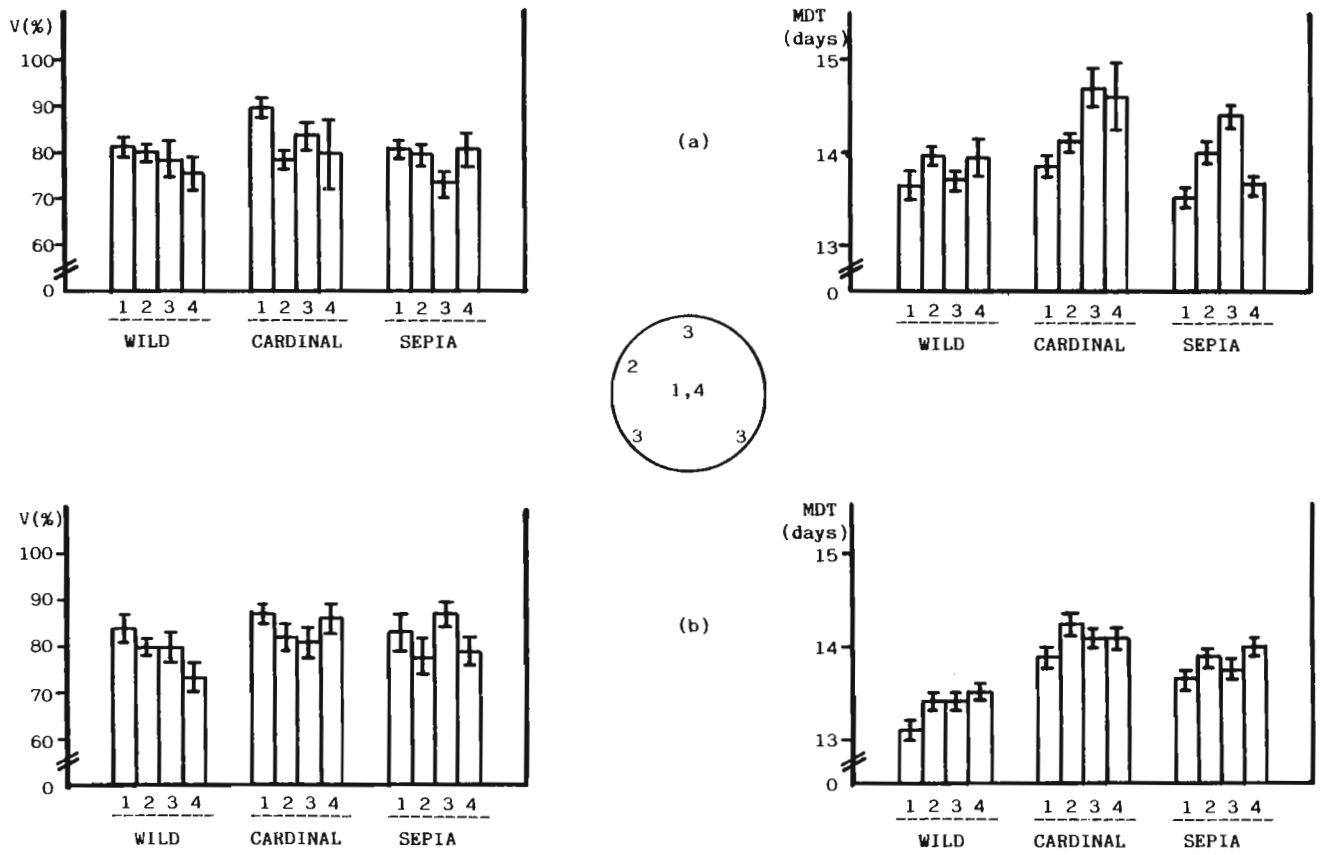

Figure 1. (a) Viabilities (V) and Mean Developmental Times (MDT) according to the four different seeding sites of the strains wild, cardinal and sepia in monocultures. (b) The same as before, but in tricultures. The circle represents a vial with the different seeding sites.

in the centre of food by means of an incision practised with a lancet. (2) All larvae seeded at the same time in a side of the medium just beside the vial wall with incision on food. (3) Larvae seeded in 3 groups of 24 larvae each, separated as far as possible with incision on food. (4) All larvae seeded on the centre of food, without incision. In this case larvae were placed on a piece of paper (0.5 x 0.5 cm) which was put on the surface of food.

Monocultures and tricultures (24 larvae for each strain) were carried out. A total of 8 replicates for monocultures and 10 replicates for tricultures were made. Cultures were incubated at 25±1°C and at 60±5% relative humidity. Data were analyzed by ANOVA and Student-Newman-Keuls test.

Figure 1a shows viabilities (V) and mean developmental times (MDT) for the three strains in monocultures. Viability shows only significant differences among the different seeding sites in the cardinal strain which has a higher viability when seeding in site 1. As regards MDT, cardinal and sepia strains show differences, cardinal being faster in 1 and 2 situations and sepia in 1 and 4.

Figure 1b shows viabilities (V) and mean developmental times (MDT) in tricultures. Though wild strain shows a slight decrease in viability when seeded in the 4th way, no significant differences among viabilities appear. As regards MDT, statistical tests show that wild strain is faster in situation1; the MDT of the cardinal strain remain unchanged in all situations, and sepia is faster in situation 1 and slower in the 4th.

In monocultures, wild strain seems to be unaffected by the seeding sites. Cardinal strain, on the other hand, is slower in situations 3 and 4, it showing that, perhaps it is more sensitive than wild strain to gregarism and to help which may represent the incision of the medium. These ideas are supported by the highest viability exhibited by cardinal in situation1. It seems that sepia has higher sensitivity to gregarism than wild strain though not face to cardinal strain. The incision does not change its response.

In tricultures, viabilities do not show differences among the different seeding sites, while mean developmental times show a phenomenon of facilitation among the strains, mean developmental times being lower in tricultures than in monocultures. The first seeding method gives rise to the fastest developmental rate in the three strains. This result supports some kind of mutual facilitation. This facilitation is present in spite of the existence of the different competitive abilities of genotypes being reflected as differences among the MDT. In this way, the concept of larval facilitation is extended. Moreover, this effect seems to be important for the understanding of genetic polymorphisms. Since in our uncrowded cultures facilitation is put into evidence, it may be thought that under more restrictive conditions its role may be determinant. However, when food and space are limited, facilitation might be hidden under other factors more relevant.

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Chanteux, B., J. Lechien, C. Dernoncourt-Sterpin, M. Libion-Mannaert, S. Wattiaux-De Coninck and A. Elens. F.N.D.P., Namur, Belgium. Ethanol metabolizing enzymes subcellular distribution, in **D.melanogaster** flies homogenates.

A method of homogenization and subcellular fractionation originally described for Rat liver (de Duve et al. 1955) has been slightly modified and used for Drosophila flies homogenates (Liétaert et al. 1984). First, a nuclear fraction (N) is separated from a total cytoplasmic extract (E). From the cytoplasmic extract, four fractions are isolated: a heavy mitochondrial fraction (M), a light mitochondrial fraction (L), a microsomal fraction (P), and a final supernatant (S). The same reference enzymes have been used as for Rat liver: cytochrome c oxidase and malate dehydrogenase for mitochondria, acid phosphatase and beta-galactosidase for lysosomes, NADPH cytochrome c reductase for endoplasmic reticulum, and catalase (which plays a part in ethanol metabolism) for peroxisomes.

Five **D.melanogaster** genotypes have been considered: the strain y v f mal^{bz} lacks aldehyde oxidase (AO) but has a normal alcohol dehydrogenase (ADH) activity; the strain $bAdh^{n4}$ lacks both AO and ADH; the HA and LA lines result from a long term selection for "male sexual activity" combined with brother-sister mating which has given, after 330 generations, a "highly active" line HA and a "lowly active" line LA; the wild e^{+} strain is used as a control. These three last genotypes are endowed with normally high ADH and AO activities. All these genotypes differ in tolerance to ethanol, in oviposition preference for ethanol supplemented mediums, and in larval preference for ethanol supplemented or acetaldehyde supplemented mediums, in relation with their ADH activity level (Deltombe-Liétaert et al. 1979; Hougouto et al. 1982; Depiereux et al. 1985). Adult flies (from 5 to 10 days of age) were used.

The specific activities of the reference enzyme and of the main ethanol metabolism enzymes are shown in Table 1, for the five genotypes. The distribution pattern of the same enzymes for each