

Najera, C. & J.L.Mensua 1982, Analisis de la variabilidad de mutantes que afectan a la sintesis de pigmentos oculares de *Drosophila melanogaster* en poblaciones naturales, XVIII Jornadas de Genetica Luso-Espanolas, Granada, Spain.

Gonzalez, F. and J.Ferre. University of Valencia, Espana. Non-dependence of the eye pigmentation of *Drosophila melanogaster* on light conditions.

Two different studies to test the possible dependence of pteridinic pigment accumulation in the eyes of *Drosophila melanogaster* under different light conditions have been carried out.

Fly extracts (40 heads and 5 male bodies) were subjected to two-dimensional thin layer chromatography on cellulose plates. Quantitative estimation of the fluorescence of the separated pteridines was performed in a Perkin-Elmer model MPF-44B spectrophotometer with a thin layer chromatography plate scanner attachment. Neodrosoplerin, drosoplerin, isodrosoplerin, aurodrosoplerin, sepiapterin, pterin, biopterin, 7,8-dihydro-acetylhomopterin and xanthurenic acid were measured.

A first study intended to find whether light conditions affected the pigmentation during the development of the eye. Oregon-R flies reared at 25°C were kept in the dark from the 1st larval instar. A control in normal (fluorescent) light was reared simultaneously.

Adult flies were analyzed at 9 and 30 days after eclosion. No difference between flies kept in the dark and control flies was found. Thus, light has no appreciable effect either on the synthesis of eye pigments during the pupal stage or on the amount of pigments retained by the adults.

An eye colour mutant isofemale strain (cd: 3-75.7) captured in a cellar, was reared in different light environments to study the possible selective effects of light upon genes affecting the amount of eye pigments. Three different environments were chosen to simulate light conditions existing in the cellar where flies were captured: (i) normal fluorescent light, (ii) semi-darkness, covering the cultures with red and blue filters simultaneously, and (iii) complete darkness, using a black box.

Cultures were kept at 25±1°C, 60±5% relative humidity, in 250 ml bottles supplied with 50 ml of food. They were maintained by a weekly serial transfer system. After 8 months, nine days old flies were analyzed. No differences among the chromatographic patterns of the three cultures were found. This suggests that selective pressure, if it exists, is too weak to be detected under these conditions.

Gonzalez, A. and J.L.Mensua. University of Valencia, Espana. Inversions in two natural populations of *Drosophila melanogaster* from cellar and vineyard.

Data about inversions found in two natural populations of *Drosophila melanogaster* from the locality of Requena (Valencia, Spain) are presented.

The populations studied come from two sites with relatively different environments, above all in regard to alcohol concentration and temperature: inside a cellar and an area of vineyards located 4 Km away from the cellar. Both populations were captured in late October (after the grape harvest).

The possibility of association between lethal chromosomes and inversions in them, was also studied.

One-hundred-and-sixty-one third chromosomes were analyzed for inversions (86 from the cellar and 75 from the vineyard).

Of these 161 chromosomes, 38 from the cellar and 40 from the vineyard were lethal-carrying chromosomes.

For the analysis of inversion, crosses were made with "rucuca" stock which is homozygotic for the standard arrangement in the third chromosome.

Table 1 shows the total frequencies of inversions for the two populations studied. A significantly lower frequency of inversions at the 5% level was observed in the cellar compared to the vineyard.

The types and frequency of inversions per chromosomal arm from the cellar and vineyard populations is shown in Table 2. In accordance with Inoue and Watanabe (1969) the category of the inversions is also mentioned, taking into account their geographic location and frequency.

Table 1. Total inversion frequencies of the third chromosome in cellar and vineyard populations.

POPULATION:	CELLAR	VINEYARD
No. of Chromosomes analyzed:	86	75
No. of Chromosomes carrying inversions:	12	21
Total frequencies of inversions (%):	13.95±2.73	28.00±3.53
t=2.21; g.l.=159; P<0.05		

The two common cosmopolitan inversions (3R)P and (3L)P show lower frequency in the vineyard than in the cellar.

The inversion (3R)P was found in association with the inversion (3L)P in two third chromosomes from the cellar and one from the vineyard.

In this work an inversion [(3R) 86E-92F] which not previously been described is shown in Figure 1. This inversion was found in the cellar population.

A significant association between lethal chromosomes and chromosomes carrying inversions was not observed in either of the two populations studied (cellar $X^2=0.563$, d.f. 1, $0.5 > P > 0.4$; vineyard $X^2=0.450$, d.f. 1, $P=0.5$).

References: Inoue, Y. & T.K.Watanabe (1979), Japan.J.Genet. 54:69-82.

Table 2. Frequency of the different types of inversions of the third chromosome in cellar and vineyard populations.

ARM	INVERSION	CELLAR(N=86)	FREQUENCY(%)	VINEYARD(N=75)	FREQUENCY(%)	CATEGORY
3L	In(3L)P 63C; 72E	5	5.8	6	8.0	common cosmopolitan
	In(3R)P 89C; 96A	7	8.1	13	17.3	common cosmopolitan
	In(3R)C 92D; 100F	0	0	3	4.0	rare cosmopolitan
3R	In(3R)Mo 93D; 98F	1	1.1	0	0	rare cosmopolitan
	In(3R) 86E; 92F	1	1.1	0	0	unique endemic

N = Number of chromosomes analyzed

