

Table 1. IInd chromosome recessive lethal mutations from young and old *Drosophila* males mated in a 3-day brood sequence

Age of male (days)	3	21
Number of tests	10,434	8,370
Number of lethals	34	48
% \pm S.E.	0.326 \pm 0.056	0.573 \pm 0.083

Table 2. IInd chromosome recessive lethal mutation of spontaneous origin in F_1 hybrid *Drosophila*

Brood		Sperm storage in weeks			
		0	4	6	8
I	Tests	13,017	4,543	927	3,750
	lethals	76	36	11	34
	%	0.58	0.79	1.19	0.91
VI	Tests	7,450	1,072	2,493	1,564
	lethals	45	9	25	15
	%	0.61	0.84	1.00	0.96
XI	Tests	1,829	-	277	1,124
	lethals	12	-	3	4
	%	0.66	-	1.08	0.34

Friedman, L. D. and W. C. Kiriazis.
Hiram College, Ohio. Chemically induced
viability mutants in *D. melanogaster*.

Studies are in progress on the relative frequency of chemically induced sex-linked lethal and detrimental mutations and their effect on the viability of *D. melanogaster*. Tests were

made on 3925 X-chromosomes from Basc and Canton-S strains that were treated with the monofunctional alkylating agent ICR 100. The treated males were injected with 0.1% ICR 100 in 0.4% saline. Parents were discarded after 3 days so that the effects measured were on mature sperm. The experimental design and analysis is the same as used previously for similar studies with X-rays (Friedman, 1964, *Genetics* 49:689-699).

Estimates were made on the proportions of complete lethals and the genetic load of lethals and detrimentals induced.

(1) The complete sex-linked lethal frequency induced by this compound in our experiments has been on the average of about 4.5%. There is no significant difference between the lethal rates induced in the + and Basc chromosomes. This differs from the results obtained with X-rays.

(2) The ratio of the genetic load from non-lethal detrimental mutants to that from lethals was .390. The load is computed as the product of the frequency and the average effect on viability. It is a much higher value than any effect of the same kind that has been established for X-ray. This indicates a much higher detrimental effect in relation to lethals that has been induced by the chemical mutagen in comparison to the effect caused by X-ray.

Further studies are in progress including the determination of the induced mosaic lethal frequency. (This work is supported by U.S. Public Health Service Grant GM 11354.)