Table 1: Effect of genotype on O_2 uptake in ul O_2/larva/hour ± SD

genotype	age (hrs., post hatching)					
	2	24	48	72	90	96
+/+	.265±.05					
+/ltd$_2$	.29 ±.15	.926±.37	1.82± .74	7.96±1.4	8.75±3.03	
M(2)l^2/ltd			1.77±1.07	3.99±1.8		5.83±1.79
M(2)l^2/M(2)l^2		.195±.048	.25± .09			
+/ca		.603±.37	2.16± .88	8.32±1.91	9.71±1.71	
M(3)w/ca			2.16± .5	3.24±1.1		4.3 ±1.35
M(3)w/M(3)w		.132±.12	~0			

Sharma, R. P. Indian Agricultural Research Institute, New Delhi, India. Radio-sensitization of Drosophila melanogaster by N-Ethylmalemide.

It has been demonstrated by Bridges (1960) in E. coli and Sharma (1965) in Vicia faba, that N-Ethylmalemide possesses radiosensitizing ability. A preliminary report on the radiosensitizing effect of this chemical in Drosophila is presented here.

2.5 ml of 100 uM solution (pH7) of N-Ethylmalemide was mixed with 2.5 ml of basic medium, comprised of agar (3%), yeast (10%), glucose (10%), propionic acid (0.4%) and water (100 ml), to get 50 uM concentration of the chemical. Freshly laid Drosophila eggs (Oregon-K) were transferred to this medium and allowed to develop up to adult stage. The newly emerged males were collected and kept for two days. One batch was kept as such, whereas the other batch was irradiated with 2400 r of X-rays. The males collected from the normal medium were irradiated with the same radiation dose to serve as control for the chemical-radiation combination treatment. The males were crossed with M-5 virgin females at the rate of one male and three females. The sex-linked recessive lethals were scored in F_2.

From the data (Table 1) it is seen that the combination treatment of chemical and radiation shows about 2-fold increase (5.4%) in the frequency of sex-linked recessive lethals over radiation (2.8%). The chemical alone is not able to produce any mutation. The possible explanation for such radiosensitizing effect produced by X-Ethylmalemide may be due to its ability to combine and inhibit the sulphydryl groups.

Table 1

Treatments	Chemical dose	Radiation dose	No. of Chromosomes tested	% of sex-linked recessive lethal
N-Ethylmalemide	50 uM	-	695	-
X-rays	-	2400 r	634	2.8
N-Ethylmalemide + X-rays	50 uM	2400 r	646	5.4

References: Bridges, C. B. (1960). Sensitization of E. coli to radiation by N-Ethylmalemide. Nature 188:415.
Sharma, R. P. (1965). The radiosensitizing effect of N-Ethylmalemide on Vicia faba. Curr. Sci. (In press).