Espinós, A. High Technical School of Agriculture, Valencia, Spain. The effect of chlorine added to the drinking water upon Drosophila stocks.

During the past summer, and without any apparent reason, the Drosophila stocks of our Laboratory started having problems. At the very beginning, the cultures seemed to be all right and even a great many eggs could be seen in two or three days after cultures were started. The trouble was that most larvae grew to a certain point and then died, and a high percentage of eggs never reached the larval stage.

We tried to vary the composition of the medium, to increase the humidity of the incubator room, to change the cultures very often, and many other modifications, but cultures still went badly.

About July, August and September we lost most of our stocks, as they did not give new generations and old flies died.

On the other hand, in the middle of July the Institute of Public Health decided to add chlorine to the drinking water in the concentration of 0.4 - 0.5 parts per million of Cl free.

It was near the end of September that we had the idea that the drinking water with chlorine used to prepare the culture medium could be the reason for our trouble. We prepared the Drosophila food using rainwater and the few cultures we could save after all summer started going on very well and so they still are at the present moment.

We have begun a further experimental work to measure the resistance of some Drosophila melanogaster mutants to different concentrations of chlorine.

Narda, R.D. and G.S. Miglani. Punjab Agricultural University, Ludhiana, India. Role of protein synthesis in induction of recessive lethals by chemical mutagens.

Mutation studies were conducted on Oregon-K stock of Drosophila melanogaster. Mutations were induced by ethylmethane sulphonate (EMS) and hydrazine sulphate (HZ); protein synthesis was inhibited by chloramphenical (CPL) or streptomycin (ST). The larval life was divided into two halves for treating the larvae with the mutagen and/or protein inhibitor. The mutagens and the inhibitors were mixed with the food, on which the larvae were fed. Frequency of sex-linked recessive lethals in the males emerging from treated larvae was scored, using brood-pattern technique; males emerging from treated larvae were mated successively to virgin Muller-5 females at intervals of two days. Information thus obtained was used to determine the effect of mutagen on various stages of spermatogenesis. The highest frequency of mutation was observed in the third brood and the fourth brood when the mutagens were administered in the first and second larval half, respectively. This implies that the stage transition from spermatogonia to primary spermatocytes is the most sensitive stage to the mutagens used.

Table 1. Effect of protein inhibitors on the frequency of sex-linked recessive lethal induced by EMS and HZ in the peak sensitive period.

Treatment	No. of sperms tested	No. of lethals induced	Frequency of lethals induced
Control	103	0	0.0%
EMS + 0	100	24	24.0%
EMS + CPL	133	10	13.3%
EMS + ST	108	9	8.3%
0 + EMS	105	14	13.3%
CPL + EMS	112	17	15.4%
ST + EMS	125	15	12.0%
HZ + 0	114	13	11.7%
HZ + CPL	125	17	12.0%
HZ + ST	120	10	8.3%
0 + HZ	102	12	11.6%
CPL + HZ	119	7	5.9%
ST + HZ	110	9	7.1%

Feeding the larvae with chloramphenicol or streptomycin in the first half and the mutagen in the second half or the other way around generally decreases the frequency of induction of recessive lethals, this decrease being less when HZ was the mutagen and more when EMS was the mutagen (Table 1). Reduction of mutation frequency by protein inhibitors indicates that protein synthesis is involved in the fixation of lethal mutations.