Schouten, S. C. M. and Egberta J. Tuinstra. Genetisch Instituut der Rijksuniversiteit te Utrecht. The influence of live yeast on the incorporation of ^{3}H-Uridine in the testes of Drosophila melanogaster.

Since the observation that male flies of Drosophila melanogaster under starvation conditions yield less recessive lethal mutations than well-fed males (Schouten, 1963) it was found, that the live yeast in the medium is responsible for a high mutation frequency, especially in spermatids and spermatocytes. The observation that Actinomycin D. (R. Mukherjee, 1965) depresses the induced mutation frequency especially in the same stages, has led to the conclusion that RNA synthesis is important in determining radiation-damage in spermatids and spermatocytes. In order to verify the RNA-synthesis in 2 days old males fed with and fed without yeast, the flies were injected with ^{3}H-Uridine in a 0.7% saline solution. Three hours after injection the flies were sacrificed and the testes were sampled. The radioactivity in the testes was determined with a liquid scintillation counter during 50 min.

The results of the experiments are presented in table I. It is obvious that the incorporation in the yeast-fed animals is always higher than in the yeast-less ones with a P 0.01. Thus it seems that the RNA synthesis in yeast-fed males is more intense.

Table I. Incorporation of ^{3}H-Uridine in 2 day old males fed with and fed without live yeast.

Group	Number of testes	"Counts per injected fly" (50')	Difference
(no yeast fed -	20	81.63	
A (			+ 25.27
(yeast fed +	17	106.90	
(-	20	84.41	
B (			+ 49.76
(+	18	134.17	
(-	30	36.36	
C (			+ 37.52
(+	22	73.88	
(-	16	85.47	
D (			+ 12.51
(+	20	97.98	
(-	21	69.74	
E (			+ 55.44
(+	24	125.18	
(-	20	114.57	
F (			+ 20.60
(+	23	135.17	
(-	28	89.18	
G (			+ 56.87
(+	22	146.05	

Probably it is this RNA synthesis that is at least partly responsible for the higher induced mutation frequency in spermatids and spermatocytes. Further experiments to elucidate this are in progress now. The helpful discussions with and suggestions of Prof. Dr. F. H. Sobels are gratefully acknowledged. Also Prof. Dr. W. A. de Voogd van der Straaten for his help with the scintillation counter.

Lee, Taek Jun. Chungang University, Seoul, Korea. On the polymorphism of color pattern in Scaptomyza pallida in natural populations of Korea.

Three types of color patterns on mesonotum and abdominal tergites can be distinguished in Scaptomyza pallida, referred to as the dark, the light, and the intermediate types. The color patterns are less variable in the light and dark types than in the intermediate one. The intermediate types are more variable in coloration in natural populations of Korea.

Population samples have been obtained in three localities, Mt. Sokli, Mt. Sori and Mt. Sulak. The samples collected simultaneously on May 1965 from three localities show the fact that the intermediate type appear in the higher frequency than the dark and light types, with no clear geographic trends discernible. The relative frequencies, however, vary with season. The data show the percentage of the increase light type in summer. This suggests that environmental factors as well as hereditary factors affect the color pattern in natural populations. The results of these obtained data from three localities are consistent with the assumption that color patterns in S. pallida is controlled by one pair of alleles (D-d) without dominance. The dark (DD) and the light (dd) types are the homozygotes, and the intermediate (Dd) is the heterozygote. These three genotypes are always presented in accordance with the Hardy-Weinberg formula. It suggests that S. pallida exhibits a case of balanced polymorphism in color patterns in natural populations.

Table 1. Observed number of the dark, intermediate and light types in natural populations, and numbers of expected according to the Hardy-Weinberg formula.

Locality	Date	Dark (DD)	Intermediate (Dd)	Light (dd)	Gene frequencies D	d
Mt. Sokli	May'65-Obs.	33(18.86%)	110(62.86%)	32(18.28%)	0.503	0.479
	Exp.	32.99	109.89	32.72		
		X^2 = 1.092	P = 0.70			
Mt. Sokli	Jun.'65-Obs.	579(13.71%)	2750(65.10%)	895(21.19%)	0.463	0.537
	Exp.	578.71	2749.77	895.51		
		X^2 = 12.672	P < 0.01			
Mt. Sokli	Jul.'65-Obs.	105(10.60%)	507(51.16%)	379(38.24%)	0.36	20.638
	Exp.	104.97	506.94	379.08		
		X^2 = 2.344	P = 0.10			
Mt. Sori	May'65-Obs.	80(21.00%)	223(58.53%)	78(20.47%)	0.508	0.497
	Exp.	80.09	222.96	77.96		
		X^2 = 0.846	P = 0.70			
Mt. Sori	Jun.'65-Obs.	102(18.99%)	337(62.76%)	98(18.25%)	0.504	0.496
	Exp.	102.04	336.90	98.06		
		X^2 = 3.697	P = 0.05			
Mt. Sori	May'66-Obs.	376(20.27%)	1062(57.25%)	417(22.48%)	0.489	0.511
	Exp.	376.05	1061.72	417.23		
		X^2 = 34.503	P < 0.01			
Mt. Sulak	May'65-Obs.	331(23.61%)	816(58.20%)	255(18.19%)	0.527	0.473
	Exp.	331.06	815.87	255.07		
		X^2 = 62.068	P < 0.01			
Mt. Sulak	May'66-Obs.	204(19.25%)	625(58.96%)	231(21.79%)	0.487	0.513
	Exp.	204.01	624.84	231.15		
		X^2 = 11.778	P < 0.01			

Grossfield, J. Purdue University, Lafayette, Indiana. Density dependent mating in D. rufa.

Different densities of 4 to 5 day old virgin flies together (after aging) for 7 days in small vials yielded a noticeable difference in the percentage of inseminated females.

	n	%
Single Pair Matings	119	1.7
Two Pair Matings	104	56.7

Similar but less striking density effects were obtained with a Guianian-B strain of D. paulistorum. It would be interesting if such results were obtained with other of the smaller species of Drosophila. Supported in part by PHS Grant GM-11609 and NIH Grant 2T-GM-337-06.