Eisses, K.Th., and M. Santos. Universitat Autònoma de Barcelona, Departament de Genètica i de Microbiologia, 08193 Bellaterra (Barcelona), Spain. E-mail: eisses@cc.uab.es Depending on the stage of decay, banana traps attract *Drosophila melanogaster* and *D. simulans* in different ratios.

Four sites within a semi-abandoned *Opuntia ficus-indica* plantation near Carboneras (Almería, Spain) (Ruiz *et al.*, 1986) were sampled for coexisting *Drosophila* species from September 19 - 23, 1995, with mashed banana traps. The males of *D. melanogaster* and *D. simulans* were distinguished by their genital archs (Bächli and Burla, 1985; Coyne, 1983). The females were separated by their differences in pigmentation pattern of the sixth abdominal tergite (Gallo, 1973; Thompson *et al.*, 1979; Eisses and Santos, 1997) and by the differences in cheek widths (McNamee and Dytham, 1993). In cases of further doubt flies were also checked by means of gel electrophoresis and alcohol dehydrogenase staining (Eisses *et al.*, 1979). The distribution of the two species in the samples taken during five days were significantly different from expected ratios in a chi-square test (Table 1). The samples were lumped for the first three days and the last two days for all sites (Table 2). The proportion of *D. melanogaster* compared with *D. simulans* is significantly higher in the last two days than in the first three days. It appeared that the decaying banana traps became increasingly attractive toward *D. melanogaster*, and more so than *D. simulans*, assuming that the overall species ratio did not change during these five days. The traps did not become repellant toward *D. simulans*. In a release-recapture experiment McInnis *et al.* (1982) found repeatedly 2 to 4 times more *D. simulans* than *D. melanogaster* than their expectation based on the numbers of released flies. Given our data it might well be that "fresh" banana traps are less attractive for *D. melanogaster* than *D. simulans*. The latter species has a preference for low concentrations of acetic acid in a choice experiment, whereas *D. melanogaster* strains have a much broader range of attractive concentrations of acetic acid to deposit eggs (Eisses, 1997). The banana traps in our location had to compete with highly attractive decaying fruits of *O. ficus-indica* or prickly pears nearby. Sampling of natural populations with banana traps for only one or two days probably underestimates the number of *D. melanogaster*.

Table 1. Numbers of *D. melanogaster* and *D. simulans* trapped on five subsequent days in four sites A1, A2, B1 and B2, which represent two sites in two rows of cactus plants within a semi-abandoned *O. ficus-indica* plantation.

Day	A1 mel	sim	A2 mel	sim	B1 mel	sim	B2 mel	sim
19/7	1	21	2	2	1	6	0	2
20/7	6	5	1	6	1	1	2	6
21/7	11	36	13	36	7	35	2	2
22/7	27	51	19	15	52	34	11	3
23/7	13	20	41	40	21	5	27	13
Chi-square	12.99		12.04		35.85		10.28	
	0.010<p<0.025		0.010<p<0.025		p<0.001		0.025<p<0.05	

Table 2. Total numbers of *D. melanogaster* and *D. simulans* trapped in four decaying banana traps on the first three days and the last two days of the sampling period in four sites within an *O. ficus-indica* plantation.

Days	A1,2 + B1,2 D. mel.	A1,2 + B1,2 D. sim.
Sept. 19 - 21, 1995	47	158
Sept. 22 - 23, 1995	211	181
Chi-square	66.6; p < 0.001	

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