

2-14. Mating Preferences and Theoretical Discussion on Courtship in the Male Housefly, *Musca domestica*

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In courtship behavior, the male housefly first orients towards the female, then jumps, and lands on her dorsum. After landing, some males fly away from the female after a few seconds whereas some males move backward to make genital contact. In the latter case, if the female is not receptive, the male also flies away after a few attempts to make genital contact.

In observations mating behavior of the housefly, *Musca domestica*, we found that the male shows a precise preference for the female housefly. Therefore, in the laboratory, we paired 5-day-old male houseflies with females selected from one of four age groups (1-, 3-, 5-, and 7-days-old) yielding four experimental groups. The male housefly displayed clear preferences among the different females and, according to their partnership, each mating period was also different. The males generally preferred to mate with virgin, larger, and more sexually mature females. In particular, most male houseflies preferred to mate with 7-day-old virgin females. However, there were no significant differences in the number of eggs laid by the female aged from 5 to 10 days after emergence. The duration of each mating episode was also different.

Amount of sex pheromone, (Z)-9-tricosene, in females from 1-day until 10-day was also analysed by Gas chromatography.