The behaviour of Drosophila melanogaster larvae during pupation

Godoy-Herrera, Raúl

Cifuentes, Lilian

Díaz de Arcaya, María Fernanda

Fernández, Marianela

Fuentes, Myrian

Reyes, Irene

Valderrama, Carlos

Larval prepupation behaviour of Drosophila melanogaster was analysed to determine the behavioural mechanisms by which larvae select pupation sites. Mature larvae of D. melanogaster perceive and react to humidity, light and the surface texture and consistency of the substrate. These stimuli induce in the larvae hydro- and photoresponses and burrowing, all of which are involved in larval pupation site choice. A selection scheme was applied to understand the genetic bases of preferences for pupation outside and inside the food cup. Pupation outside the cup on a dry substrate was dominant over pupation inside the cup. The results also suggested the presence of additive genes. Larvae of the lines selected to pupate outside the cup formed puparia away from the cup; those selected to pupate inside the cup were found near the food cup. Larvae of the F1 generation obtained by crossing the selected lines had a norm of reaction for prepupation behaviour which was greater than those of the parenta