

The presence of pheromones produced by larvae of *Glossina morsitans morsitans* and *G. m. centralis*, respectively, which attract gravid females and result in aggregation of pupae, is confirmed. Behavioral experiments indicated that females preferred to larviposit over moist sand conditioned by previously allowing larvae to pupariate in it. Similar results were obtained with filter papers contaminated with the prepupariation excretions of larvae and with volatiles collected from larvae prior to pupariation. *n*-Pentadecane and *n*-dodecane were identified as the dominant electrophysiologically active components of the larviposition pheromones of *G. m. morsitans* and *G. m. centralis*, respectively, by GC-EAD and GC-MS analysis of the trapped larval volatiles. Both identified compounds were shown to significantly attract gravid females to larviposition sites in laboratory behavioral assays.