

Abstract

The levels of lipophorin, the principal insect haemolymph lipoprotein, were estimated during the development of solitary and gregarious phases of *Schistocerca gregaria* using single radial immunodiffusion. In the gregarious phase, lipophorin titres ranged from 6.69 ± 0.57 mg/ml in the 3rd nymphal instar to 14.42 ± 2.04 mg/ml in mature adults. The titres in the solitary phase were 3.33 ± 0.59 mg/ml in the 3rd nymphal instar and 8.44 ± 0.67 mg/ml in mature adults. Peak lipophorin titres occurred in mature adults (14.42 ± 2.04 mg/ml) and 5th nymphal instar (8.75 ± 0.25 mg/ml) for gregarious and solitary locusts, respectively. Gregarious locusts had significantly ($P < 0.05$) higher lipophorin titres than their solitary counterparts during the 3rd and 4th nymphal instars as well as in the adult stage ($P < 0.01$). Estimation of the haemolymph protein levels over the same period showed a general increase from the 3rd nymphal instar to mature adult stage in both phases. It is proposed that the higher lipophorin titre in gregarious locusts is a physiological adaptation that ensures high lipid reserves that are necessary to cope with the high metabolic requirements of this phase.