**Abstract**

The potter wasp, Eumenes conica is a solitary larval endoparasitoid, which feeds on host haemolymph of lepidopteran larva during its internal phase. The wasp first constructs the nest, hunts for its prey, the caterpillars, stings the prey, paralyses it and then brings them to the nest which is probably a very highly specialized behaviour. The present study was conducted to determine the levels of cholesterol and phospholipids in the haemolymph of the lepidopteran larvae before and after stinging by the wasp, Eumenes conica. The parasitization of the wasp affect the nutritional physiology of the larva and cause a reduced uptake of food and an increase in the concentration of free sugars in the haemolymph and of glycogen in whole body. The parasitoid larva, causes a reduction of proteins in the host’s plasma and an accumulation of lipids in whole body. Dilution of host haemolymph led to a reduced concentration of lipid in parasitoid larvae and a reduced survival rate. Thus, a sufficient concentration of nutrients in the host’s haemolymph appears to be crucial for successful parasitoid development.