

ABSTRACT

EFFECTS OF METHYL FARNESOATE IN THE REGULATION OF GONADAL DEVELOPMENT IN THE RIDGEBACK SHRIMP, *SICYONIA INGENTIS*

The family of insect juvenile hormones (JH), to which methyl farnesoate (MF) belongs, regulates the development and reproduction of several insect groups. The effects of short-term and long-term MF in the regulation of gonadal development in *Sicyonia ingentis* were investigated. Vitellogenin (Vg), the precursor of vitellin (Vn), (transported through the hemolymph to developing oocytes where it is modified into Vn) can be used as an indicator of female reproduction. Enzyme-linked immunosorbant assay was used to measure Vg levels in the hemolymph of shrimp. Methyl farnesoate increased the gonadosomatic index when compared to controls suggesting a strong correlation to the insect JH model. Vitellogenin and total hemolymph protein levels decrease after MF injections at 1.0 μg compared to 0.1 μg ., suggesting the fate of Vg and total hemolymph protein from the hemolymph into the oocytes. Over the 25-day trial, excessive bleeding caused a decrease in Vg levels and total hemolymph protein.

Isidro Jose Fierro
August 2003