

Title Insect growth regulators and their potential in the management of stored-product insect pests

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Abstract

Concern about the impact of pesticides on both health and environment has resulted in the search for alternative control measures for stored-product insect pest. Amongst such 'alternatives' are insect growth regulators (IGRs), a class of biorational compounds that disrupt the normal development of insects. Because of their selectivity of action, these compounds appear to fit the requirements for Third Generation Pesticides, environmentally benign and safer grain protectants. IGRs have been developed commercially and are being used to control insect pests in agriculture, forestry, public health and stored products. IGRs affect the biology of treated insects, for example, both embryonic and post-embryonic development, reproduction, behaviour and mortality. Abnormal morphogenesis is the observed effect of IGR action on the insects. Many of them are more potent than current insecticides, even against the eggs.

Compared with the conventional insecticides, IGRs do not exhibit quick knock-down in insects or cause mortality, but the long-term exposure to these compounds largely stops the population growth, as a result of the effects mentioned in both the parents and progeny.

The present paper focuses on the previous works on different IGRs available commercially. Also, their possible role in the management of stored-product insect pests has been discussed.