CONTROL STUDIES WITH NUCLEAR POLYHEDROSIS VIRUS ON ARMYWORM, BOLLWORM AND TOBACCO BUDWORM IN COTTON - MEXICO, 1995

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Abstract

Damage caused by *Spodoptera exigua*, *Helicoverpa zea* and *Heliothis virescens* in cotton production is a world wide agricultural problem. In the key cotton growing areas of Mexico, these pests are of primary importance. Data from both experimental and commercial trials have shown that both GemStar (specific vs. *Helicoverpa zea* and *Heliothis virescens*) and Spod X (specific vs. *Spodoptera exigua*) are effective biological control agents for the control of these pests, applied both for early or late control or in an IPM program.

Introduction

Polyhedrosis virus control use has been more and more important with the continuous improvements of formulations. Because of their specific biological effectiveness, zero environmental impact, and competitive costs, these biological products are becoming the basis for IPM programs and in certain circumstances (resistance to conventional pesticides), proving to be excellent alternatives for control of primary pests.

Material and Methods

Control studies for both products were conducted both experimentally and commercially in Delicias, Chihuaua, Gonzalez and Tamaulipas, Mexico under normal local agricultural practices. Experimental studies were applied by hand sprayer, while commercial studies were applied by airplane. All studies were conducted under irrigated cotton with Delta Pine 90.

Results and Discussion

Both products show effective control vs. conventional and other biological commercially available products. GemStar proved effective vs. *Heliothis virescens* and *Helicoverpa zea* when applied conventionally for control of larval instars L1 - L6 (375 - 750ml/ha.), although early damage to bolls was not avoided. Application timing both alone and in mixture with conventionals (at lower rates) must be investigated to avoid early boll damage. Two applications of GemStar are required for effective seasonal control. Spod-X, in both trials, showed excellent control of *Spodoptera exigua* not only as a early application/treatment vs. L1 - L2 at 125ml/Ha., but also as a late application/treatment vs. L4 - L 6 instars at a rate of 250ml. per Ha. vs. conventional products which may have resistance problems.

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