OMICS Group Conferences
Accelerating Scientific Discovery

International Symposia on
Entomology

September 04, 2013 Holiday Inn Orlando International Airport, Orlando, FL, USA

Additives for a Baculovirus against ultraviolet effect

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The addition of moringa, rice bran filtrates (1%) to the nucleopolyhedrovirus (*Spli*MNPV) of the cotton leaf worm *Spodoptera littoralis* (Bosid.) provided almost complete protection to the PIB's following exposure to artificial UV irradiation (30 min) in laboratory test. This work focuses on testing inexpensive additives that may sustain effectiveness of virus biocontrol agent, green tea filtrates and cacao were used as comparative additives. Polyhedra inclusion bodies were mixed with these plant extracts at (1%, 5% and 10%) concentrations exposed to artificial UV in two steps as a thin films in Petri dishes. The different treatments of NPV suspension were bioassayed using neonate healthy larvae. The concentration of 1% of Moringa additive preserved the activity of polyhedral inclusion bodies after UV-exposure resulting in 93.25% mortality of larvae and it was 91.69 %, 90.51 %and 66.42 %for rice bran, cacao and green tea respectively while it was the lowest (15.04 %) with virus alone treatments (positive control) 5 hr post application, similar trend was recorded in the second step using the 5, 10 % concentrations 5hr post application. The mixtures of baculovirus PIB's and additives were measured with spectrophotometer under 400 nm length before and 10 hr post application. The suspension absorbance at 400nm showed narrow differences with moringa followed by cacco, rice bran and green tea respectively. These findings indicate that theses plant extracts could be promising UV protective additives for *Spli*NPV and they should be further investigated in the field large scale to obtain the best formulation for the control of agriculture important insect pest.

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