Project Title: A comprehensive integrated scientific approach for the development of sustainable management strategies of Pink Bollworm (*Pectinophora gossypiella*)

Role in Project: Team Leader at CCRI, Multan

Sponsor: PARB

Date: 01-Jan-18 - 01-Dec-20

Description:

Bt cotton technology found to be very favourable and offered a high level of resistance against the bollworms including *Helicoverpa armigera* (Hubner), *Earias vittella* (Fabricius) and *Pectinophora gossypiella* both in laboratory as well as field conditions. Most of the field studies have shown that pink bollworm larvae consistently survive and damage the transgenic cotton and the farmers have to apply the chemicals to control the cotton bollworms. However, loss of target pest susceptibility as a result of resistance was foreseen to be the greatest problem of transgenic crops. This might be due to the problem of number of *P. gossypiella* (PBW) generations exposed to the similar toxins; the mortality level depends on the degree of resistance or susceptibility of pest or the number of susceptible moths available for mating with moths carrying the resistance genes. In the current project a detailed insight to surveillance, identification and the development of transgenic germ plasm, good agricultural practices based on year round IPM strategies to be employed to fine tune the management programs of pink bollworm in the cotton growing areas of Pakistan. This is a collaborative project of Department of Entomology, University of Agriculture, Faisalabad (Host Organization); Entomological Research Institute, Ayub Agricultural Research Institute Faisalabad; Department of Entomology , Muhammad Nawaz Shareef University of Agriculture, Multan; Pakistan Atomic Energy Commission(PAEC), Islamabad; National Institute for Biotechnology and Genetic Engineering (NIBGE); CRS, Multan; Central Cotton Research Institute, Multan. The research activities at CCRI, Multan are as under

- Development of rearing technology for pink bollworm
- Efficacy of different insecticides against PBW in field and lab conditions.
- Impact of pesticides on the crop physiology/shape/canopy
- Behavior of pink bollworm against different varieties in green house and fields
- Optimum BT toxin required for PBW control in existing cotton varieties
- Study behavior on BT and non BT paired plots
- Modelling of pink bollworm epidomology dynamics
- Optimum timing and stage of spray against PBW.
- Topping fifty days before last picking and its impact on PBW infestation