

2.5.2.5 Legislative Control

It is the control of insect pest by enforcing insect laws by the government to prohibit the spread and multiplication of insect pests in the agricultural fields. There are four types of insect laws in Pakistan. These are:

1. Legislation preventing the entry of pests from foreign countries (quarantine laws).
2. Legislation preventing the spread of insect pest within the country.
3. Legislation regarding the control of established pests.
4. Legislation to govern manufacture and sale of insecticides.

There are three types of legislations to control either pests or pesticides.

- Punjab Agricultural Pest Ordinance 1959
- Agriculture Pesticide Ordinance 1971
- Pakistan Plant Quarantine Act 1976

The Punjab Agricultural Pests Ordinance of 1959 is for controlling all serious pests of major crops. The Government of Punjab has amended Rule-1 of this ordinance in 1971-72. According to this amendment, no occupier of any land shall sow Basmati or IRRI rice nurseries earlier than 20th May or transplant the nurseries later than 7th August.

Quarantine laws are those which govern the import and export of an agriculture commodity to ensure it free of insects.

2.5.2.6 REPRODUCTIVE OR GENETIC CONTROL

It is the control of insect pests by releasing sterile males into their natural populations in the fields. This method consists of following steps:

1. Rear the insects in high number
2. Sterile the males individuals of insect population
3. Release the sterile insects in the field in their natural populations.

The insects can be made sterile by following methods.

i) Sterilization by Radiation

The insects can be sterilized by exposing them to alpha, beta and x-rays, but gamma rays have proved to be the best. For gamma radiation, ^{60}Co and ^{137}Cs are commonly used.

The insect pests like guava fruit-fly, melon fruit-fly, oriental fruit-fly, cabbage looper etc. have been successfully controlled by this method in different regions of the world.

ii) Sterilization by chemicals

In this method certain chemicals are used to sterilize insects. The chemicals are applied before meiosis and thus they prevent gamete production. These chemicals are called Chemosterilants. The chemicals used for the sterilization are Alkylating agents, Antibiotics, Triazines, Urea and Anti-metabolites. These chemicals can be applied to the insects orally, by injection, by spraying etc.

iii) Hybrid sterility

When two closely related species are crossed, the hybrids are all sterile just like a mule. This is called hybrid sterility.