CHAPTER 2

INSECT CONTROL I

2.1 REASONS OF INSECT SUCCESS

Success of the insects on this universe lies in several factors, listed as under:

1. Small size

   Majority of insects are very small in size. Their small body size helps them to protect against predators and in food search.

2. Body structure

   Insect are made up of chitin and strong muscles. Chitin is a hard structure and lighter than bones. It also provides better attachment of muscles. Segmentation and provision of wings also make them successful animals.

3. Haemolymph

   Yellowish green fluid circulates in the body of insects called, Haemolymph. It provides nutrition to different tissues and removes the wastes from the insect body.

4. Tracheal system

   Tracheal system is present in insects for respiration which is considered as the most efficient system.

5. Metamorphosis

   In most insects the growth stages are very distinct. Development of organs occurs during pupal stages, so growth can go unrestricted by the other reproductive activities of adult insects.

6. Short Life cycle

   Most of the insects can complete their life cycles very shortly, so can increase their population rapidly.

7. Fecundity

   It is the ability of insects to reproduce more number of individuals e.g. a honey bee queen can lay up to 2000 eggs per day for weeks during breeding period.

8. Adaptation

   The insects have immense power to adopt in a variety of environments. Insects may be

found in air, water and soil, even in extreme hot or cold temperatures. They are also present on and in the body of animals.

9. Social aspect

Social insects like, ants, termites, bees etc. show an excellent type of social set up. They also perform division of labor and look after their young ones.

10. Persistence in jobs

The insects show the fixedness of purpose in their jobs e.g. a honey bee can visit 2400 flowers in a day to collect nectar.

2.2 HOW INSECTS HAVE BECOME PESTS.

Pest: Any organism that interferes with human interest and cause the economic loss is called a pest e.g. insects feeding on crops, disease causing fungi, crop damaging rodents etc. Insects have become pests due to following reasons:

1. Interference with natural vegetation

Insects were present on this earth before man and were feeding on natural vegetation i.e. grasses, field crops, fruits etc. Man started commercial cultivation of plants for his own interest and started replacing the natural vegetations. So, the insects started feeding on cultivated plants and thus became the pest of crops e.g. army worm appeared first time on cotton in 1970 and rice leaf folder appeared in 1980 in "Kallar" rice tract.

2. Reduction in insectivorous animals

The animals which feed on insects keep the population of insects very low. The population of insectivorous animals or birds is decreasing with the passage of time. As a result, the insects have increased in number and have become pests on crops.

3. Provision of suitable conditions for insects

Many insects feed and breed in plant debris, found in crops. There are many insects which hide during winter season in stubbles of various crops like sugarcane, cotton, maize, sorghum, rice etc. If we don't remove the stubbles, these insects increase in number and attack the following crops in the next season. Similarly, by sowing same crop on a large area also favors the multiplication of insects.

4. Introduction of infested plants

By introduction of the infested plants from one locality to another of the same country or