

SHRI GURU RAM RAI UNIVERSITY

DEPARTMENT OF ENTOMOLOGY ,
SCHOOL OF AGRICULTURAL SCIENCES

Subject: MANAGEMENT OF BENEFICIAL INSECTS (BSAC-605)
Instructor : Dr. Hitendra Kumar, Associate Professor & Head (Entomology)

Q.1 : Describe natural enemies of lac insect and their management

Ans.: The lac insect, *Kerria lacca*, is attacked by several natural enemies, mainly **predators** and **parasitoids**, which cause heavy losses in lac production.

1. Types of Natural Enemies

A. Predators (Most Destructive)

Predators directly feed on lac insects and damage the lac encrustation.

Major Predators

Scientific Name	Common Name	Nature of Damage
<i>Eublemma amabilis</i>	White lac moth	Larvae bore into lac cells and feed on insects
<i>Pseudohypatopa pulverea</i>	Black lac moth	Damages lac crust and consumes insect bodies
<i>Chrysopa species</i>	Green lacewing	Larvae suck body fluids of lac insects

Symptoms of Predator Attack

- Holes in lac encrustation
- Powdery lac debris
- Reduced lac yield
- Weak or dead colonies

B. Parasitoids (Internal Enemies)

Parasitoids develop inside the lac insect and kill it.

Major Parasitoids

Scientific Name	Common Name	Nature of Damage
<i>Tachardiaephagus tachardiae</i>	Lac parasitoid wasp	Internal feeding, destroys host
<i>Aprostocetus purpureus</i>	Lac parasitoid wasp	Reduces population and reproduction

Symptoms of Parasitoid Attack

- Reduced crawler emergence
- Empty lac cells

- Poor lac formation

C. Other Minor Natural Enemies

Group	Common Name	Effect
Ants	Ants	Disturb colonies and feed on insects
Birds	Birds	Peck lac encrustation
Spiders	Spiders	Feed on crawler stage

2. Management of Natural Enemies

A. Cultural Methods

- Use **healthy, pest-free brood lac**
- Proper **pruning of host plants**
- Maintain **optimum spacing**
- Avoid overcrowding

B. Mechanical Control

- Removal and destruction of infested twigs
- Use of **nylon/net bags** around inoculated branches
- Regular monitoring

C. Timely Operations

- Timely inoculation
- Early harvesting
- Synchronization of crop cycle

D. Physical Protection

- Use of **synthetic netting (60–80 mesh)** to prevent moth entry

E. Biological Approach

- Conservation of beneficial organisms
- Maintenance of ecological balance

F. Preventive Measures

- Avoid infected brood lac
- Maintain clean cultivation practices

