

Q.1 : Describe Lac cultivation ,process of lac production step wise ,types of lac

Ans.:

1. Lac Cultivation

Lac cultivation is the scientific rearing of the lac insect, *Kerria lacca*, on suitable host plants for commercial lac production. It involves following process

A. Selection of Host Plants

Major host plants include:

- *Schleichera oleosa* (Kusum)
- *Butea monosperma* (Palas)
- *Ziziphus mauritiana* (Ber)

☞ Healthy, pest-free plants with good sap flow are selected.

B. Pruning of Host Plants

- Done to produce **fresh, tender shoots**
- Timing depends on crop cycle (Kharif/Rabi)
- Ensures better settlement of nymphs

C. Inoculation (Brood Lac Introduction)

- **Brood lac** (twig with mature lac insects) is tied to host branches
- Crawlers emerge and settle on new shoots
- This is the **starting point of cultivation**

D. Settlement of Crawlers

- Nymphs (crawlers) settle within **2–3 days**
- Insert stylets into phloem
- Begin feeding and secreting lac

E. Crop Management

- Protection from:
 - Predators (e.g., *Eublemma*, *Chrysopa*)
 - Parasites
- Removal of unwanted branches
- Maintaining proper aeration

F. Harvesting

- Done when lac encrustation is fully developed
- Harvested lac is called **stick lac**
- Harvest time depends on strain:
 - Kusumi: June–July / January–February
 - Rangeeni: October–November / June–July

2. Process of Lac Production (Step-wise)

Step 1: Collection of Stick Lac

- Scraping of encrusted twigs from host plants
- Contains resin, insect body parts, and impurities

Step 2: Crushing and Sieving

- Stick lac is crushed into smaller pieces
- Sieved to remove large impurities

Step 3: Washing → Seed Lac

- Crushed lac is washed repeatedly
- Removes dye, dust, and insect debris
- Product obtained: **Seed lac**

Step 4: Drying

- Seed lac is dried in shade or sunlight

Step 5: Heating and Filtering

- Seed lac is melted and filtered through cloth
- Removes remaining impurities

Step 6: Sheet Formation → Shellac

- Filtered lac is stretched into sheets or flakes
- Final product: **Shellac**

Step 7: Finishing

- Polishing and grading
- Used in industries (varnish, cosmetics, pharmaceuticals)

Flow Chart of Lac Processing

Stick lac → Crushing → Washing → Seed lac → Heating → Filtering → Sheet formation → Shellac

3. Types of Lac

A. Based on Processing Stage

Type	Description
Stick lac	Raw scraped lac from twigs
Seed lac	Washed and cleaned lac
Shellac	Purified, processed lac in sheet/flakes form
Button lac	Small button-shaped processed lac
Bleached lac	Chemically treated, light-colored lac

B. Based on Strain

Type	Characteristics
Kusumi lac	Produced on Kusum plant; high quality, light colour
Rangeeni lac	Produced on Palas, Ber; darker, lower quality

C. Based on Crop Season

Crop	Harvest Time
Kharif crop	Rainy season
Rabi crop	Winter season