



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

ENT -321 Management of Beneficial Insects 2 (1+1)

Unit III

Lecture-13 Lac Culture:

The lac insect or scale insect *Laccifer (Kerria) lacca* (Lacciferidae: Homoptera) secretes a resinous byproduct which is marketed as shellac.

Life cycle: The female lays about 300 – 500 eggs in the brood cells. The eggs hatch within few hours into tiny crimson red first instar nymphs (crawlers). The emergence of nymphs is called swarming. The nymphs crawl to reach soft succulent twigs and start sucking the plant sap voraciously and start secreting resinous secretions over the body. Lac is secreted by the dermal glands spread all over the body except mouth parts, two breathing pores and anus. They moult thrice so that the 3rd instar nymph develops into the adult. After the first moult both males and females' nymphs lose their legs antennae and eyes and become degenerate. The females stay as degenerate form and continue feeding, growing in size and secreting resin. The male is slipper like with an operculum at the rear end and female is globular. After the final moult males emerge as winged or wingless adults which mate with females and they die afterwards.

Lac strains: They are two strains of lac insects grown in India.

The Kusumi strain grown on Kusum plants (*Schleichera oleon*) and **Rangeeni strain** grown on host plants other than Kusum. The common host plant for Rangeeni strain are *Butea*, *Ziziphus* and *Shorea*. Both strains have two generations per year.

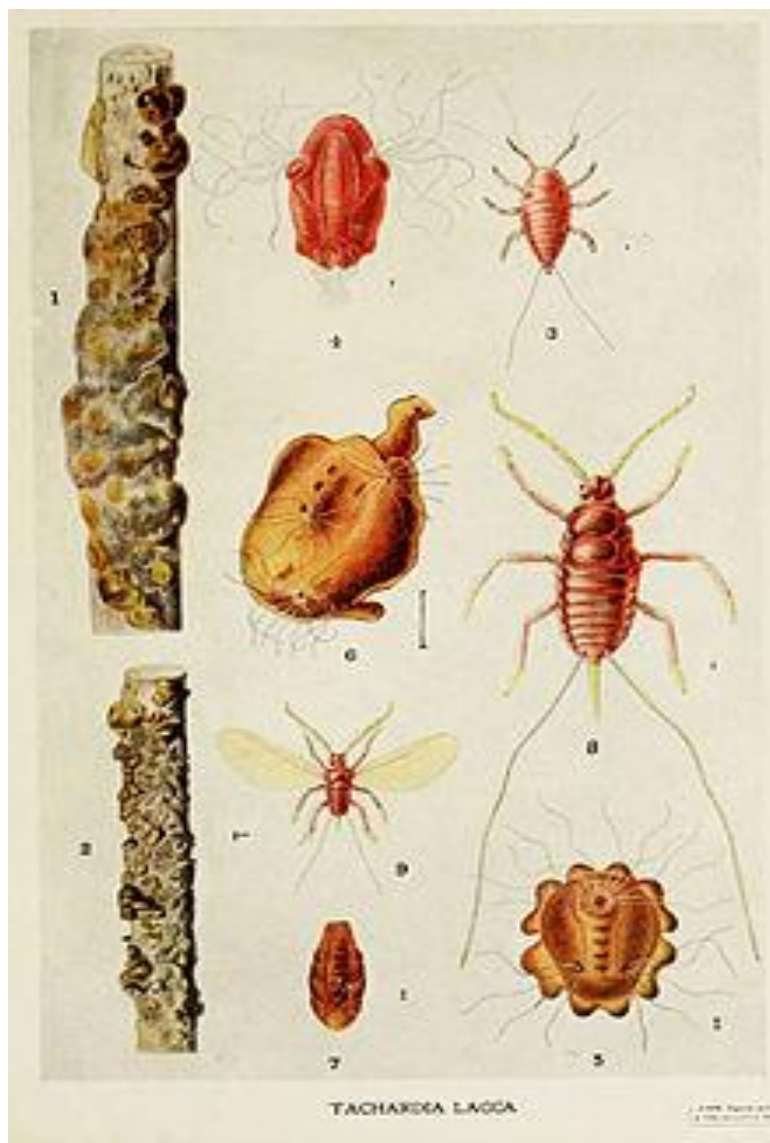
Kusumi: Jethwi (June/ July to Jan/ Feb)

Agahni (Jan/ Feb to June/ July)

Rangeeni: Katki (Jun/ July to Oct/ Nov)

Baisakhi (Oct/ Nov to Jun/ July) four months and 8 months duration respectively.

Agani and Baisaki are main crops contributing to 90% of the lac production and lac obtained from



Kusumi is considered superior because of light colour.

Lac Propagation: When the ovisac is full of eggs appears orange at this time the twigs (brood lac) are cut from the trees of length 6 -12 inches and tied to the branches of host trees. Cutting of lac encrusted twigs when the crop is fully mature is called harvesting. When the nymphs have escaped from the brood lac what is left is called stick lac or phunki. These sticks are kept in water for 3-4 days and raw lac is scraped from these sticks. The scraped lac is crushed lightly and washed with water to remove the impurities and it is called seed lac or chowri. The seed lac is packed into sausage shaped cloth bags. These bags are held over a charcoal fire and twisted when the lac starts melting. The molten lac flows out through the pores of the cloth leaving impurities is called as kiri behind. The pure lac is cooled down to solidify into round button shaped pieces (button lac) or stretched into thin sheets called 'shellac'. After drying the sheets, they are broken into thin small flakes called 'flake lac'. The lac is finally marketed as button lac or shellac.