

Economic Zoology - Lac culture

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Lac is a resinous secretion of a number of species of insects of which the most commonly cultivated is *Kerria lacca*. This insect is native to Asia, and is also known as scale insect. At least half of the lac production occurs in India. This product is used in a wide array of applications. Lac dye is used in food, cosmetics and pharmaceutical products and lac resin is used in food glaze and wood finish like primer, high gloss varnish, sanding sealant etc. *K. lacca* produces a dye and a wax as natural secretions.

Lac culture is the scientific management of lac insects to obtain a high amount of quality lac. This involves selection and maintenance of host plants, their inoculation with healthy lac insects, collection and processing of lac and protection against enemies.

The main host plants are — Kusum, Khair, Plem Ber and insects feed on the plant sap.

Inoculation — 20–30 cm long twigs of host plant with old lac crusts are cut and tied with branches of new plants for propagation. The crust contain eggs laid by female insects.

Life cycle of lac insects — After inoculation the larval hatch and nymph comes out (swarming). The abandoned old crust is called Phanki, which is later removed.

The nymph (reddish) have legs, so they move to new branches and with the help of maxillae & mandibles they suck cell sap of plant and also liberate the exudes. Nymph moults several times and then

most of the body structure are lost. The defecated and exudate form a crust around it.

Harvesting and Extraction of lac - Twigs with thick crusts around it are cut and removed from sites. The granular lac is thoroughly washed with water (A red dye is obtained in this process) and then washed lac is exposed to sunlight for drying and bleaching. Then the granules are melted in a pot over open charcoal fire. The lac melts and comes out of the crust. Shells are prepared from molten lac, then dried and broken into pieces and marketed as flakes.

Shellac is the filtered lac which is almost pure.

Enemies of Lac - Some chalcedonic & lepidopteran insects lay eggs inside the mistle. The nymphs of lac are eaten up by their larvae.

Proper selection of seed lac, killing of predator eggs in harvested lac and use of insecticides greatly minimize damage to the crop.

Product - Three products from lac insects lac dye lac-coax and lac resin are items of trade and commerce.

Distribution - The lac insect is widely distributed in India. India has its monopoly in the production of lac. But in Thailand, Malaysia, Burma and Nepal lac production industries are increasing day by day. Thailand has become the main competitor of India in export of lac.