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MASS QUEEN REARING TECHNIQUES



in Apis mellifera in South India

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Apis mellifera even though biologically similar to *A. cerana*, *A. mellifera* queen rearing in South India, is not carried out. This Project is a novel attempt.

Problems

Non availability of *A. mellifera* colonies,
Bee eater menace,
Beekeepers are not aware of grafting method.
Beekeepers multiply colonies by simple division.
Colonies have undesirable characteristics.
To ensure large supply of colonies with quality queens for commercial bee keeping practices suggested.

Materials and Methods

Pollachi-Anamalai region is known for its high-quality coconuts and identified apiary in 60 hectares of coconut cultivation.

124 *A. mellifera* colonies in the apiary, 24 were selected for this study. The colonies had six frames of strength and sufficient pollen and honey stores.

Experiments on artificial queen rearing done in *A. mellifera* during the months August to September in 2024 and August to October in 2025.

Doolittle method of queen rearing was followed.

Coconut orchards



Coconut



Preparation of cell-builder colonies

Preparation of cell-builder colonies. A cell-builder colony is conditioned with 3 frames of fully sealed brood, honey, and pollen and without queen.

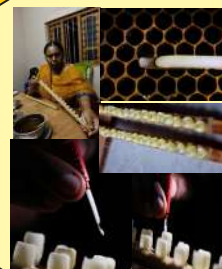
As there was ample supply of pollen, growth of the colony and royal jelly production is optimum.



Queen Rearing

In the *A. mellifera* queen rearing technique, queen cell cup size, double layered cell bars, age of larvae, bee flora, climatic conditions were considered.

It is showed that the highest larval acceptance and adult emergence was noted in the month of August and in Coconut field with abundant pollen source. Out of 120 larvae grafted, 98 larvae accepted and 81% success noted in the grafting procedure.



Sesame



Rubber



MIGRATORY BEEKEEPING



Cashewnut



FINDINGS

Management of bee colonies for honey production on different bee floral crops like Sunflower, Sesame, Rubber, Cashewnut, and for colony multiplication Coconut orchards are considered, and thrust is given to its nectar pollen production potential.

Good quality queens can be produced by breeding the selected maternal and paternal lines. The performance of grafted queens in comparison with the queens reared by simple division was studied and noted that the grafted queen colony was superior to the naturally reared and simply divided colony.
Hence, it is important to standardize queen rearing methodology in *A. mellifera* in order to multiply large number of queens and supply superior-character queens to the beekeepers.

Thumba



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The commonly reared *Apis cerana* is used for commercial beekeeping in South India. Although *Apis mellifera*, L. was introduced successfully in South India, the poor availability of bee colonies and the menace of bee-eaters created a disruption in *A. mellifera* beekeeping in South India. Beekeepers rear colonies by simple division which may have undesirable characteristics. The brood development and honey yield can be increased by breeding selected maternal and paternal lines. To ensure a large supply of colonies with quality queens, mass queen rearing technique has been suggested for *A. mellifera*. There is very little awareness on *A. mellifera* queen rearing. The factors to be focussed upon in mass queen rearing technique are queen cell cup size, double layered cell bars, age of larvae, bee flora, and climatic conditions. Management with maximum brood strength and migration to different floral sources is practised for honey harvesting and colony multiplication for *A. mellifera* beekeeping. Apiary locations and suitable floral resources that are manned by human activity like farms of coconut, cashewnut, rubber, til, sunflower which provide multiple ecosystems addresses social dimensions also. Colonies are migrated to the coconut fields in Pollachi, TamilNadu for queen rearing, Palghat and Mannarkat in Kerala for rubber honey, Kadallur in Tamil Nadu for cashew nut honey and sesame honey, and Guntalpetta Karnataka for sunflower honey. After having adopted this technique, we noted that the highest larval acceptance and adult emergence were in Pollachi, Tamil Nadu in the month of October in Coconut fields. The performance of grafted queens when compared with that of naturally reared queens revealed that the grafted queen colony was significantly superior to the naturally reared queen colony.