

Queen-rearing with *Apis cerana* - the Jensen method

Author: Jensen, Mogens
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Mogens Jensen has been working with the Asian hive bee, Apis cerana in Bangladesh and India for many years. He has developed a new method for queen rearing with Apis cerana, simple and easy to use at village level.

Making things simple is often very complicated! Last year I finally found the missing piece in the puzzle of how to rear successfully *Apis cerana* queens. Tests during a one month training course held at the Danish Beekeepers' Fund/Palni Hills Conservation Council Beekeeping Project in South India were successful. Since then some of the trainers have reared queens and new colonies. More than 50% of the graftings resulted in emerging queens.

Reasons for designing The Jensen Method

- Sustainable beekeeping cannot be based on the capture of wild colonies. Trees and bees are usually damaged during the process. Nesting places are destroyed and less than 10% of colonies remain in the hive after two years. Beekeeping projects tend to cause environmental damage by emptying whole areas of *Apis cerana* colonies.
- The drop-out rate of trainees in beekeeping projects is alarming (and a waste of resources) because of the lack of colonies. From a cost-benefit perspective, overall economy is often very poor because investments in hives, infrastructure or training gives little return because of the shortage of colonies.
- The battle of *Apis cerana* versus *Apis mellifera* (in India and elsewhere) can only be won if *Apis cerana* colonies are available in abundance at village level.
- A reliable method of queen rearing is a precondition for a breeding project, to solve some of the basic problems in *Apis cerana* beekeeping, for example absconding rate and honey yields. The possibility for queen rearing makes strains and ecotypes for a fast-yielding breeding project available.

The Jensen Method

The Jensen Method differs from others in three main ways:

- The grafted queen cup is placed directly on the comb, not on to frames. Before the queen emerges the queen cell can be transferred easily to another colony.
- The 5.9 mm diameter of the queen cup is smaller than the standard 8 mm used for *Apis mellifera*. The larger size is not suitable for use with *Apis cerana*. Cup size is based on measurements taken in *Apis cerana* colonies.
- The size of the entrance to the queen cup is reduced to 5 mm, and this increases the rate of success.

Basics of the queen cup

To make the queen cups two bamboo

sticks are needed. One with a diameter of 5.9 mm and one with a diameter of 5.0 mm. The 5.9 mm stick is dipped in pure melted *Apis cerana* wax three to four times at a 90° angle to the surface of the wax, and then cooled in water. The stick is then tilted to a 45° angle to the wax surface and dipped until a tip forms. Use three fingers to draw the tip longer and make it pointed. (see picture right)



The queen cup is cut with a knife at a length of 6-7 mm from the base. The queen cup is transferred to the 5.0 mm stick and the entrance of the cup is shaped to the size of the stick. (see picture below)



Grafting is the process of moving a one day old worker larva from her cell in to a queen cell. At one day old the larva still has the potential to develop into either a worker bee or a queen bee. If the beekeeper gets conditions

right, inside the queen cell the grafted larva will develop into a queen.

The process of moving the tiny larva needs good light, good eye sight and a steady hand. A shaped piece of matchstick, a toothpick or a special grafting tool can be used to do this. The end of the tool must be smooth and shaped to lift the larva without damaging her.

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