

Management of Swarming in *Apis cerana*

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Often the Asiatic honeybee, *Apis cerana* is maligned as a difficult to manage honeybee, who is highly prone to absconding during dearth periods and swarms excessively during food abundance and or honeyflow periods. Our investigations have revealed that swarming mostly dependent on environmental conditions rather than on genetic make up of this honeybee and it is important to find a management system suitable for beekeepers under conditions of high swarming and under the beekeeping conditions for *Apis cerana* in tropical Asia (Kevan (ed.) 1995).

Punchihewa (1994) recommended a system of colony division where the colony is divided in to two or three daughter colonies with the advent of mature queen cells while retaining the previous seasons new queen in the production colony. As long as the laying queen is a young queen from the previous season, further retention of the swarming impulse was overcome in this method. However, sometimes under practical beekeeping situations the beekeepers tend to retain much older queens in their production colonies and therefore then this method does not work too satisfactorily. Because of this immediate replacement of the existing laying queen with a young (newly mated and laying) queen had to be devised.

The diagrams explain the summary of the mechanism. Fig. 1 explains the situation soon after division (please see Punchihewa, 1994 for details). As shown in Fig. 2 one of the newly mated young laying queen is interchanged with the mother queen in the large production colony which is the main crux of the whole exercise. Therefore, during the honeyflow the production colony will be headed by a very young laying queen, which can effectively suppress the further development of the swarming impulse. This

After Division - Onset of Honeyflow

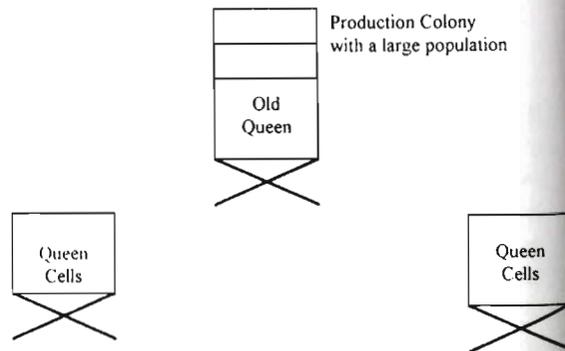


Fig. 1. Soon after division. Combs with mature queen cells are used in making small splits or divisions. Ideally a split will have 2 or 3 combs with about 2500 worker bees.

After Mating

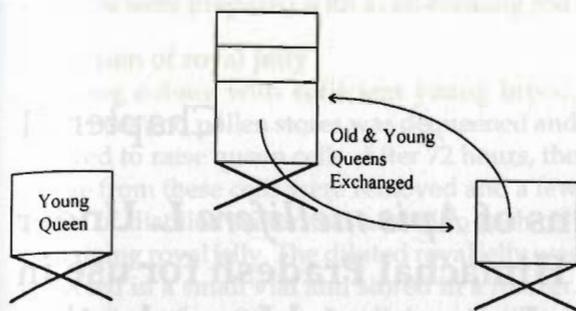


Fig. 2. Soon after young queen started laying, usually about 7-10 days after dividing, one of the young laying queens is exchanged with her mother in the production colony. The use of queen excluder and proper smoking greatly facilitate the whole operation, which can be done in a few minutes.

method can easily overcome the requirement for re-queening, which has effectively overcome the problem of swarming; such as in countries with well developed honey production industry, almost exclusively with *Apis mellifera*.

The exchange of queens can be done very effectively with the use of smoke. Even though *Apis cerana* queen are highly prone to "queen-balling" or "queen-pecking" the proper use of smoke can completely suppress this behaviour and queens were readily accepted in the recipient colony. The use of queen excluders comes very useful here. In actual practice, a queen excluder is placed above the brood box to smoke the bees so that queen would be retained with a thinned-out population of bees, often on a comb or sometimes on the excluder itself, if the smoking was too much. The queen in the first colony to be smoked could be retained on the comb by the use of a simple queen holding cage embedded on the comb, until the next colony is prepared in the same manner. The use of queen excluder and queen holding cages will greatly facilitate the whole operation to be done in a few minutes without any helpers. The queen exchange (Fig. 2) can take place between 7 to 10 days after dividing. If properly matured (well ripened)

During Honeyflow

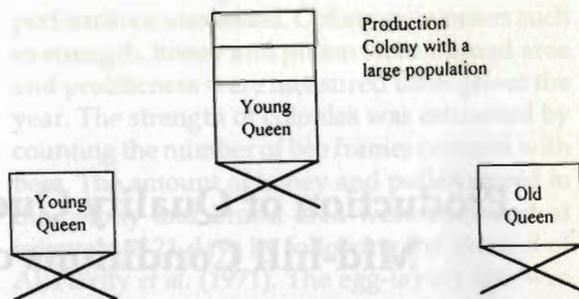


Fig. 3. Therefore during the honeyflow the production colony is now headed by a young laying queen. This young queen can very effectively suppress further building of queen cells and consequent swarming.

queen cells were used in making smaller splits (Fig. 1), the queen would emerge in about a day or two and will mate within the next 3 to 4 days. The detection of the proper maturity of queen cells can easily be determined by the use of "Mirror Box" as explained in Punchihewa (1994). Therefore the whole operation will take only about a week. At the time of queen exchange, while looking for the old queen in the large colony, now thinned out from bees by smoking; it is advantageous to remove any developing queen cells that can be there. Therefore, now *Apis cerana* beekeepers need not worry about "excessive swarming" but can concentrate on honey extraction (Fig. 3).

References

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