

## INSECTS-DISEASES-PESTS

### COMB-BUILDING FOR COLONY INCREASE

A steady supply of new combs is required to provide for colony increases as well as to replace culled combs. A common practice is to substitute an average of three combs, containing foundations, in the brood chamber every year. Larger numbers of comb foundations introduced before and during the honeyflow will significantly reduce the honey yield. The type of beekeeping practiced in western Canada, where some 300,000 colonies are routinely killed off each year, provides an excellent opportunity to use bees and equipment for comb-building after the honeyflow.

A new method of comb-building was developed in 1974 and 1975 at the Beaverlodge Research Station. The frames of comb foundations were prepared during the summer. From mid-August to mid-September when the bees would usually be killed, two supers (chambers) with 19 foundation frames were placed beside each hive chosen for comb-building. Colonies with a population of approximately 5 to 7 kg of bees and free of brood disease were used. From each colony, one brood frame was placed in the bottom super in the middle of the foundation frames. Then the bees with the queen were shaken or blown from the frames to the entrance of the new hive. The combs removed from the original hives were processed normally, extracted and the brood frames were stored. One beekeeper was able to remove the combs and shake the bees from approximately six hives in one hour.

The comb-builder colonies were fed continuously. They used little syrup during the first and second days but later the quantity of syrup removed from the feeders increased rapidly. Fifteen-pound friction-top pail feeders were used to feed the bees. The syrup was 60% sugar and 40% water by weight.

About 4 to 5 days later, the fully built combs from the middle of the brood chambers were moved to the outside walls of the hive.

About 8 to 10 days after the provision of comb foundations the newly built combs were replaced with new comb foundations. The sugar syrup stored in the combs was extracted and used again for feeding the builder colonies (using the same sugar:water ratio mentioned before). Comb-building was repeated with some of the colonies two or three times. As the population declined, the bees were provided with fewer comb foundations. The largest number of combs built per colony was 48. The average sugar consumption (loss) was 0.27 - 0.32 kg per comb built.

With this method, it is possible to double the number of combs per year, without any decrease in honey production. The use of surplus bees (bees which were to be killed) resulted in better quality combs.

The economics of comb-building must be considered by the beekeeper according to the current price of sugar, honey frames and comb foundations.

*Tibor I. Szabo,  
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