



# primefacts

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## Spring management of bees

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### Introduction

Spring refers here to the period September, October and November. During this period, bees may starve in September due to lack of stored honey or may swarm in late October/November. Either way, this is usually the busiest period for bees and beekeepers.

Key aspects to consider during this period are:

- starvation
- disease inspection
- brood manipulation
- re-queening
- creating space for expansion within the hive
- swarm control
- removal of honey crop.

It must be remembered that spring may arrive either later or earlier than average in the area in which your bees are being kept. The coast, particularly around Sydney and further north, will have an earlier spring than Tablelands areas such as Oberon or Goulburn. Many of the major honey flows on the Tablelands occur in summer and autumn, whereas the western slopes and plains and the coastal districts may have major honey flows in winter and spring.

### Starvation

During late August/early September more hives die from starvation than in any other period of the year. This is primarily because the bees consume much of their stored honey during winter. Then the slightly warmer temperatures, the availability of fresh pollen and a light honey flow may encourage the hive to resume brood rearing in earnest. If the seasonal shift into spring is interrupted by more than a week

of cold, wet weather then the colony may quickly use up its stored honey to ensure the survival of the expanding brood nest.

This is when starvation is possible. It can be overcome by moving frames of honey from colonies with plenty of stored honey to those with little. Before doing this it is very important to consider the next point.

### Disease inspection

Early spring is particularly important for inspection of combs for bee diseases, as the bees have consumed a large amount of stored honey and some of the honey may have contained bee pathogens. Also, the bees are heavily stressed due to their greater age and the amount of activity undertaken.

In the early stages of spring it is possible to have a disease in some combs and not in others. Inspect hives during late August or some time in September. It is important to look for symptoms of bee diseases as the highest priority. Also assess how much honey is stored, what condition the queen is in, and the general condition of hive components.

### Brood manipulation

Brood manipulation, a practice used extensively in commercial apiaries, has its benefits and drawbacks. If done properly, it will substantially increase the number of bees in a hive within ten weeks. This practice is usually carried out when the colony has covered most of the frames in the brood box. Conditions should be conducive to brood raising with warm temperatures prevailing during the day and good stimulating supplies of pollen and nectar available.

Brood manipulation requires one brood box and a queen excluder. The practice involves removing two frames of capped brood, or combs of honey or pollen, from the brood box and replacing them with

two empty drawn combs, with worker cells suitable for the queen to lay in, every two or three weeks. These combs should be placed in the centre of the brood nest.

Obviously the floral conditions, strength of the colony and the weather are critical for this practice to be successful in building large populations.

Brood manipulation is not as important if a queen excluder is used over two boxes or if no queen excluder is used at all. However, the brood nest may still be choked out with honey; if so, the manipulation of combs to give the queen empty cells to lay in will be beneficial in increasing the number of worker bees in a hive.

Brood manipulation is normally practised prior to a major anticipated honey flow. Care should be exercised initially in not splitting the brood nest too much. If the bees cannot cover all the combs of brood to keep them warm in cold weather, they will abandon the outer brood combs. The brood in these combs will chill and die. Interference may cause the colony to go backwards rather than increase in numbers. Brood manipulation can double a honey crop if done under the right conditions, but it may also be detrimental to the colony if started too early.

### Re-queening

An early spring inspection of the colonies may reveal failing queens that are not as productive as the next colony. In addition, some colonies may exhibit signs of being more aggressive than others. October onwards is a suitable time to re-queen your hives or even increase the number of hives in your apiary. From October through to the early autumn months, drones are usually plentiful. Thus, if you are breeding queens, the virgins will be adequately mated. If you are buying queens, the commercial queen breeder will be able to supply a mated queen from October onwards.

It may not be necessary to re-queen every year, but the vigour of a young queen will assist the colony in overcoming mild disease symptoms, building up a strong populous hive capable of collecting a large honey crop. Particularly savage hives can be re-queened with a strain of bee which is easier to handle and manipulate.

It is important that a diseased hive is not given a new queen. Such a move will not overcome the disease problem, but will lead instead to the death of the new queen.

### Space for expansion

It is important to recognise a honey flow in progress so that you can add extra combs or extract combs to allow sufficient space to ripen and store the honey crop. It is possible for a colony to fill a honey

super in one week under optimal conditions (on a heavy honey flow with large colonies resulting from brood manipulation). Failure to allow space in the hive during a honey flow will result in a loss of part of the honey crop.

If a honey flow is in progress, use it to draw comb foundation that can be used later as brood combs or left in the honey supers. Each spring you may have combs to cull. These can be replaced by new foundation. Cull old black heavy brood combs, damaged combs and combs with a large area of drone cells.

### Swarm control

Swarming is a natural phenomenon, and is the way the colony reproduces itself. This is done by the old queen leaving the original hive with approximately half the number of workers to establish another hive elsewhere. This is termed a prime swarm. A number of ripe queen cells are left behind. One hatches, destroys the other hatching queens, mates and begins to lay. The whole process may occur within a period of ten days .

A variation of this is when, after the prime swarm has departed, a virgin may hatch and leave the colony with a proportion of the worker bees that remained in the hive. This is termed a secondary swarm or after-swarm. Either way, the colony's ability to collect surplus quantities of honey has been severely reduced. Swarming is counter-productive and undesirable. Not only does swarming significantly reduce the honey crop collected by each hive, it also has social implications when it occurs in urban areas. Swarming can be reduced by the following management strategies.

- Re-queen with a young queen. Older queens have a greater tendency to swarm and some strains of bees are more inclined to swarm than others. It is important to re-queen before a colony shows signs of swarming activity, not during swarming activity.
- Allow plenty of space in the brood nest for the queen to lay in, by brood manipulation. This is an opportune time to draw comb foundation.
- Ensure that the colony has room to store and ripen honey during the peak honey-producing period.
- Remove part of the colony to form a new colony. This may not be desirable if maximum honey production is desired, although this is a good strategy if more colonies are required. Part of the colony can also be removed when swarming is at its peak and then united a month or so later after the swarming tendency has diminished. The practice of regularly destroying swarm cells is only marginally beneficial as the colony may swarm anyway.

- Removing some or all of the honey crop may reduce the possibility of a colony swarming. This is assuming that the colony has plenty of empty combs to continue to fill.

## Removal of honey crop

New beekeepers often ask:

- When should I remove honey?
- How much should I take?

Honey can be extracted in the spring, summer and autumn if floral conditions are conducive to good supplies of nectar and pollen. In spring, the colony has a number of warm months to follow, so the question of how much honey to extract is not a problem. The answer is as much as you wish, particularly in late October/November if the prospects of a continuing nectar supply are favourable.

It is best to leave some honey on each colony if you are unsure of the future.

Removing full combs and replacing with empty or extracted combs will stimulate the colony and encourage the colony to collect even more honey if the flora is still yielding nectar.

Success in hive management is an ever-changing practice, and is different each year, in each location and for different colony conditions. It requires good observation skills and versatility. A beekeeper in one district may be taking honey off hives, whereas in another apiary nearby, the bees may be starving. It is necessary to assess the situation within the area being worked and continually monitor the condition of your hives and the available flora.

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