

Factsheet #401

SPRING MANAGEMENT

Beekeeping is a year round process. Management applied today will affect the colony months later. Winter preparation in the fall will determine the condition of colonies in the spring, while spring manipulation will affect colony performance during the summer season. Management should therefore not only meet current colony needs but also include its seasonal requirements.

Spring management actually begins on a mild day in mid-winter. The lid can be lifted to check whether the colony is alive. If the colony has died, remove the equipment and store. If the colony is alive, determine that there is sufficient food accessible to the bees. Cold weather may prevent the cluster from moving to stored food only one frame away, resulting in starvation. In such situation, the empty frames should be exchanged with several frames containing honey and some pollen. Before inserting these frames, pre-warm them to room temperature. Should there be no food reserves in the hive, place granulated sugar on top of the inner cover as emergency food. To prevent food shortage and starvation in early spring, feed the colony 30-45 kg (60-90 lbs) of sugar syrup or honey in the fall.

By late February (earlier in coastal BC), most colonies have begun brood rearing. Early brood is important as the colony needs to replace its wintered adult bee population. On a mild day, a single frame from the centre of the cluster can be carefully removed and checked for brood, honey and pollen. If brood is absent, spotty or showing raised cappings, one of the following problems may exist:

1. a queenless colony
2. a defective queen (e.g. drone layer)
3. lack of pollen
4. presence of brood disease
5. presence of parasitic mites

Colonies suspected of being queenless should be either united with a strong colony or marked for requeening. Requeening should be done as soon as possible because the colony's brood-rearing capabilities will decline with the aging bee population. At this time of the year, no locally raised queens are available, other than banked queens. Imported queens are available from Australia, New Zealand, Chile or California (for details, see **Factsheet #002 - Importing Queens and Packaged Bees**).

Pollen is the bee's dietary source of protein and without it no brood can be raised. Combs of pollen should be placed directly beside the brood as bees will not cross an empty comb to get it. Should there be insufficient pollen in the hive, a pollen patty, pollen supplement or pollen substitute should be provided. For detailed information on feeding pollen substitutes, refer to **Factsheet #410 – Nutrition and its Effect on Bee Management**.

During initial inspection, note the number of brood chambers occupied by the cluster. If the cluster occupies two brood chambers, the bottom chamber should not be removed. When only one brood chamber is occupied (almost always the top super), the bottom super can be removed. One brood chamber requires less energy for keeping brood warm and the bees have closer access to the entrance of the hive. Before removing the bottom brood chamber, inspect for pollen. Combs with pollen may be added to the occupied brood chamber to stimulate brood rearing.

During inspection, clean the bottom board. Dead bees, debris and moisture often accumulate during winter, sometimes blocking the entrance. Debris removal requires a lot of energy from the bees. For disease prevention, bottom board scrapings should be removed from the apiary and burned.

Spring Feeding

Spring feeding may begin in mid-March. The main purposes of spring feeding are:

1. provide food stores for the cluster
2. increase pollen reserves to stimulate egg laying and replace wintered bees
3. provide a method of medication for the prevention of bee diseases (only when necessary)

Generally, 5 kg (10 lbs) of sugar syrup for each colony is sufficient. The syrup must be thin, prepared by mixing one part water with one part sugar by volume. In case AFB is detected, one teaspoon of antibiotic may be added to each gallon of syrup. Fumidil-B may also be added to the first gallon. Do not add medication to hot syrup but wait until it is lukewarm.

Note: In case brood disease is detected, remove the brood frame(s) and **burn** in order to prevent more serious disease development later in the season (for more information, see **Factsheet #205 - Honeybee Disease Detection**).

There are various methods of feeding sugar syrup to bees. The most common method includes the inverted jar, bucket or pail with small nail holes in the lid, placed over the hole of the inner cover. An empty super is placed over the feeder and covered with the hive lid so that it is enclosed, preventing robbing and heat loss. Other feeding methods include the frame feeder that occupies the space of one frame on either side of the super, and the Miller feeder on top of the hive.

Entrance Reducers

Entrance reducers help to prevent robbing during dearth periods. As regular flight begins in late March or early April, entrance reducers should be placed on smaller colonies, which protects against heat loss and robbing.

Colonies Killed in Winter

A number of colonies die each winter as a result of winter severity, colony weakness, disease, pests, etc. It is important to determine the cause of death so that surviving colonies will not be affected in case a disease is involved. The equipment of a dead colony should be removed from the apiary and placed in bee-tight storage or destroyed when disease has been confirmed.

Requeen or Not Requeen

The easiest time to requeen is in spring. To select a colony for requeening, several factors need to be considered, including last year's performance, overall temperament and age of the queen. Colonies should be requeened annually or every second year. Older queens often experience declines in egg-laying and may become drone layers, produce poor brood patterns, or may suddenly be superseded.

To adopt a systematic queen replacement program with a two-year cycle, requeen one half of the colonies in the apiary each spring. A surplus of queens can be ordered and kept in nucleus colonies placed on top of strong colonies and separated by a solid inner cover. The nucleus colonies can be used for emergency requeening, be united with a weaker colony, or allowed to build up on their own during the season.

Increased Self-Reliance

In early spring, only imported queens can be used, as locally produced stock will not be available until the second week in May. Instead of applying a management program that depends on the availability of queens in early spring, one could also requeen in June and July with locally produced high quality queens at lower prices. At that time, requeening will cause minimal disruption to brood rearing. However, requeening at the height of season is not attractive to many beekeepers because it impacts honey production. Alternatively, wintered colonies can be stimulated in the spring to increase population so that splits can be made when queens become

readily available. The nucleus colonies established from the splits will each receive a young queen. They will be placed in a separate apiary for the remainder of the season and prepared for winter in the fall.

After honey harvest, the originating colonies from which the splits were made can be used to bolster the nucleus colonies, where needed, or killed off. Next spring, the wintered nuclei will build up to become the honey producing colonies, while they in turn will produce a split in June-July. Average winter mortality should be taken into account for establishing the correct number of nuclei each summer. The success of this "15-month" management cycle is dependent on experience, quality of stock, locality and average wintering success. Attempts to incorporate this system should be done progressively over a period of several years.

03/12