MAAREC
Mid-Atlantic Apicultural Research & Extension Consortium
Delaware, Maryland, New Jersey, Pennsylvania, West Virginia and the USDA cooperating

EARLY SPRING MANAGEMENT

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Early spring management is primarily concerned with sufficient food stores and secondly with disease and mite control. Colony stores can be evaluated by tipping the hive from behind to assess weight, or checking the location of the cluster in relationship to available foods. Colonies should not be opened until the temperature is above 40°F, preferably when the sun is shining and during midday so that the bees have adequate time to recluster if necessary. When checking the location of the cluster, avoid disturbing it. Having adequate supplies of honey and pollen located above and to the sides of the cluster is of primary importance since once brood-rearing begins early in January the cluster may not leave the brood area to maintain contact with its food reserves.

In the fall, bees normally cluster between the combs near the bottom of the stored honey. During the winter, they gradually eat their way upward between the combs. As the cluster reaches the top of the hive, food reserves are depleted. Bees will not go down in cold weather to get to food even if it is present. If the cluster is near the top of the hive, emergency feeding may be necessary. Check closely to see how much honey is available to the bees on either side and above the cluster.

Colonies found to be short of stores before late March or early April are difficult to deal with. Feeding sugar syrup in early spring may cause problems for colonies in cold climates. In cold weather bees may not take syrup. Also, the bees have problems inverting the sucrose and handling the excess water. Combs of honey in storage, from colonies with a surplus, or from dead colonies can be used to feed bees if you are certain they are free of disease. Place the frames of honey as close as possible to the cluster without disrupting it. Or, if available, an entire super can be placed on top of the needy colony.

A second way to supplement food stores is to feed sugar candy made by using the following recipe:

15 pounds of sugar
3 pounds of glucose or white corn syrup
4 cups of water
1/2 teaspoon of cream of tartar

Dissolve the sugar in the water by stirring and heating the mixture until the temperature rises to 242°F on a candy thermometer. Let the syrup cool to 180°F, then beat until thick. Pour the candy into molds lined with wax paper. The mold should be about 8 by 10 by 3 inches thick. After the candy has hardened, place the cake of sugar on two small half-inch square strips of wood in an empty super above the cluster of bees. Cover the candy and the space around it with cloth or newspaper to keep it warm.

Dry granulated sugar may be poured around the hole of the inner cover or spread on a piece of paper above the frames. However, in order to take full advantage of the sugar, colonies must be strong, temperature warm enough so the cluster can be broken, and adequate moisture available. Any dead colonies should be closed up so they are not robbed during periods of warm weather.

Once the daytime temperatures increase enough to allow easy movement of the cluster and occasional flights, then a heavy sugar syrup is recommended (2 parts sugar to 1 part water by volume or weight). Feed only inside the hive. A pail or jar over the hole in the inner cover works well since the top of the hive is the warmest area, and is the place where the bees are normally clustered and raising brood. Usually about six holes made with the tip of a 4 d nail are sufficient. Surround the feeder with an empty super, and cover it with several layers of burlap or newspaper.

The syrup can also be fed by using a division board feeder or poured onto both sides of an empty drawn comb, getting as much syrup into the cells as possible, and placing it close to the cluster. The entrance or boardman feeder does not work in cold weather. The syrup gets too cold and the bees will not move down to access it unless the weather is very warm.

Feeding sugar syrup in the spring may not only save the bees from starvation, it also acts as a stimulant for brood rearing. CAUTION: once you begin supplemental feeding, it should be continued until natural supplies of nectar become abundant, otherwise the bees may starve.

Pollen must also be present to raise brood. Check to see that sufficient supplies are stored in the brood area. Pollen supplies can be increased or supplemented with pollen substitutes that are available from bee supply dealers.

During April, colonies should be thoroughly inspected and cleaned up. This will make management during the rest of the season easier. However, be careful not to chill the brood. When the temperature is above 50°F and there is little or no wind, brood may be hastily examined, but should not be exposed for more than a minute or two. When the temperature is around 60°F, it is safe to remove frames, and thoroughly examine colonies. In addition to checking food stores, you should look for brood (an indicator of the presence and quality of the queen) and disease. Clean out the entrances and scrape the bottom boards. Remove propolis and burr comb from the frames. Replace old and damaged combs as

you find them. Reverse the hive bodies if necessary; the queen may be locked in the upper hive body which limits the size of the brood area. Do not reverse the hive bodies until the weather has stabilized and there is little chance of a sudden drop in temperature.

Colonies lost during the winter should be picked up as soon as possible, and the cluster of dead bees removed before they mold and decompose, spoiling the combs. There is no need to try to remove all the dead bees from the cells. They will dry up and can then be shaken out or left for the bees to remove. Equipment to be stored may be placed on active colonies which will remove the dead bees in the spring. Honey that remains will absorb moisture and ferment. If you are certain it is free of disease, use this honey on colonies needing winter feed or feed to newly installed packages or nucs. If ETO fumigation or radiation is not available, combs from colonies which have died from American foulbrood should be destroyed. The hive bodies, supers, bottom board, and lid may be saved by scorching or boiling in lye water.

Colony stores during April must be carefully monitored. As fresh pollen becomes available, it serves as a strong stimulus for brood rearing. As a result, the size of the brood area may increase faster than stores are replenished. At this time of year colonies often run a tight line between available food and starvation. If April is warm and good flight weather occurs, no feeding may be necessary. However, if the weather inhibits flight activity, strong colonies with large brood areas will deplete food stores rapidly. Anytime that a colony has less than 20 pounds of food (3 full depth frames of honey), it should be fed. Sugar syrup (1 part sugar to 1 part water by volume or weight) will be the best source of food at this time.

Due to the introduction of varroa and tracheal mites into the United States, mite control is necessary if colonies are to survive. Honey bee mites are now so wide-spread that beekeepers should assume their bees are infested even if they have not seen mites. Typically, colonies are treated for mites in the late summer or early fall. However, it may be highly advantageous to treat, especially varroa, in the spring. Also, if colonies were not treated for mites the previous fall, they should be treated in the spring. Although we don't understand why, treating mite infested colonies with terramycin seems to help them do better. All drug and chemical control treatments must be completed before supers are placed on colonies and the honey flow begins.

For more complete information on controlling honey bee mites, visit the MAAREC website or see the following MAAREC bulletins:

- Varroa mites
- Tracheal Mites
- Integrated Pest Management (IPM) For Beekeepers
- Chemicals Approved for Legal Use in Honey Bee Colonies

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

MAAREC, the Mid-Atlantic Apiculture Research and Extension Consortium, is an official activity of five land grant universities and the U. S. Department of Agriculture. The following are cooperating members:

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Participants in MAAREC also include state beekeeper associations, and State Departments of Agriculture from Delaware, Maryland, New Jersey, Pennsylvania and West Virginia.

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