

Rearing Carnica Bee for High Production in China

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Spring Management

An important characteristic of Carnica bees is that the colony collects pollen in early spring and begins to rear brood. So development of the population is fast. This means that they are good at making full use of spring honey-flow resulting in high honey yields. Therefore, colony management is vital for high production of bees in spring.

Shortening beeway

Shortening the beeway is a important measure as it enhances population density in a brood-rearing colony, stimulates the queen to lay more eggs, and increases and maintains hive temperature. Combs of a strong colony should be used to replace combs of a weak colony in order to balance colonies within the apiary. At the same time, mite infestations should be controlled completely. A feed should be given when sterilising the hive, and workers allowed to make a cleaning flight. Then, the hive should be kept warm by covering it with a quilt.

Feeding pollen

Pollen that is to be fed to the colony should be completely sterilised so as not to spread disease. Experiments have shown that composition of

amino acids in sterilised pollen is the same as in non-sterilised pollen. Feeding the colony with this pollen will cause no harm to developing brood or bees.

Providing water

With weather being cold in early spring, brood-rearing needs water. A water-feeder should be placed at the entrance of the hive so that bees do not have to fly outside to collect it. Water should be kept clean and supplied continuously.

Adding combs

In normal climatic conditions, combs should be added to the hive every seven days for the first three times. When new bees emerge and the weather becomes warmer, the intervals between adding combs should diminish. According to the quantity of eggs laid by the queen and the climatic conditions, supers should be added to a hive of ten frames as the colony reaches its peak population.

Adding eke

When adding eke, five or six pieces of good new comb should be left in the hive for the queen to lay eggs, and four or five pieces of poor old comb and sealed brood should be placed into eke. If the colony has two queens, one should be

removed to another hive to build a new colony. Generally, only a single queen is used.

Management in honey-flow periods

Building combs

At the beginning of honey-flow, the colony has abundant nectar and pollen, the queen is actively laying eggs, there are many combs of sealed brood and new bees are emerging, so the colony suffers from congestion. At this time, workers increase rapidly. Foundation comb should be added to the hive every three days as this will stimulate workers to make new comb for the queen to lay eggs, and will effectively reduce swarming. The workers from new combs are strong and healthy; they are good forage collectors and keep the colony strong all year round. A colony can build five or six pieces of new comb every year; poor and old comb should be replaced at this time.

Strengthening production

In honey-flow periods, nectar and pollen resources are most abundant. Workers should be feeding the brood. When the colony develops to its peak and to prevent swarming, two pupate combs of emerging cells should be drawn out of every strong colony and placed in an empty hive. Ten combs can be used to build a new production colony. At the same time, frames can be added to old colonies according to need in order to increase production and reduce swarming tendency.

Temperature control

In summer, hot weather affects the ability of the queen to lay eggs and workers to collect forage, so reducing the temperature in the hive is important. Hives can be placed where there is little heat radiation such as under the shade of

tree or in a cool shed. Water can be sprinkled on to the lid of the hive or the hive itself covered with wet towelling. This also provides water for the bees.

Fall and Winter Management of Colony

Carnica bees originated in the Alpine area of Europe, so these bees are well adapted to a climate of long harsh winters and hot summers. In autumn, as nectar and pollen are scarce, the quantity of eggs laid by the queen and the rate of brood-rearing are rapidly cut down. Generally, a small colony can well adapt to winter.

The following measures should be adopted.

- A new queen can be reared in autumn because she will be highly active at laying eggs and take only a short time to lay five or six pieces of brood comb. This can ensure a colony with suitable bees and brood well adapt for winter.
- When the quantity of queen-laid eggs is low, the queen should be stopped from laying more eggs in order to prevent workers foraging and using up too much energy as this will shorten their lives and make the colony weak in early spring. Brood-rearing should also be stopped at this time. Workers of new emergence should be prevented from collecting forage and rearing brood so that they are strong for early spring when colony development is speeding up.

As Carnica bees are tolerant to cold, this should be borne in mind when packing the hive for winter. The size of colony should determine the amount of cloth covering the hive in order to ensure proper ventilation and humidity so that bees are safe.