

## How Bees Make Honey from the Australian Honey Bee Industry Council

It has been said that except for man, nowhere in the world is there anything to compare with the incredible efficiency of the industry of the honeybee. Inside the beehive each bee has a special job to do and the whole process runs smoothly.

Bees need two different kinds of food. One is honey made from nectar, the sugary juice that collects in the heart of the flowers. The other comes from the anthers of flowers, which contain numerous small grains called pollen. Just as flowers have different colours, so do their pollen.

Let us go with the honeybee from her flower to the hive and see what happens. Most bees gather only pollen or nectar. As she sucks the nectar from the flower, it is stored in her special honey stomach ready to be transferred to the honey-making bees in the hive. If hungry she opens a valve in the nectar “sac” and a portion of the payload passes through to her own stomach to be converted to energy for her own needs.

The bee is a marvelous flying machine. She can carry a payload of nectar or pollen close to her own weight. Consider that even the most advanced design in aircraft can only take off with a load one-quarter of its own weight and you’ll appreciate the miracle that the honeybee can remain airborne with such a load.

When her nectar “sacs” are full, the honeybee returns to the hive. Nectar is delivered to one of the indoor bees and is then passed mouth-to-mouth from bee to bee until its moisture content is reduced from about 70% to 20%. This changes the nectar into honey. Sometimes the nectar is stored at once in cells in the honeycomb before the mouth-to-mouth working because some evaporation is caused by the 32.5°C temperature inside the hive.

Finally, the honey is placed in storage cells and capped with beeswax in readiness for the arrival of newborn baby bees. Pollen is mixed with nectar to make “bee bread” and is fed to the larvae. A baby bee needs food rich in protein if the bee community is to flourish.

Before returning to the flower again for more pollen, the bee combs, cleans and cares for herself ? not because she is vain but so she can work more efficiently. Throughout her life cycle, the bee will work tirelessly collecting pollen, bringing it back to the hive, cleaning herself, then setting out for more pollen.

Forager bees start out from the hive for blossom patches when three weeks old. As they live to be only six or seven weeks old they have much work to do and little time in which to do it.

There will be many other bees working at the same time, and the air will be noisy with their droning. It takes 300 bees about three weeks to gather 450 g of honey. On average, a hive contains 40,000 bees