

## Bumblebee Aware November 2021

Do bumblebees make honey? Yes they do but only to feed their own family, whereas honeybees make it for a colony which may contain 100,000 individuals. Humans have been exploiting this for more than 9,000 years but all bees seem to make honey in the same way. The nectar that plants supply is a mixture of several sugars in a solution containing about 80% water. A bee sucks this up through her tubular mouth parts (proboscis) into the front chamber of her stomach and then carries it back to the hive. There the nectar is transferred to a worker bee who takes it into her stomach where it is concentrated until the water only makes up less than 20%, at which stage the honey is placed in wax cells. Further evaporation is helped by worker bees fanning their wings, with the result that this essential food becomes too concentrated to allow the growth of bacteria etc.

Bumblebees operate as single parent families and the number of youngsters that they produce depends on the quantity of nectar (and pollen) that they can find. There are no stores of honey to keep a family of bumblebees alive through the winter. Fortunately, bees have an amazing ability to sniff out flowers that are worth visiting. When a bee lands on one, guided by the long antennae above her, she sticks out her tongue (as shown in the picture) and collects a load of nectar.



Bumblebees work hard to collect nectar and they select flowers that provide good rewards. Species like Comfrey renew their nectar supply within 20 minutes whereas Birds foot trefoil takes 24 hours. Efficiency relies on them sticking to one variety once they know how to collect the nectar at speed. There is no point in visiting a bloom that has just been emptied by another bee and they use their powerful sense of smell to detect the freshness of the sweaty footprint of the last visitor.



The bees are programmed to collect nectar actively and, with such furry bodies, they cannot help picking up, and depositing, pollen as they forage. Pollination is the only activity that the plant needs and bumblebees provide this service by accident.

There are still large queen bumbles about and they currently need Mahonia, Hellebore, and winter varieties of Honeysuckle and Clematis. For their Christmas present, consider a bunch of Daffodil, a pot of **Snowdrop**, or a drift of Wood anemone.

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