

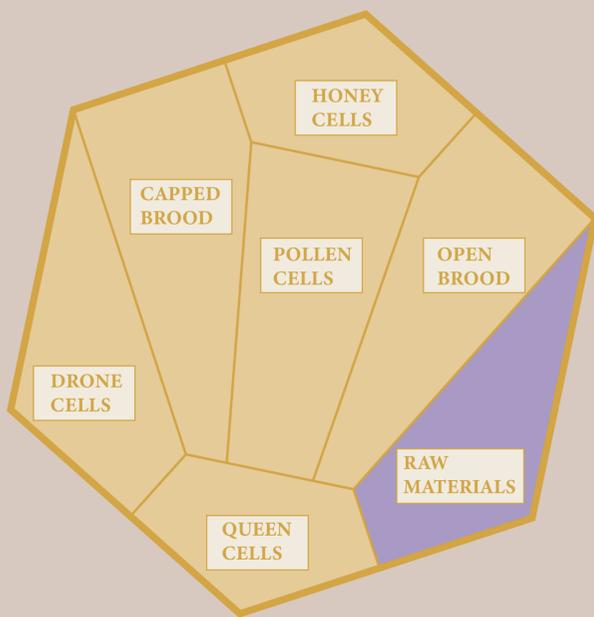
DURAWAX

The bee is equipped to handle the cold, as long as they are dry. Moisture within the hive is the leading cause of hive loss in the winter.

The bee is equipped to handle a variety of issues, but they begin to struggle when they must face more than one issue at once. Virus in the hive is often the final straw, weakening the hive enough that they are susceptible to invasion, mite infestation, and pesticide related complications.

Our ideal bee has acquired a new behavior involving the creation and distribution of a substance that we have named dura-wax. This substance has two main functions: distribution of antiviral material throughout the hive throughout the year, and increased protection from moisture in the winter.

DURAWAX DURING THE WORKER BEE LIFE SPAN



Curation of durawax. 1-3 Days of age.

The first activity of the bee is the creation of durawax from raw materials gathered by foraging bees. Exposure to this material as a first activity allows the bee to spread the substance throughout the hive in their following life stages.

Cell Cleaning- Bees ages 3-4 days of age.

Nursing- 3-12 days of age.

Wax production 13-18 days of age.

Foraging- 22-30 days of age

Foraging for antiviral material. 30-42 days of age.

The end of the bees lifespan is spent foraging for antiviral materials, which will be brought back to the hive and converted to durawax by young bees. Bees have been observed foraging for antiviral substances, such as reishi, polypore mycelia, and herb R. isatidis

THE BENEFIT OF ADDING A BEHAVIOR:

As our climate changes, and complications that the bee face increase, adaptability is essential. By adding a behavior rather than a fixed feature, the honeybee is able to utilize durawax based on environmental needs. The addition of a behavior allows for flexibility.

DURAWAX IN THE WINTERIZATION PROCESS

As well as being subtly incorporated into the lifespan of the worker bee, durawax also plays a role in the cycle of activities that occur in the hive throughout the year as they prepare for winter.

Early to mid summer: Bees focus on the production of durawax, creating a reserve of the substance in the hive for later.

Late summer to fall: Bees redesignate wax glands (which are no longer in use, as wax production ceases after early summer) and begin to store durawax within the body for winter access.

Early winter: When temperatures drop and foraging is complete, bees engage in a grooming behavior that involves coating each other's wings in stored durawax. This creates a waterproofing effect, better equipping them to handle the cold.

Spring: Bees begin to remove the wax through grooming each other. This also exposes bee to antiviral materials.

