



HONEY DNA

Dear Renee,

This package contains everything you ever wanted to know about your honey.

Honey itself is made primarily of water and simple carbohydrates. However, every flower that a bee visits provides the bee the same simple carbohydrates. This makes it very difficult to determine exactly where your honey came from. However, we've found a way to follow your bees on their journey from flower to flower and bring all that information to you.

Honey does not only contain carbohydrates but also has other nutrients, minerals, enzymes and even protein in the form of pollen. Pollen is another source of food for the bees. Bits of pollen make their way into the honey that the bees create. Pollen happens to contain genetic material - DNA. Using your sample, we amplified these strips of DNA and then coded their unique genetic sequences. We cross referenced these DNA sequences with our extensive database of genomes. The genomes that are currently known by science allow us to compare certain sequences. The result of our genomic translation is a comprehensive list of names of the plants your honey was made from. For a number of the pollen sources found in your honey, we were able to find which plants your bees were visiting down to the family and genus classification. For other types of pollen we were able to determine the type of plant precisely down to the name of the species.

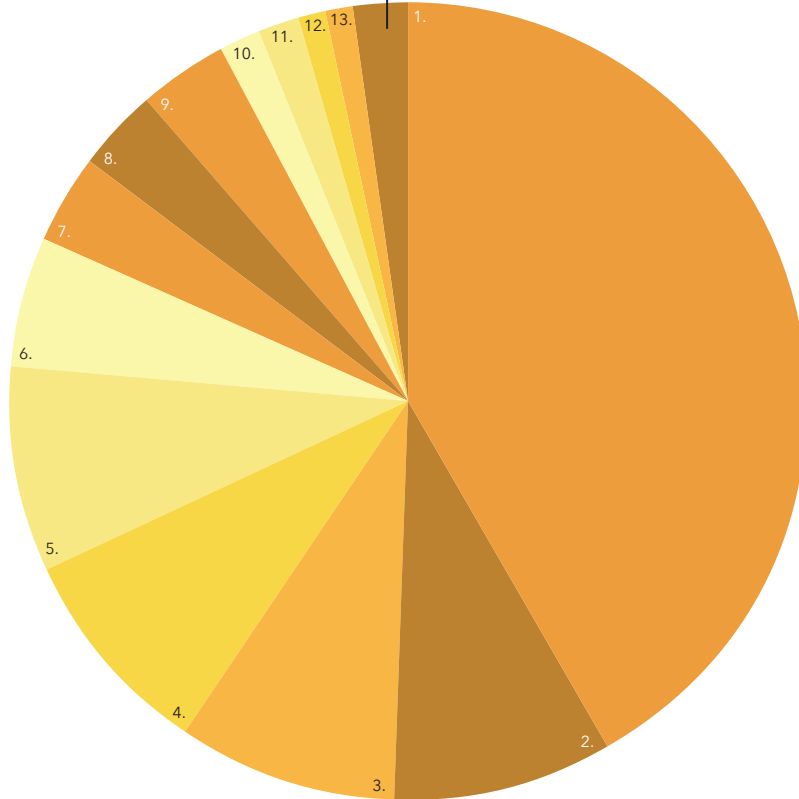
Your HoneyDNA sample is aiding further research in honey bee health. This newly discovered method is a revolutionary way of determining where bees collect the pollen and nectar that they transform into honey. This helps us, as beekeepers, better understand honey bees and what they need, like, and want. This data also helps the general public know exactly which flowering plants feed bees, and further inform humanity about specifically which habitat helps bees most.

Sincerely,
The Best Bees Company

HONEY DNA

SAMPLE S011852.1

2.11%
18 Species appearing
in concentrations
of less than one
percent



#	PERCENTAGE	COMMON NAME	SCIENTIFIC NAME
1.	41.82%	Clover	Genus <i>Trifolium</i>
2.	8.99%	Golden Rain Tree	Species <i>Koelreuteria paniculata</i>
3.	8.81%	Redosier Dogwood	Species <i>Cornus sericea</i>
4.	8.62%	Low Hop Clover	Species <i>Trifolium campestre</i>
5.	8.24%	Willow Family	Family Salicaceae
6.	5.40%	Ba Bao Shu	Species <i>Duabanga grandiflora</i>
7.	3.51%	Harpachne Schimperii	Species <i>Harpachne schimperii</i>
8.	3.48%	Pussy Willow	Species <i>Salix caprea</i>
9.	3.36%	Sedge	Genus <i>Carex</i>
10.	1.92%	Crape Myrtle	Species <i>Lagerstroemia indica</i>
11.	1.56%	Stonefruit	Genus <i>Prunus</i>
12.	1.12%	Lagerstroemia Langkawiensis	Species <i>Lagerstroemia langkawiensis</i>
13.	1.06%	Apricot	Species <i>Prunus armeniaca</i>

YOUR SAMPLE EXPLAINED

Clover

The highest concentration of pollen in your honey sample is from the genus *Trifolium*. This genus is commonly known as clovers or trefoils. In Latin, *Trifolium* means three leaf. Clover is a well-known native source of nectar and pollen for honey bees. The flowers start to bloom in late spring, continuing throughout the summer and are found on many properties or grassy areas. Clovers are a desired crop for cultivated land as well because of its ability to grow freely, return again and again after mowings, it can be used to feed livestock, it grows in many ranges of soils and climates, and it is in the legume family giving it its ability to fix nitrogen. If clover is present on your property, it is best to wait a few days after the flowers bloom before cutting it so the bees might reap the benefits of the nectar-laden blossoms.

Golden Rain Tree

The second most common pollen found in your honey sample comes from the species *Koelreuteria paniculata*, commonly known as golden rain tree. This species is native to eastern Asia was introduced to North America in the 18th century. It is hardy and often planted for ornamental reasons, producing small yellow flowers in spring. Because of its resilience to pests, heat and pollution, it is often planted along streets in urban areas. Sometimes this tree's hardiness and high reproduction rate leads people to designate it as an invasive species, but its blossoms provide attractive and abundant resources for bees. It's no surprise that goldenrain tree pollen makes up such a large portion of the pollen in your honey sample.

Red Osier Dogwood

The The results from your honey sample's DNA test show that the third highest concentration of pollen came from the redosier dogwood shrub. Its scientific name *Cornus sericea*, this shrub is known for its deep red bark during winter and is sometimes used for basket weaving and making dream catchers. It is usually planted as an ornamental and used as windbreaks. They are commonly found at the edge of lakes, where the soil is moist during parts of the year. Their flowers bloom in late May through June, providing your colony with both pollen and nectar. Its fruit, when ripe, is a small edible white berry often eaten by birds.

Low Hop Clover

The clover genus comprised 41.82% of your honey's pollen and adding to this is the species *Trifolium campestre*, or low hop clover. It's the fourth highest concentration of pollen in the sample. This species makes up 8.62%, bringing your total clover pollen count to over half of the entire pollen found in this honey. This species can be found in dry sandy soils. This clover species can be identified by the yellow flower heads that are a collection of some 20-40 individual flowers.

Willow Family

The fifth highest concentration of pollen found in your honey sample comes from the willow family, known scientifically as Salicaceae. The willow family is mostly comprised of flowers trees and bushes including willows, poplars, aspens and cottonwoods. Flowers from these plants provide your colony with both pollen and nectar in the summer. They form in the shape of a catkin, a slim cylindrical cluster of flowers that have small or no petals and are usually wind-pollinated. Flowering plants from the genus *Salix*, the willow genus of the willow family, are one of the few plants with catkins that are pollinated by insects.

Your honey is truly unique, sourced primarily from clovers & goldenrain trees. All 31 species found in your honey provide your bees with the nutrition they need to thrive. Identifying and recording the pollen concentrations of your honey will help us to reinforce and redefine the nutritional needs and preferences of honeybees. Your sample gives us a small snapshot of bee nutrition in your location - as we analyze more samples, we will eventually have a complete picture of a healthy bee's diet. Let this information be a guide to your land, giving you answers to what bees desire on their forage, and to your taste buds as you enjoy your honey. Thank you for being among the first to take part in this exciting and revolutionary project!