

WHAT EVERY BEEKEEPER SHOULD KNOW

FULL HIVE BOX WEIGHT (Michael Bush)

10-frame deep box approx. 72#

10-frame medium box approx. 55#

10-frame shallow box approx. 45#

8-frame deep approx. 58#

8-frame medium box approx. 43#

8-frame shallow box approx. 36#

8 FRAME HIVE VS 10 FRAME HIVE

Although the individual levels of 8-frame hives are smaller (by 2 frames) than 10-frame hives, that doesn't make any real difference in the size of the colony. 8-frame hives simply expand upwards sooner than 10-frame hives which expand outwards further. Some beekeepers feel that the relative upward orientation of an 8-frame hive more closely meets instincts of bees that naturally build their nests in tree hollows. Also most of the time with 10 frame hives, the bee do not use the outside 2 frames, so why lift the extra weight, just use 8 frame. Also many beekeepers claim that 8 frame winter better.

CELLS PER FRAME FOUNDATION (APPROX.)

By Michael Bush (5.4mm foundation):

Deep = 3500 Per Side (7000 Per Frame)

Medium = 2310 Per Side (4620 Per Frame)

Shallow = 2058 Per Side (4116 Per Frame)

ESTIMATING COLONY STRENGTH

A deep frame fully covered holds 0.5 pounds of bees or about 1750 individuals.

There are about 3500 bees per pound.

A medium frame fully covered holds 0.34 pounds of bees or about 1190 individuals.

A shallow frame fully covered with bees will hold approx. 0.3 pounds of bees or about 1050 individuals.

There are approx. 3500 bees per pound.

AVERAGE DEVELOPMENTAL PERIOD OF HONEY BEES

Queen = 16 Days (Needs fertilizing by drones & may not lay eggs for up to additional 7 days)

Worker = 21 Days

Drone = 24 Days

AVERAGE LIFE LENGTH OF HONEY BEES

A honey bee queen could live for 3 to 4 years, as long as she is free from disease. Most beekeepers requeen after 1 to 2 years.

Worker bees live for about 5-6 weeks during the busy summer, and for 4-9 months during the winter months.

At the most, drones may live for up to 4 months, however, they may survive for just a few weeks. Note, that upon mating with the queen, drones die immediately.

Honey bee colonies consist of a single queen, hundreds of male drones and 20,000 to 80,000 female worker bees. Each honey bee colony also consists of developing eggs, larvae and pupae.

A well-mated and well-fed queen of quality stock can lay about 1,500 to 2,000 eggs per day during the spring build-up—more than her own bodyweight in eggs every day.

WORKER BEES

A worker egg starts out the same as a queen egg. It is a fertilized egg. Both are fed royal jelly at first, but the worker gets less and less as it matures. Both hatch on day 3 1/2 but the worker develops more slowly. From day 3 1/2 until it is capped it is called "open brood". It is not capped until the 9th day (for large cells) or the 8th day (for natural sized cells). From the day it is capped until it emerges it is called "capped brood". It emerges on the 21st day (for large cells) or the 18th or 19th day (for natural sized cells). From when the bees start chewing through the caps until they emerge they are called "emerging brood". After emergence a worker starts its life as a nurse bee, feeding the young larvae (open brood). For the first 2 days the newly emerged worker will clean cells and generate heat for the brood nest. The next 3 to 5 days it will feed older larvae. The next 6 to 10 days it will feed young larvae and queens (if there are any). During this period from 1 to 10 days old it is a Nurse Bee. From day 11 to 18 the worker will make honey, not gather but ripen nectar and take it from field bees bringing it back, and build comb. From days 19 to 21 the workers will be ventilation units and guard bees and janitors cleaning up the hive and taking out the trash. From day 11 to 21 they are House Bees. Day 22 to the end of their life they are foragers. Except during winter, workers usually live about six weeks or less, working themselves to death until their wings are too shredded to fly

BEES DIET-NECTAR

Bees collect nectar from flowers and bring it to the hive where it becomes either beeswax or honey. A bee's diet consists primarily of honey, and any honey not consumed by the bees or in the raising of brood is stored as surplus and is ultimately consumed in the winter months when no flowers are available.

Worker bees, develop special wax-producing glands on their abdomens and are most efficient at wax production during the 10th through the 16th days of their lives. From about day 18 until the end of its life, a bee's wax glands steadily decline.

6-8 pounds of honey are consumed to produce a pound of wax.

BEES DIET-POLLEN

While we normally think of honey bees collecting nectar, an average-size colony may bring in 100 pounds of pollen in a season. Pollen is an essential part of the honey bee diet, providing a wide range of nutrients including protein, carbohydrates, lipids, vitamins, and minerals.

Although a tough outer coating protects the pollen from environmental stressors, honey bees have enzymes in their digestive tract that split the grains apart at a weak point. The interior is then digested and the empty husks are excreted. Most of the pollen is eaten by nurse bees. They use the nutrition absorbed from it to secrete royal jelly from their hypopharyngeal glands. The jelly is fed to young larvae, including workers, drones and queens. After about three days the jelly is mixed with bee bread—a mixture of whole pollen, honey, and enzymes—and fed to the workers and drones until they spin their cocoons. The queens receive a steady diet of royal jelly throughout their development. Most bees collect just pollen or just nectar on any trip, but a few carry both at the same time. The pollen is stuffed into hairy receptacles on their hind legs called corbiculae. A single bee can carry about half her own body weight in pollen.

Once back at the hive, the workers stuff the pollen into an awaiting cell. Unlike nectar-carrying bees, pollen-carrying bees have to off-load it themselves. In addition to depositing the pellets from their sacks, they may also groom away any pollen that is stuck to their bodies. The pollen is stored in cells at the perimeter of the brood nest, forming a ring around it. During the brood rearing season, the pollen is stored for only a few days. During the winter it is stored for much longer.

Honey bees usually forage on only one kind of flower on any single trip. This is nature's way of assuring that plants are cross-pollinated. So a bee going to blackberries, keeps going to blackberries until there are no more blackberry flowers, then she will switch to something else. Honey bees collect pollen even from plants that don't provide nectar, such as corn. In corn-growing regions, pesticide-contaminated corn pollen is suspected of causing severe health problems within the hive. This is why when feeding bees corn syrup, you need to know where it came from.

HONEY VOLUME = WEIGHT

1 Gallon Honey = 12 Pounds

1 Quart Honey = 3 Pounds

1 Pint Honey = 1.5 Pounds

½ Pint Honey = 12 Ounces

FRAME SIZES & AMOUNT OF HONEY IT CAN HOLD

Deep = 19 inches x 1-1/16 inches x 9-1/8 inches = 6 Pounds Honey

Medium = 19 inches x 1-1/16 inches x 6-1/4 inches = 4 Pounds Honey

Shallow = 19 inches x 1-1/16 inches x 5-3/8 inches = 3 Pounds Honey

HONEY PER 10 FRAME BOX

A shallow super will typically yield between 25 and 30 pounds of honey, or 2 to 2 ½ gallons.

A medium (6 5/8") depth super will typically yield between 35 and 40 pounds, or 3 to 3 ½ gallons.

A full-depth box will typically yield between 55 and 60 pounds, or 4 to 5 gallons.