

STAHLMAN BEEKEEPING

NOTES FOR 2023

Issue # 28 July 29, Mid Summer Feeding



I have been asked about summer feeding.

My beekeeping experience spans a period from 1949 thru 2023. So many things have changed. I moved from Ohio to North Carolina in 2015. In Ohio, summer was a time to add supers and late summer was time to

extract the honey crop. Feeding bees during summer wasn't something in my beekeeping vocabulary. Feeding bees was reserved for getting bees ready for winter.

I discovered quickly that once the honey flow was over in the Raleigh area, bees had fewer opportunities to forage for honey. In fact, if honey was taken from the bees, the bees were unable to gather enough nectar for colony survival. It all depended upon where the hives were located.

Several friends shared with me the idea that I should be feeding my bees during mid-summer. Thus, I have included sugar as an expense needed to keep my bees healthy and alive. It takes time to adjust to a new beekeeping environment. I might mention that I did set up a bee yard in rural Franklin County so my bees might find foraging opportunities. That also turned out to be a disappointment – I still had to feed my bees to keep them alive or take a heavy loss in hive numbers.

Over the last two years, I feed my bees to keep hive populations up and count on them to survive well into winter with a big population of bees. I have been rewarded with strong colonies in January and the resulting early honey crop they produce.

Feeding begins when robbing begins. I don't put a date on it – when I see bees flying about my stored honey supers, robbing my small nucs or hanging on the front of hives I know it is time to put on robbing screens and feeders. I use division board feeders and top feeders. These feeders lessen the possibility of hives being robbed especially when robbing screens are used.

IMPORTANT POINTS



Emergency feeding can be necessary almost anytime. We generally accept feeding bees for winter survival and when starting new hives in the spring.

For most beekeepers, the need to feed bees occurs when a colony lacks ample honey reserves. This can occur anytime during the year.

I am reminded that beekeepers are facing new challenges with environmental patterns that have changed over the years.

In the last 10 years, I have noticed a number of research efforts have been directed at bee nutrition. There are a number of issues to be concerned with – urban growth, Wild fires that darken our skies with smoke, and record setting heat. And feeding our bees during mid-summer can be added to the list.

For those of you reading these notes – what I report on summer feeding will not affect you if you live in an area with plants producing nectar and your bees are returning to the hive with loads of pollen and nectar! Your bees are producing honey. Feeding is not for you at this time!

Let me cite a few pointers of summer feeding for colonies being kept in less fortunate areas:

All bees react to the failure to find food to sustain the life of the colony!

- The most obvious sign is bearding on the front of a hive.
- Another sign is robbing – Honeybees join yellow jackets, ants, and hornets when they need food.
- They stop comb construction – new foundation will not be drawn out.
- Some bees abscond – swarm from a hive leaving few or no bees behind.
- Eggs laying may stop. Honeybees may cannibalize brood. They certainly don't raise drones.
- They will die without food.

Feeding hives stimulate brood rearing and wax production. Sugar concentrations in water to be used as syrup is important. It is possible to control brood rearing and comb building in a hive by the way the beekeeper manages feeding.

- Highly concentrated sugar syrup with little moisture content will be stored for future use. Formulas using 2 part sugar to 1 part water are good for fall feeding. Excess moisture during cold season feeding is bad. However any starving bees will be saved with even dry granulated sugar.
- The most popular sugar concentration formula is a 1:1 sugar to water. Bees must reduce moisture levels to store it. This formula is used with spring and summer feeding.
- Mid-summer feeding can use a sugar to water ration of 1 part sugar to 2 parts water. It is claimed that this is close to nectar sugar concentrations and results in a good formula to encourage brood production.

My formula is based on what works for me. I use cane sugar and sometimes honey from my own bees. Beet sugar and corn syrup certainly could be used. Brown sugar and honey from unknown sources should not be used. The big advantage of cane sugar is it is available almost everywhere. If one has connections – like a large sugar dealer or plant, one can buy floor sweeping or broken bags at far reduced prices.

My formula is based on research I have gathered from a report on Honey Bee Nutrition produced by Dr. Zachary Huang of Michigan State University published in 2010. I plan first of

all to feed each colony from mid-summer to fall with 4 pounds of sugar each week. I try to use a 1:1 mix but often find myself using more water than the 1:1 ratio but it is close. The important thing is each hive gets 4 pounds of sugar a week.

Points that Dr. Huang makes that seem reasonable:

- To survive a worker bee needs 11 mg of dry sugar a day. One worker bee is multiplied by the hive population. A hive having a population of 50,000 bees will need about 2 pounds of 50% sugar syrup to survive. (about half a gallon of food) This he points out does not count the amount needed to feed brood.
- Over the course of a year, he indicates a hives need for food is 700 pounds of nectar a year. Of course the moisture in nectar is evaporated much like the water in syrup.
- The carbohydrates in sugar provide the energy source for the bee and produce by-products such as carbon dioxide and water.
- Protein is provided by pollen. Animals need amino acids and other minerals.

Bees will store excess sugar when it is not needed by brood and bee survival. Thus my formula is very simple: Feed each colony each week with :

4 pounds of sugar
3 quarts of water or a little more.
4 teaspoons of Honey Bee Healthy
1 pinch of salt -- just regular table salt.

One could also add a dye to the mix so that bee feed does not get mixed with honey. My feeders also indicate to me that I need to check a hive if the food is not being taken down.

Results I get:

- I am replacing old comb with new foundation every year. The bees draw new wax and I can check the progress during inspections. Hives that are not fed, just look at new foundation and do nothing with it.
- Bee populations remain steady – always eggs and larva fill brood area. Drones are present.
- I do not have problems with wax moth or hive beetles. Large bee populations keep them under control.
- Winter losses can be replaced with splits of strong hives in early spring. Early queen rearing and sale of bees are possible.

I am again going to share my go to book for feeding information: Chapter 7 Feeding Bees pages 103 to 116 in [The Beekeeper's Handbook 5th edition](#). If you are looking for info on pollen patties, feeding package bees, or about anything else you will find it in this book.