



## Spring and Summer Management of Honeybees

*Anne Lesenne*

For successful Spring management of your honeybee colony, there had to be successful Fall and Winter management as each affects the other. Springtime for honeybees begins much earlier than we might think it does, especially in the low desert of Arizona. In Fall the cluster forms when temperatures are 57°F or lower. If there is still brood developing, the cluster will work harder to keep the brood nest warm enough to develop (93°F), but the queen will also take lower temperatures and less available nectar and pollen as a clue that she needs to lay less egg and allow the brood nest to shrink in size. At some point during the coldest part of the winter, the colony may be totally broodless for a time. How long this broodless phase lasts is all dependent upon the outside temperature and availability of food. The colony will be utilizing their bee bread and honey stores during the cold days, and your job is to be sure that they don't run out of food before natural sources are available again. Lift the hive slightly to judge the weight of the hive as compared to what it is empty and what it was in Fall. If it is getting too light, you need to supplement their food stores. This can be done with dry sugar or candy placed around the opening in the inner cover, or as it gets warmer, sugar syrup in a hive top feeder. When placing the feed around the hole in the inner cover, you may be able to see the cluster at the opening. If temperatures warm up enough that they can break cluster during the day, some bees will be able to venture out to honey stores in the outer frames. As freezing temperatures pass, the queen will begin to lay egg again, and you should also feed the colony pollen. Once you need to start feeding, do not stop until there are enough floral resources in bloom close by so that the colony can feed itself. Spring nectar flow in the low desert usually starts in April. Bees prefer nectar over sugar syrup, and real pollen over pollen substitutes, so they will stop taking the food you are offering as soon as they are able to bring enough in for their needs. Feeding a 1:1 syrup will stimulate the queen to start laying egg.

On weak colonies or those who have used most of their honey stores over the winter months, feed them as long as they will take it in order to replace what was used, and give



Pollen patty on inner cover.



Bees and comb from Top Bar hive.

them the food they need to build comb. Early Spring is a great time to cycle out old dark comb and have them build new comb. Supplemental feeding with syrup will help them have the abundance needed to produce comb. It takes approximately 5 lbs of nectar/honey/syrup to produce 1 lb of was honeycomb.

As soon as the air temperature gets up to 75°F you can do hive inspections. Spring is a good time to clean out debris from the bottom board and check the laying strength of your queen. If you live in higher elevations and used insulation or wraps for the winter, you can remove them, as well as entrance reducers. Move the brood nest to the bottom box. Allow the bees to fill both brood boxes with pollen and honey stores, then be ready to add the queen excluder and honey supers. It is best to requeen in Fall so that you start as early as possible in the Spring with a new young queen laying lots of brood, but if for some reason your queen isn't performing as expected, replace her as soon as possible. This will allow you to have a full size colony ready to harvest nectar as succeeding blooms happen.

Spring is also the time you need to be watching and preparing for swarms. Some races of bees naturally want to swarm every year. There's nothing wrong with this as long as you catch the swarm. Remember that the goal is to have a hive full of bees in time for the first nectar flow in March, so having half of your workers fly off with the old queen is a major reduction in work force. Keep in mind that colonies will always be prepared with some queen cells on the bottom of the frames or supercedure cells on the sides of the frames, but their presence isn't a threat by itself. Only when the queen lays an egg in a queen cell and they start feeding it royal jelly are they preparing to swarm. Once this



Metal queen excluder on deep box.

has happened you need to manage it quickly to keep from losing your bees. The swarm usually leaves the day before the queen cells are capped (9 day old egg).

One way is to do a split. You remove the frames with queen cells being developed and replace them with empty honeycomb frames, or brand new frames with fresh foundation. Place the frames with queen cells into a Nuc box along with all the nurse bees on the frame, add a couple frames of capped honey, and allow them to raise their own queen. This option is best if you don't have Africanized bees in your area. If you allow open mating with your virgin queen, odds are good that she'll mate with Africanized drones and you'll have an Africanized colony. If you can get hold of a European mated queen, then you can replace the virgin queen with the European, and have nice calm bees.

Another way to control spring swarming is to put a queen excluder on the entry to your hive. Your bees will not leave without their queen, but be warned, they often put queens on a diet before they swarm so that she is better able to fly to the new nest site, so she may be small enough to slip through the excluder. They also produce a box that you attach to the front of your hive that catches the swarm, with the queen inside, so you can then place it in another hive box. Again, this device also relies on a queen excluder that a skinny queen may be able to slip through.

When beekeeping in Arizona and the Southwest, you first have to decide if you are going to keep Africanized bees or not. If you don't actively manage your hives to stay European stock, they will become Africanized sooner or later. If you want to keep European bees, you either need to raise queens and artificially inseminate them to stay European, or you need to find a supplier who has European mated queens available most of the year, so that you can requeen quickly when necessary.

To be a successful beekeeper you should also become good at keeping Nucs ready for your own purposes. They can be used to replace a failing queen, boost a weak hive, or replace a dead out.

Springtime is when the brood nest expands and lots of new bees are being developed in the colony. With that brood nest expansion comes a flush of Varroa mite population explosion. The growth curve of Varroa lags slightly behind the growth curve of brood at first, but without successful intervention by the beekeeper, Varroa will quickly surpass brood growth, bringing viruses and weakness to your previously strong hive. Mite monitoring should happen every two weeks. The alcohol wash with bees taken from the brood frames is the most accurate. Results should be less than 3 mites per 100 bees, or treatment needs to take place. Keep in mind that the mites you get from the bodies of the



bees (phoretic) represents only 50% of the actual mite load for the colony. There are many more mites hiding within the sealed brood that your test will not account for. Please refer to the online Varroa mite Management Tool created by Honeybee Health Coalition to determine the best treatment for your colony.

In Arizona we are lucky to have a very long growing season where something is blooming in the state most of the year. If you want to take advantage of all the different nectar flows you should get to know farmers that are growing crops that depend upon pollination, or their fruit/seed set is enhanced by pollination, and work out deals to move your bees onto the fields or orchards when bloom starts. Keep in mind that many crops only bloom for 2 to 3 weeks. Some may bloom longer. You need to figure out where to move your bees so they have nectar and pollen resources throughout the year. Make sure to get permission to move your bees onto the farm, and make sure the farmer (and neighbors) will not be spraying any chemicals that may hurt your bees or taint the honey.

To produce monofloral honey you will need to place new honey supers onto the hive when you move a colony to a new crop. Then remove the honey supers once you are moving them off that crop. This type of management will require several extra honey supers, but it will also produce specialty honeys that can be sold for much higher prices. It is always best to harvest honey as soon as the supers are pulled off the hive, so having a honey kitchen set up and available for this task is a good idea.

Regardless of whether you want to harvest only once a year or several times a year, you need to make sure that you take honey supers off when the bloom is done, and feed

sugar syrup to the hive if natural floral resources are not available.

You also need to keep monitoring for Varroa mite levels, and keep the quantity of mites less than 3 per 100 bees. If you are continually moving your hives to another source for nectar, you will have to plan for your mite treatments between crops, as many of the mite treatments can not be applied while honey supers are on.

Summer management of bees is much of the same practices you've done during Spring - providing abundant floral resources, monitoring varroa mite numbers, adding honey supers when needed - but you also need to help your bees through the hottest time of the year. Remember that bees need to keep the brood nest at 93° - 95°F, and our summer temperatures are often above that. Bees will fan at the entry to cool the hive, they will stop foraging and bring water to evaporate and cool the hive, and they will also beard at the entry to help cool the hive. If you provide afternoon shade, that can cool the hive by 10° - 15°F. You can also provide fine mist which will cool an additional 10°F. You need to provide your hives a source of water nearby (within ½ mile) so they can cool the interior of their hive. Provide ventilation through the top of the hive with a Vivaldi board or inner cover with screening. Be ready for the moisture and high winds that come with the summer monsoon season by strapping your hives together and ensuring they are not in a low area that will flood during heavy rainfall.

During times of dearth (low or no floral resources available) most bees will reduce the size of the brood nest and the colony will slowly shrink in size. Small or weak colonies will be more susceptible to robbing by stronger colonies. You should always try to manage your hives in



Using Varroa Easy Check to assess mite levels.



Apiary with afternoon shade.

an apiary so that they are equal in strength. Bees that are hungry are cranky and harder to manage. You can tell if a hive is being robbed if there is unusually high activity at the entry as well as bees trying to get in via cracks and small gaps between boxes. Robbing bees tend to sway back and forth as they approach the hive instead of going directly to the landing area. There might also be fighting at the entry accompanied by several dead bodies on the ground close by. Robbing can decimate a weak hive in a matter of days. To prevent robbing,

- try to keep all hives equally strong,
- feed sugar syrup with in hive feeders when resources are low,
- reduce the entry to allow easier defense by guard bees,
- repair or cover gaps or holes in boxes
- keep hives open for as short a time as possible during inspections

If you have done all this and still get robbing, you may need to relocate the weak hive to a location by itself, or turning the entry to a different direction may help.

## References

The Backyard Beekeeper: An Absolute Beginner's Guide to Keeping Bees in Your Yard and Garden (4th Edition) by Kim Flottum

The Beekeeper's Handbook (4th Edition) by Diana Sammataro and Alphonso Avitabile

The Complete Bee Handbook by Dewey Caron



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