



Fall and Winter Management of Honeybees in Arizona

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If you have taken good care of your bees through the summer, and cooler Fall temperatures are now here, you have a new focus for success in the Fall. Usually, your hives are all equal strength, Varroa mite numbers are low, and the honey harvest is over so all honey supers should have been pulled off the hives as well as queen excluders. Now is the time to allow your bees to fill the two bottom brood boxes with honey and bee bread in preparation for winter survival, as well as raise fat bees that are better suited to live longer during the winter months.

After the honey supers have been removed you should treat for Varroa mite and check after the treatment to be sure that it was effective. You want less than 1 mite per 100 bees going into winter. If your first treatment didn't get you down to that level, retreat with a different type of Varroa management, and then check your Varroa levels again. After the mites are down below the 1% threshold, you can add your new Fall queen. Research from the Carl Hayden Bee facility in Tucson found that if your hives have greater than 5 mites per 100 bees in September, you have less than a 50% survival rate through winter, and the bees that successfully survive won't be very strong, so you won't be able to take advantage of the February nectar flows.

Fall requeening with a mated queen is really important in the south because nectar flows can happen as early as February, so starting fall with a new queen can be the difference between making or missing that early nectar flow. The goal should be to not only get your bees through the winter, but to also get them through strong so you can take advantage of that early nectar flow. When you install the new mated queen in a cage, also feed your bees a grease patty (sugar mixed with vegetable shortening) to treat for tracheal mites.

Fat bees are the brood you are raising in October, so make sure that your bees have plenty of floral resources available that provide both nectar and pollen. If natural floral resources are scarce, you need to provide supplemental 2:1 sugar syrup and pollen substitute. Once temperatures get cooler the colony won't take sugar syrup any longer. Brood rearing may stop if pollen resources are not available. Once the hives are full of honey and pollen, heft them from the back to become familiar with how heavy they feel when full, so you can compare that to their weight as winter progresses. This can be essential for knowing when to start supplemental winter feeding. This is also the time to move the brood nest to the bottom box and have honey stores on



Using Varroa Easy Check to test for Varroa mites



Hives wrapped with insulation and strapped for winter.

the outside frames of the brood nest, as well as the top box full of honey stores. Bees naturally tend to move up during winter, so food should always be above them. Your bee population should be 15,000 to 20,000 and drones should be kicked out of the hive once floral resources are scarce.

If your hives are going to overwinter in higher elevations, you may want to wrap or insulate the hives and make sure they have upper ventilation to allow the heat from the winter cluster to escape. The heat generated by the cluster will also create condensation inside the hive if not well ventilated, so using a Vivaldi board or screened inner cover will help make your winter management tasks easier. Not only do they allow ventilation, but you can also use them to feed the colony sugar patties and pollen patties. If your entrance wasn't already reduced to prevent robbing, you can reduce it now. In some areas you might also need to add a mouse guard to prevent rodents from making their home in your hives over winter. If you also get strong winter winds you will want to strap your hive bodies together. Be sure to check the weight of your hives as winter progresses so you can provide supplemental feeding when necessary.

Look around your area to see if you can locate Red Maple trees. They produce pollen in late December to mid-January. Placing your hives near these trees can help your bees have the pollen necessary to come through winter strong. By late January you should have your plan for where you are moving your hives throughout the year. Nectar flows can start in February and March, so have honey supers ready. Refer to the publication Arizona Specialty Honey for more details.

Winter is also the time to repair equipment, order or build more equipment for next spring, clean and paint equipment, repair personal protective equipment, and review records of what worked and what didn't. Winter doesn't last very long in the low desert, so be ready to have your plan for next year worked out because it all starts over in February.

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

<https://www.ars.usda.gov/news-events/news/research-news/2019/new-tool-improves-beekeepers-overwintering-odds-and-bottom-line/>



Entrance reducer in hive entry.



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