

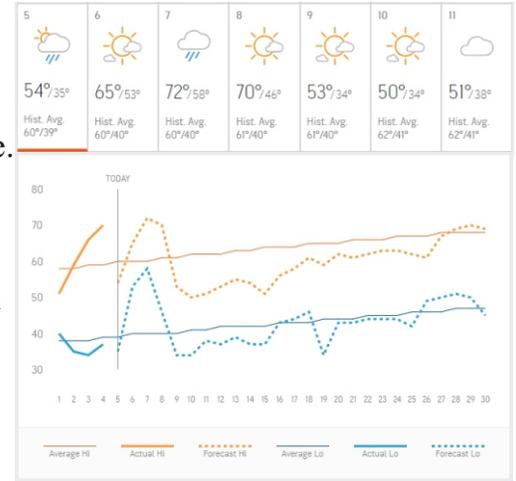
Useful tool:

Accuweather - <https://www.accuweather.com/>

This is possibly the best used tool that you can use. Knowing the temperature and how your bees are going to react; below 45° they will be clustering, 98° plus high humidity, they will be bearding outside the hive. When will they be foraging or stuck inside from; high winds, storms, excess heat, rain or drought. Watching the radar will dictate how your going to plan on working in your apiary.

Example: If you're starting a new nuc/Spring splits and it's going to rain for 4 days straight, you will want to do supplemental feeding; 1:1 sugar/water and/or pollen patty.

Example: Drought can lead to the queen no longer laying eggs, colony starts to cannibalizing the brood and it begins to shrink in size.



Week & monthly April forecast for Columbus, OH

In the apiary:

Across the entire State of Ohio, the season is finally free from the bitter cold and wet weather. Using the Growing Degree Days (GDD) <https://www.oardc.ohio-state.edu/gdd/default.asp> you can easily see that Cincinnati is at 182 with season well under way, while Toledo is at 54, just coming into it. The pollen flow from numerous trees, shrubs, and flowers are the protein that the colony needs to build brood, through the nurse bees hypopharyngeal glands feeding larvae in the brood area. Each type of tree, shrub, or plant give different ratios of pollen and/or nectar.

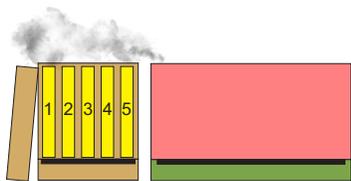
Overwintered hives can defiantly be fed 1:2 or 1:1 sugar/water and stimulated with dry pollen in feeders or pollen patties. This will immediately boost brood rearing and the size of the colony. Once we remain into the 55°/60°F weather, this would be the perfect opportunity to rotate your brood chambers down to a new or clean bottom board. Time to inspect the colony, queen performance, and problems such as chalk brood, nosema, and /or dysentery within the hive body.

As a beginner, most of your frames will be raw foundation. To help stimulate workers (12 to 18 days old) to produce wax and draw out comb, they must take in honey/nectar to develop this secretion in 4 pairs of wax glands, located under the plates or sternites of abdominal segments 4 through 7. It hardens into wax flakes (1 to 2mm) used to draw out the combs from the foundation. Beeswax consists of esters of fatty acids and various long-chain alcohols. Once this is done, the queen can lay eggs in the cells, workers can store nectar, pollen, and bee bread in the cells like kitchen cupboards. The best way to do this is feeding the colony 1:1 cane sugar/water, until the nectar flow begins, then allowing them to store real nectar, converting this into real honey. You can continue feeding 1:1 to the colony for the entire season, helping them pull out all of the foundation, but any stored "honey" will only be "fake honey", as it is really just "sugar syrup". Your goal is to get the entire hive to at least 150/160# before October and make it through the Winter till Spring 2021.

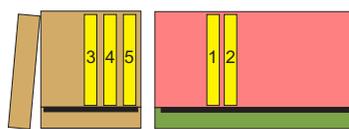
This early in the season, nucs & packages are just starting to move around the southern part of the State. This still allows you time to finish painting hives, find apiary locations, and finish your 2020 plans for your operation. Have you registered your apiary(s) with the State of Ohio, through the Ohio Department of Agriculture? It is the law to register your hives in Ohio. Please go to the link below to print out the 2020 registration form in PDF https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/forms/plnt_4201-002 It is only \$5.00 per apiary location and is due by June 1st. This is also a resource for you to use when asking for help with pests, diseases and problems, along with your Deputy County Apiary Inspectors. I'm the Apiary Inspector for Defiance County and we are here to help educate beekeepers in keeping healthy colonies throughout the State. You can find contact information for county appointed inspectors on a link at the bottom of the page at <https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/apiary-program/>

Inside the Hive:

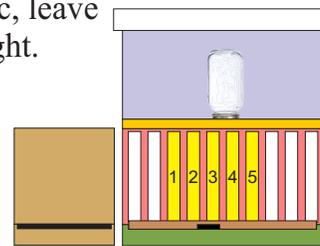
Nucs and packages are the most popular for starting new colonies, though there are sellers who will sell double deep 10 or 8 frame colonies. I'm going to walk you through installing a 5 frame nuc. Remember, I said to contact your dealer for an availability/time frame when your nuc will be ready. Have your apiary completely ready and hive bodies at the location. When you pickup your nucs, take your suits/veils to load them into your trunk of the car or bed of your truck. Do not allow them to stay closed up for extended amount of time, this is a strong nuc and can overheat. Once at your apiary, light your smoker, put on your safety PPE gear, and move the nuc to your hive. Open your hive and take out all the frames, open the nuc and lightly smoke over the frames. Remove an outside frame from the nuc, calling it frame #1, place this frame into your hive just left/right of center. Repeat this process until each frame is removed from the nuc and in the same order as you removed them, placed into your hive body. Depending if you have 8/10 frame equipment, place your frames of foundation around the outside of those frames. Use smoke as necessary, placing on the inner cover, jar feeder, empty hive body, telescoping cover and reduce the front entrance so the bees can defend it. If there are bees in the nuc, leave it beside your hive and the bees will leave the nuc and enter the hive later that night.



Open nuc and use light smoke.

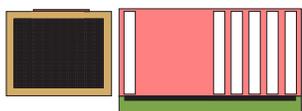


Start with outside frame, transfer one frame at a time.

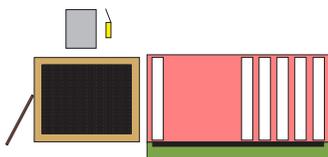


Close up colony and setup for feeding.

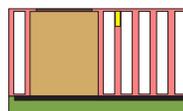
Installing a package is much different, but the end result should look similar to the nuc installation. Packages must be picked up from the dealer and installed the same day, as they have no resources, only the cluster to keep warm. Having your apiary completely ready and hive bodies at the location. The same precautions when picking up and hauling your package home. Once at your apiary, light your smoker, put on your safety PPE gear, move the package next to your hive, open your hive and leave 3 frames. Using your hive tool, pry off the wood square over the feeder can, remove the feeder can and the queen cage. Immediately cover the package hole back up with square cover. Place the queen cage, candy end exposed, between two frames using a rubber band to hold securely. Place the package inside the hive body and remove the square cover. This allows the bees to come out of the cage and move to the queen. Place the other frames into the box to fill up the space. Place feeder on top of inner cover and close up the colony. **IMPORTANT:** make sure the queen is out of the cage by day 3 and remove the package from the hive. This will prevent the bees from building comb inside the package. After removing the package, place frames of foundation into the empty slots. Making sure a 10 frame box has all 10 frames and the same way with an 8 frame box having all 8 frames.



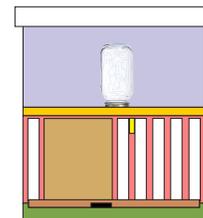
Setup hive to accept package



Remove feeder can & queen



Place queen & cage inside



Close up colony and setup for feeding

Use a drywall screw, puncture 8 to 10 tiny holes in the lid. Invert the jar to make sure it pulls a vacuum and stops dripping before you place it on top. Using 2:1 or 1:1 sugar/water you can use some Honey-B-Healthy in the sugar/water solution, directly above the inner cover slot. There are also top feeders, front feeders, and frame feeders. Placing a small amount (1/4) of pollen patty, above the top bars will help stimulate brood rearing. This helps the colony grow, even if the weather is to cold to forage.



L to R: 1. Top feeder, 2. Jar feeder

Over and Above:

If you have been watching the GGD and Accuweather monthly forecast, the colony(s) are changing rapidly. I hope you have been inside your hives. Every overwintered colony begins to change when Spring pollen starts coming in. The queen is ramping up to full egg production of 1500/2000 eggs per day, the queen's QMP begins to diminish throughout the hive due to overpopulation, workers begin to backfill the brood area with nectar, and the queen begins to lay eggs in queen cups. Once these eggs emerge on day 4, they begin feeding her daughters royal jelly, chasing the queen around and withholding nourishment to get her flight ready to swarm.

First, look at last year's notes and determine if you want to replicate this parent colony? Did it have gentle stock, overwinter, good honey production, and disease resistance? Don't take a hive you were scared of that was super defensive and make more colonies from that stock. By interrupting the natural tendency to swarm, you have a few different options; reducing the parent colony by making nucs, splits, or queen castles, continue to give the colony ample room to grow, and/or stripping resources (brood, pollen, honey) from this colony to build up other colonies. As we talked about making splits in last month's issue, we are going to concentrate on splits.

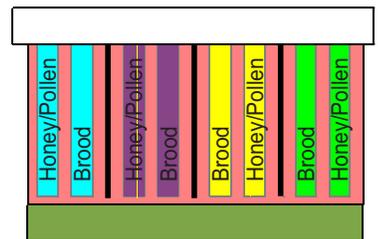
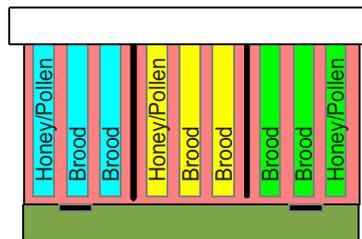
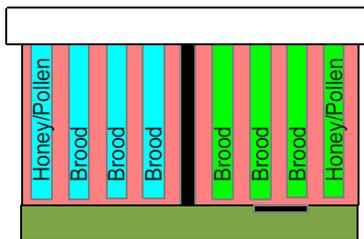
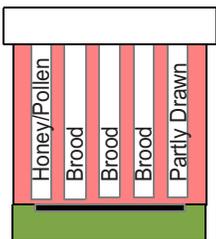
We have a critical moment that we must all watch for if we are going to make splits. You must have at least pink-eyed drones, just before the purple-eyed stages, in your area to create a suitable drone congregation area for these new virgin queens to mate. How do you know this, tear open your drone brood capping and see what age of development the drones are in, ask others at club meetings, and social media from others in your local area. Once the drones emerge on day 24, it takes 14 days for them to sexually mature, in total 38+ days. This gives you time to make your splits with eggs/queen cells, to emerge on day 16, and 7/10 days to sexually mature, in total 26+ days. This brings them both into perfect time lines to mate when she is on her mating flights. You can avoid this time line by purchasing mated queens, but find good genetics to add to your apiary(s).



White eyes, pink eyes, purple eyes, emergence 24th day.

Now, onto building the splits from your parent hive(s) in your apiary(s). Once the parent colony reaches 6 to 8 frames of brood, you can use any of the options below (nuc, 4 over 4, queen castles). You can stop the parent colony from swarming by building 1 or 2 splits and still have a great honey production hive. If you're looking to increase numbers of colonies and scrap the honey production, you can completely tear down the entire parent colony into 4 or more splits. The nuc - the best success rate with honey, pollen, and 3 frames of brood (eggs, larvae, capped pupae). 4 over 4 - good success but 1 less frame (eggs, larvae, capped brood). The last 2 options should be stocked with emerging brood; 3x3 frame queen castle - risky as there are less resources per colony but used for mating nucs and 2x4 frame queen castle - least amount of resources per colony but easily used for mating nucs. Once the queen returns and begins egg production, evaluate the brood pattern and move the 3 or 2 frame colony from the queen castle into a 5 frame nuc. You can always feed 1:1 sugar/water or pollen patty, to help stimulate the colony from stress and starvation.

Don't be afraid of taking resources from multiple colonies to build these splits, so not to completely strip too many resources from only 1 hive. You can stack nucs and 4 over 4 hive bodies upward to allow more room. Try at least one 5 frame nuc, then build upon your success and record your results in your journal. Next month, I will share the benefits/uses of having these nucleus colonies in your apiary. Good luck to each of you!



Vocabulary:

Hypopharyngeal Glands - consist of a pair of long glands coiled in the sides of the workers' head that produce royal jelly to feed the young larvae and the queen.

Pink Eye Drones - this is one of the last stages of drone pupae, just before purple, brown, and emergence.

Mating Nucs - hive with small amount of resources to allow the queen to take a mating flight and return to lay.

QMP - Queen mandibular pheromone, emitted by the queen and shared by worker bees, it controls many different aspects within the colony.