

# Beginning Beekeeping

## Module 3

### Getting your Bees, Inspections, Swarming, and the Beekeeper's Year

Northwest Arkansas

Beekeepers Association

[www.nwabeekeepers.com](http://www.nwabeekeepers.com)

## Getting your Bees

- **Order your bees NOW**
  - Continue to study on honeybees
    - See the Bee-Bliography
    - Check out some YouTube videos
    - Pinterest (search on bees)
  - Assemble hives and equipment
  - Plan your apiary site

## Getting your bees

- Placing the beeyard
  - For the bees
    - Dependable nectar sources
    - Dependable pollen sources
    - Fresh water available close by
    - If you can't change your location, change your location
      - Plant good bee forage
      - May need supplemental feeding

## Getting your bees

- Placing the beeyard
  - For the bees
    - Avoid floodplains
    - Windbreaks from prevailing winds (west and north)
    - Avoid stagnant air pooling around hives
    - Hive entrance needs to face morning sun
    - Bright afternoon sun
      - Deters small hive beetles
      - Reduces mold issues

## Getting your bees

- Placing the beeyard

- For yourself

- Convenient location
    - Road access when carrying heavy items
    - Landowner permission when placing hives on another's property
      - Ask to find out if there is another beekeeper close by
      - You will need permission from the other beekeeper to place your hives
      - Does not apply if you are on your own property

## Getting your bees

- Placing the beeyard

- For your neighbors

- Fences or vegetation forces bees to fly higher
    - Want bee traffic to be above head height (above 7 feet)
    - Don't work your bees while the neighbors are out
    - Check if your neighbors have a swimming pool, especially if you don't have a water source available for your bees
      - Bees will congregate on items floating in a swimming pool such as hoses to drink

## Getting your bees

- Register your beeyard locations
  - Registration is with the Arkansas State Plant Board
  - It is a one page form
  - If the beeyard is located on your property, approval is granted automatically
  - Registration is required 20 days prior to setting up your beeyard
  - <http://plantboard.arkansas.gov/>

## Getting your bees

- Beehives can be moved
  - Less than 3 feet or more than 3 miles
  - Close the hive securely after sunset
  - Open the hive entrance after placing the hive
  - Use tie-down straps around the top and bottom of hive to keep it from coming apart during transport

## Getting your bees

- Purchase an established hive
  - Used equipment can be a bargain
  - You are buying someone else's problems
  - Bee colonies cannot be legally moved without a health inspection certificate (from the Plant Board)

## Getting your bees

- Purchase a nuc
  - Short for nucleus hive
    - 3, 4, or 5 frame miniature hive
    - Contains a laying queen
  - Place it where you plan to put your hives
  - Let the bees establish their foraging pattern
  - Transfer the frames and bees into a standard hive before they get crowded

## Getting your bees

- Buy package bees
  - Usually 3 pounds of bees (approx. 10,000 bees)
  - Usually sold with a laying queen
  - Queen comes in a cage with several nurse bees
  - Also comes with a can of sugar syrup

## Getting your bees

- Package bees
  - Bees usually ship starting around mid-April
  - You order packages based on delivery date and type of queen (e.g., Italian, Russian, ect.)
  - You will need to provide contact information
    - Expect an urgent call from the post office when your bees come in
    - You will pick up your package either at the mail distribution center or your local post office

## Getting your bees

- Package bees
  - CANDY PLUG ON QUEEN CAGE ALWAYS GOES UP
  - Use the Thump N Dump to pour the bees over the installed queen cage and frames

## Getting your bees

- Immediately start feeding a 1:1 sugar syrup
  - Nucs will have about a 3 week head start on Packages
  - Bees will need the syrup to start building honeycomb and to revive
  - Nectar flow may not be in full force at this point

## Getting your bees

- Leave the new hive alone for 3 days
  - Continue feeding
  - After 3 days, remove the empty queen cage
  - If there is a dead queen in the cage, she will need to be replaced immediately

## Getting your bees

- Workers should be drawing out comb from the foundation
- Check on their progress about once a week
- Watch the hive entrance for bees carrying pollen

## Getting your bees

- A healthy, mated queen should begin laying eggs with 24 hours of release from the cage
- By 10 days after release, capped brood cells should be visible
- About 3 weeks after the queen was released, fully developed workers should be emerging

## Inspections

- How often to inspect the hive?
  - Have a reason and goals. You are being disruptive.
  - Unless there is a problem, every couple of weeks should be sufficient
  - During winter, you only need to open the hives to do supplemental feeding
  - You should only open the hives when temperatures are above 55 degrees F

## Inspections

- Be organized and take what you need to the beeyard
- Light your smoker
  - Learn to use it correctly
  - Don't overuse it
    - Lightly smoke the hive entrance and open the top and lightly smoke, then close the top for a couple of minutes
  - Don't burn yourself or the bees

## Inspections

- When you enter a box, remove the second frame from the outside first
- Pick the one with the least activity
- Set that frame to the side
- Work your way in

## Inspections

- Stand to the side of the hive, out of the flight path
- Stand with the sunlight over your shoulder
- Always hold brood frames over the hive to examine
- Always keep frames in a vertical position
- Set removed boxes on something smooth and flat rather than the dirt and grass
- Stagger boxes that have been removed

## Inspections

- What are we inspecting for?
  - Assessing colony health
    - Queen, brood, workers, drones
    - Any indications of disease
    - Amount of varroa mites and small hive beetles
  - Assessing available space
    - Empty brood cells
    - Honey storage area
    - Pollen storage area

## Inspections

- What are we inspecting for?
  - Is the queen present? Does she look healthy?
  - Does the brood look healthy?
    - What is the brood pattern?
    - Are there eggs?
    - Young brood?
    - Older brood?
    - Capped brood?
    - 1 : 2 : 4 ratio

## Inspections

- What are we inspecting for?
  - How much drone brood?
    - Damaged comb is built back as drone comb
    - Older the frame, the more drone cells you get
  - Are there queen cells?
  - Does the queen have sufficient room to lay?
    - A honey bound brood nest encourages swarming
  - Do the workers look healthy?

## Inspections

- What are we inspecting for?
  - Assess the food supplies
    - Pollen
      - Bees returning with pollen?
      - Pollen stored around the brood area?
    - Honey
      - Capped?
      - Uncapped?
      - Plenty of empty space?
      - If 80% percent of frames are full, add another super

# Inspections

- What are we inspecting for?
  - Is there an overabundance of drones?
  - Do they have enough honey to make it through winter?
  - Does a weaker hive need to be joined with a stronger hive?
  - Are there any signs of other pests (ants, mice, skunks)?

## Inspections

- Close up the hive
  - Replace the frames in the same order they were
  - Replace the boxes in the same order they were

## Swarming

- Swarming is the natural way for hives to reproduce
- Beekeepers want to avoid swarming behavior because it kills honey production for that year

## Swarming

- Capturing a swarm is a way to obtain bees
  - A swarm will be a queen and about half of a hive
  - The bees are free
  - The public is usually grateful for someone to come get the swarm

## Swarming

- An old poem:
  - A swarm in May is worth a load of hay
  - A swarm in June is worth a silver spoon
  - A swarm in July ain't worth a fly
- Why?
  - A late season (July or August) swarm won't have time to build up stores to survive winter
  - Both the swarm and original hive will probably die

## Swarming

- What happens when a hive swarms?
  - A hive gets too crowded with not sufficient space for the queen to lay
  - Old queen leaves with about half of the workers
    - Workers gorge on honey as fuel
  - Old queen establishes a new hive in a new location
    - New hive site found from a consensus of scout bees
    - The swarm has about 3 days to find a new hive site before they die from starvation

## Swarming

- Workers in the original hive will rear new queens from queen cells
  - The first queen to emerge will sting the other queen cells to eliminate competition
- New queen will perform her nuptial flights
- New queen takes over the original hive and the remaining half of the workers

## Swarming

- Appearance of drones indicates the approach of swarm season
- Swarm cells are queen cells – usually found on the bottom or edges of comb

## Swarming

- Swarm prevention
  - Ensure sufficient space during Spring build-up
    - Spring reversal of hive bodies
    - Add another super on top
    - Break up brood area by placing frames with empty comb between each frame of brood (checkerboarding)

## Swarming

- **Swarm prevention**
  - Remove queen cells
    - Queen cells may be rebuilt quickly
    - Be sure that the hive is queen-right (a healthy, laying queen is present)
    - Use the queen cells to re-queen another hive, or make a split
      - Carefully cut out the queen cell, or
      - Use the whole frame

## Swarming

- **Swarm prevention**
  - Split the hive (creation of an artificial swarm, making two hives from one)
    - Move the frame with the queen into the center of a new hive
    - Give her two frames of food (honey and pollen)
    - Move in another frame of open brood and workers

## Swarming

- **Swarm prevention**
  - Split the hive
    - Move in a two frames of capped brood
    - Fill in the remaining space with frames of comb or foundation
    - Brush or shake in extra workers from brood comb
      - Some will return to original hive
      - Original hive will raise a new queen

## Swarming

- Swarm prevention
  - Split the hive
    - Be sure to leave some young brood and eggs in the original hive
    - Capped brood will shortly emerge to repopulate both hives
    - Do splits early in the season

## Beekeeper's Year

- Since you will be getting your bees in April or May, we will start there
- An argument has been made that the beekeeper's year starts around August 1
  - This is when the bees have to prepare for winter survival
  - Varroa mites peak in the hive at this time
  - This is when you have to be extra alert for any hive weaknesses

## Beekeeper's Year

- We have two nectar flows in Arkansas:
  - Mid-April to mid-June
    - It begins with the blooming of the dandelions
    - Quality and timing of flower bloom is governed by the species characteristics, temperature, day length, and rainfall
  - The nectar flow is also called the honey flow
  - This is the short period when most of the surplus honey will be gathered for winter

## Beekeeper's Year

- The second nectar flow begins in late August through early October
  - These are the fall weeds, i.e., ragweed, milkweed, goldenrod, smartweed

## Beekeeper's Year

- April and May
  - Have your equipment ready for when you get your bees
  - Feed 1:1 syrup
    - The bees are having to use a lot of resources to draw out honeycomb
  - On established hives
    - do hive splits if the hive is strong
    - Remove entrance reducers

## Beekeeper's Year

- June

- Watch for hive becoming crowded

- This is still swarm season

- Add supers as necessary

- When the frames in a box are 80% in use (8 out of 10 frames), add another super

- The nectar flow will end towards the middle of June

- Monitor for varroa mites and small hive beetles

## Beekeeper's Year

- July
  - Harvest surplus honey by removing supers
    - Honey cells should be capped
    - Leave the bees sufficient honey
  - Start feeding 1:1 syrup
  - This is the summer dearth, with very little forage
  - Varroa mites and small hive beetles are starting to peak

## Beekeeper's Year

- August, September, and October
  - A short nectar flow starts in late August to early September
  - Start feeding 2:1 syrup when the fall nectar flow ends
  - Make sure the hives have sufficient stores
  - Treat for varroa mites when honey supers are not on hive
  - Put on entrance reducers mid to end of October
  - Reduce hive size to two brood boxes

## Beekeeper's Year

- November, December, and January
  - You will need a minimum of 45 pounds of honey on the hive for winter survival
  - As temperatures drop, bees will form a cluster with the queen at the center
  - Workers rotate in and out of the center of the cluster
  - Bees can starve with honey to the side of them if they can't break the cluster

## Beekeeper's Year

- November, December, and January
  - Feed fondant or candy boards and pollen patties. Only feed syrup if using an internal feeder
  - If a hive is weak, this is when you will lose it
  - If we have a warm winter, bees will consume more feed because of increased activity
  - Repair equipment and prepare for next season
    - What have I learned? What do I need to do different?

## Beekeeper's Year

- February
  - Feed fondant and pollen patties. Only feed syrup if using an internal feeder
  - Bees will be starting to run low on feed
  - Late February is when spring build up begins
  - The queen should be starting to lay
  - We have warm days in February

## Beekeeper's Year

- March
  - Heavy laying will occur around March 1
  - For a strong foraging force when the nectar flow starts, brood production should be strong **45 days** before nectar flow begins
    - Takes 21 days for a worker to become an adult
    - Takes 23 days for an adult worker to become a forager
  - Feed 1:1 syrup
  - Usually have a cold spell and snow in March