

Presentation for:
Brown County Beekeepers Association
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Maximizing Honey Production

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Keys to Honey Production

- Apiary location
- Know when the flow starts in your area
- Strong bee populations
- Nutrition and feeding
- Control disease and pests (mites)
- Swarm management
- **WEATHER**

For Good Honey Production

You must have strong overwintered colonies

- August thru December is most critical time for preparing bees for spring honey flow
 - Fall bees must be strong and healthy
 - Highest mite counts usually August to December
 - Treat for mites
 - Use alcohol wash or powered sugar shake to test (1/2 cup or 300 bees)
 - 3 mites per 100 bees acceptable
 - Build up bees for winter with syrup and sugar/protein patties
 - September and October bees are winter bees
- **Winter feeding should never be considered emergency feed**
- Winter is not a survival time, just another phase in beekeeping.
- Late December thru March I use sugar blocks and sugar/protein blocks on top frames in 3" spacer
 - I check them every 14 days and replenish as necessary
- **I am a firm believer of providing protein all winter**





Spring Buildup

- May 1st honey flow begins in my location
 - Locust and tulip popular blooming
 - Your foraging bees must be built up before the flow starts
 - **Number one reason for weak honey crop is the bees build up on the flow**
- Start feeding 1:1 syrup mid February until honey flow begins
 - 1:1 Stimulates queen to start laying, once you start feeding you must continue until natural nectar is available
 - Depends on temperature, need 3-4 days a week in high 40's to low 50's
 - If feeding winter food, leave it in until last of March
- Start Feeding Protein Patties mid February until honey flow begins
 - Queen requires protein to lay eggs
 - Feed only what bees will take (Small Hive Beetles love protein patties)
 - Continue to feed protein patties even after bees start bringing in pollen from Maples in March
- Treat bees for Nosema
 - One gallon per 20,000 bees
 - Usually treat after 1-2 feedings
- Keep Screen Bottom Boards closed
 - I keep mine closed until May 1st
 - Queens like dark spaces to lay in







Spring Buildup

- **Hive and Queen evaluation**
 - March 1st I want 6-7 frames bees minimum, 1250 average each side, so 2500 per frame
 - Russian bees can be an exception to this, they usually have less
 - Around first or second week of March inspect hive and brood
 - Depends on temperature, need 3-4 days a week in mid to high 50's
 - Want to see 2-3 frames brood (a frame with 70% brood is about 2300 cells each side (6500 cells total on deep frame) so that is 4600 bees to hatch
 - Egg to forager is 42 days
 - First 21 days egg to hatch
 - Second 21 days in hive as nurse, worker, guard
 - Honey flow in KY May-July (Tulip Poplar and Locust in May)
 - Grade bees A-C and record frames of brood
 - A's and B+'s are your honey producers
 - B's and C's should be combined with A's, re-queened or make nucs from them with new queens
 - Watch for honey bound hive, no laying space for queen
- Inspect again in 2 weeks, want increase in bees and brood frames, **DOUBLED**
- Remember you must have a **STRONG** colony of bees to produce honey

Hive Inspections

2016 Hive Inspections

Large Hives

3/13/2016

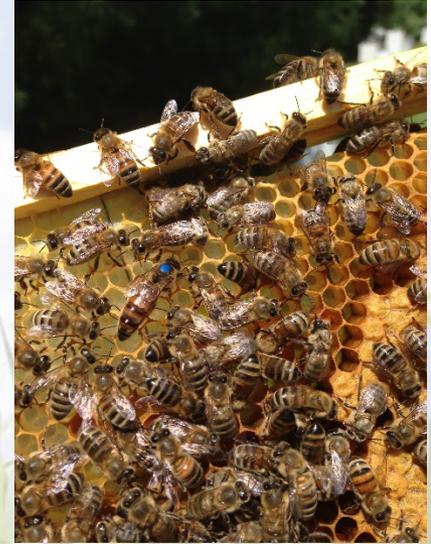
| Hive Number | Queen Color | Queen Race | 1st Inspection Date | Fumagilin-B Applied | Frames Brood | Grade | Empty Frames |
|-------------|-------------|------------|---------------------|---------------------|--------------|-------|--------------|
| 27 | Blue | Carniolan | 3/7 | 3/10 | 1.0 | C | 11 |
| 34 | Green | Carniolan | 3/7 | 3/10 | 3.5 | A++ | 5 |
| 35 | Green | Carniolan | 3/7 | 3/10 | 4.0 | A++ | 7 |
| 23 | Blue(UMQ) | Italian | 3/7 | 3/10 | 5.0 | A++ | 7 |
| 29 | Green | Italian | 3/7 | 3/10 | 5.0 | A++ | 6 |
| 4 | Blue | Russian | 3/10 | 3/10 | 4.0 | A++ | 5 |
| 25 | Blue | KC (2015) | 3/7 | 3/10 | 5.0 | A++ | 10 |
| 11 | Green | Italian | 3/7 | 3/10 | 3.0 | A | 7 |
| 5 | Green | Italian | 3/7 | 3/10 | 4.0 | A | 6 |
| 10 | Green | Italian | 3/7 | 3/10 | 2.0 | B+ | 5 |
| 8 | Blue | KI (2015) | 3/7 | 3/9 | 4.0 | A++ | 10 |
| 3 | Red | Russian | 3/10 | 3/10 | 2.0 | B+ | 13 |
| 15 | Green | K | 3/7 | 3/10 | 3.0 | A++ | 10 |
| 32 | Green | K | 3/7 | 3/10 | 5.0 | A++ | 5 |
| 9 | Green | Italian | 3/10 | 3/10 | 4.0 | B+ | 6 |
| 7 | Red | Italian | 3/7 | 3/10 | 3.0 | B | 4 |
| 6 | Green | Russian | 3/7 | 3/10 | 9.0 | A++ | 2 |
| 22 | Green | Italian | 3/7 | 3/10 | 7.0 | A++ | 6 |
| 12 | Blue(UMQ) | Russian | 3/7 | 3/10 | 5.0 | A++ | 10 |
| 36 | Green | K | 3/7 | 3/9 | 2.5 | B- | 3 |
| 8 | Blue(UMQ) | KC (2015) | 3/7 | 3/10 | 4.0 | A+ | 7 |
| 21 | Green | Italian | 3/7 | 3/10 | 7.0 | A | 5 |

Swarm Cells



Spring Buildup

- **Swarming Reasons**
 - Congestion
 - Weak queen pheromone (queen perfume)
 - Lack of egg laying space (honey bound)
- **Swarm Prevention**
 - If you find swarm cells, break hive down into nucs.
 - Almost impossible to remove all swarm cells and control swarming urge once started
 - Reverse hive bodies
 - Need nightly temperatures averaging around 50 degrees
 - Don't separate a cluster
 - Reverse more than once if necessary
 - Re-arrange frames, create queen laying space, keep her laying in the center and in bottom box
 - Equalizing brood / swapping frames of brood from strong hive to weaker hive
 - Brood frames with bees or without bees (depends on hive strength)
 - Remove honey if necessary to provide laying space
 - Have young queens
 - Add supers of drawn comb, foundation doesn't work
 - Remove old queen and re-queen



Honey Flow Management

- Remember you must have a **STRONG** colony of bees to produce honey
 - You want 50,000 to 60,000 bees around middle of May if possible for main honey flow
 - One large colony 60,000 bees will out produce two colonies of 30,000 bees
 - A colony requires 15,000 bees for nurse and house bees
 - So a colony with 60,000 bees has 45,000 forager bees and two colonies of 30,000 bees have 15,000 forager bees each for a total of 30,000
 - Example of a 40,000 verses a 20,000 colony
 - 40,000 colony has 25,000 foragers
 - 20,000 colony has 5,000 foragers
- Your foraging bees must be built up before the flow starts
- **Number one reason for weak honey crop is the bees build up on the flow**
- Combine hives if necessary to create a strong honey production hive
- Boost a weak hive with a overwintered nuc
 - brood and bees
- Re-queen a weak Spring hive ASAP
 - One of the main reasons to overwinter a couple nucs
 - Spare queens when needed

Honey Flow Preparation

- Have 3 boxes of pulled comb on every honey hive by April 15th tax day
 - Helps to prevent swarming
 - Ready when the flow starts
 - Locust and tulip popular blooming soon
 - Nectar starts out at about 80% water and bees process it to 18.5% to create honey. You must have extra storage space for the nectar storage until bees can process it.
- I only use excluders if necessary and only my modified version
- A super of honey is the best excluder
- Install ventilation spacers
- Remove Screen Bottom Boards by May 1st

Honey Flow Management

- If using foundation, use only one super at a time
- When foundation is 60-70% pulled, add another super on bottom
 - 8# of honey required to produce 1# wax (1# wax about 4-5 medium pulled combs)
 - Medium super requires approximately 2 pound wax or 16# honey
 - **At \$6.00 pound, box of foundation cost you \$96 in lost honey**
- use one or more hives to pull foundation only and then move to honey hives
- Once honey flow starts **Leave Them Alone**
- I harvest three times a year
 - 1st June, July 4th and August 1st
 - All supers off by August 1st
- Place extracted supers back on hives for additional honey or for cleanup
- As soon as last supers pulled I feed all honey hives 4-5 gallon syrup and 2 or more sugar/protein patties
- Treat for mites (this is when mites are at their worst)
- Continue to feed 1:1 if necessary
 - **August is usually a very poor month for nectar**
- Continue to feed protein patties
- Watch out for Robbing





Hives After Honey Supers Removed



Feeding After Honey Super Removal



Recipes

- **1:1 Sugar Water:**
- 2 gallon syrup
 - 10 lbs. granulated sugar
 - 5 quarts water
 - Heat water to very hot, add sugar and stir
 - Add 4-5 teaspoons of Honey B Healthy per gallon
- 5 gallon syrup
 - 25 lbs. granulated sugar
 - 12.5 quarts water
 - Heat water to very hot, add sugar and stir
 - Add 4-5 teaspoons of Honey B Healthy per gallon
 - Add one cap full of bleach (helps prevent mold)
- **Protein/Sugar Patties:**
 - 9 cups AP 23 protein powder
 - 3 cups sugar
 - Add enough 1:1 or 2:1 syrup to make consistence of peanut butter and form into patties on wax paper.

Recipes

- **2:1 Sugar Syrup:**
- 1.5 gallon syrup
 - 10 lbs. granulated sugar
 - 2.5 quarts water
 - Heat water to very hot, add sugar and stir
 - Add 4-5 teaspoons of Honey B Healthy per gallon
- 5 gallon syrup
 - 25 lbs. granulated sugar
 - 6.25 quarts water
 - Heat water to very hot, add sugar and stir
 - Add 4-5 teaspoons of Honey B Healthy per gallon
 - Add one cap full of bleach (helps prevent mold)
- **Sugar/Protein Patties:**
 - 3 cups AP 23 protein powder
 - 9 cups sugar
 - Add enough 1:1 or 2:1 syrup to make consistence of peanut butter and form into patties on wax paper.

Recipes

- **Hard Sugar Blocks:**

- 1 quart water
- 12 lb. sugar (24 cups)
- 6 teaspoons Honey B Healthy
- Five 7"x7"x1.25" cake pans or five 9" pie pans (makes five 3 lb. pans)
- Heat water to boil, add Honey B Healthy, add sugar and mix, heat to 250 deg. mixing occasionally, remove from heat and let cool to 210 deg., stir quickly and pour into pans, let harden (don't let it get too hard while cooling or you can't pour it)

- **Hard Sugar/Protein Blocks:**

- 1 quart water
- 12 lb. sugar (24 cups)
- 3 cups protein powder (I use AP 23 protein powder from Dadant)
- 6 teaspoons Honey B Healthy
- Five 7"x7"x1.25" cake pans or five 9" pie pans (makes five 3 lb. pans)
- Heat water to boil, add Honey B Healthy, add sugar and mix, heat to 250 deg. mixing occasionally, remove from heat add protein powder and mix in quickly. Once mixed, pour into pans, let harden.

Summary

- Bees are livestock
- Nobody has all the answers, just opinions
- Feed anytime and every time it is necessary

Honey Bees survival depends on you, the beekeeper.