# Hale's Honey

- Kevin and Kim Hale, owners
- www.haleshoney.com
- Located in Menifee County KY
- Currently have 71 Hives
- Winter losses: 5 out of 56 for 9% in 2015
- Honey production for 2015
  - #118 hive average
  - #90 average in 2014
- Harvest times: June 1<sup>st</sup>, July 1<sup>st</sup>, August 1<sup>st</sup> (Always done by August 1<sup>st</sup>)
- Create about 100 Nucs each year
- Raise about 125 quality queens each year
- Bees are Italian, Russian, Carniolans





# Fall and Winter Preparation and Management

# August is the Beginning of the Bee Keeping Year

# Preparation in August thru December will Determine your success in the Spring

- August thru December are the Winter buildup months
- If you don't have good bees in the fall, you will not have good bees in spring for honey flow.
- Must have young and healthy bees and LOTS of them
- Keep queen laying into the fall and winter
- Bees you see in September and October are winter bees
- January thru March are the survival months
- February thru April are the Spring buildup months
- May thru July are the honey production months

# **Beekeeping Calendar**

#### **August-December**

Re-queen (keep

young queens)

**Develop Strong** 

Colonies

Treatment for Mites

Winter Preparation

#### January-February

Candy Boards / Sugar

Survival Months

**Top Insulation** 

**Protein Patties** 

Cakes

#### **March-April**

- Rapid Spring Buildup
- Bees and Queen Evaluation
- Hive Re-arrangement
- Hive Reversal

- May-July
- Prevent Swarming
- Produce Honey
- Make Nucs for Hive Increase
- Raise Queens

## **Factors for Success with Bees:**

- Overwinter Strong Colonies
- Rapid Spring Buildup
- Preventing Swarming
- Add Multiple Honey Supers Early
- Harvest Early and Often

# Feed and Keep Queen Laying

## August:

#### Remove Honey Supers

- I like to have all my supers off by August 1<sup>st</sup>
- Extract honey and put wets supers back on hives for cleanup
- Remove cleaned up supers and store for winter
  - Wrap supers in garbage bags and freeze for 48 hours and then store
  - This destroys all eggs and larva of wax moth and SHB
  - Stack supers and use Para-Moth (don't do this in the basement)

#### Perform hive inspection

- Perform inspection to determine the follow:
  - Strength of hive, you want really strong hives headed in Fall and Winter
  - Presence of a good laying queen
    - Mite treatments will affect queen laying
    - You want to see good amount of eggs and young larva, don't need to see queen
  - Determine the number of brood frames you have
    - You need to have 9-10 frames of brood minimum at this time in a double deep
  - Determine the number of food frames you have.
    - You need 5-6 frames of honey and pollen
  - This is not a detailed inspection, should take 7-10 minutes
    - Keep hive open minimal to avoid starting robbing

#### Bees are hot in August and beard up on front of hive

- Providing vent spacer on top and SBB helps with ventilation
- In a super strong hive add a super of comb or just an empty super for extra room

### Robbing

- Robbing can be a real problem any time there is death, which is common in August
- Keep top entrances screened
- Reduce bottom entrance
- Use a robbing screen if necessary
- Keep hives open minimal
- Don't spill syrup or break honey open

### Queens may slow down laying In August, Russians and Carniolan especially

- You can keep her laying some by feeding 1:1 syrup but that is a gamble
- More bees equal the need for more food
- Must have pollen for queen to continue to lay, protein patty may be necessary

#### Small Hive Beetle

- Keep hives very strong, they will overtake a weak hive
- Don't have empty spaces, supers, foundation, etc., bees must protect those areas
- Use Beetle-Be-Gone Sheets, vegetable oil traps
- Spray Guardstar, saltwater around hives
- Use Diatomaceous Earth around hives
- Mash those suckers!!!

#### **Mite treatments**

should begin once supers are off and cleaned up

Apivar- active ingredient is Amitraz,

- Not affected by hot temperatures and doesn't really affect the way bees act to it
- 2 strips are placed in brood chamber with 2 frames between strips
  - If you have brood in 2<sup>nd</sup> box it will need strips also
- Strips are left in hive for 6 weeks
- Can apply strips as soon as honey supers are removed
- Can leave screen bottom boards out and vent spacers on, which helps with ventilation
- Average cost to treat one hive is \$10 for three strips

#### Apiguard – active ingredient is Ttymol

- For normal two deep hive apply two 50g treatments two weeks apart (total treatment is four weeks)
- Place Apiguard on frames of top box with a 2-3" spacer.
- Screen bottom boards must be in and no vent spacers on top
- Bees will react to the Thymol on hot days, you will see many more bees on outside of the hive
- Queens tend to stop laying during the treatment process
- Don't apply Apiguard right after you have re-queened a hive
- You can also apply Apiguard in a 25g dose between brood boxes each week for four weeks. Bees and queens seem to handle this dosage better
- If you have a single deep box hive, apply two 25g treatments two weeks apart.
- If you have a nuc, apply two 25g treatments two weeks apart.
- Average cost to treat normal hive is \$6.50 with pre-packaged or \$3.00 with tub

### **Oxalic Acid**

- Approved this year by EPA for use on bees
- Applied by vaporizer or drizzle method
- Kills all open brood
- Brushy Mountain Bee Farm sells it
- I have not tried this so I can't recommend it
- Average cost to treat normal hive \$.50-\$1.00

























# **Hive Strength**



## Super Strong Hive



**Fairly Strong Hive** 



## **Strong Hive**



Weak Hive

# Look for honey or pollen bound hive

- Bees can have an excess honey or pollen supply in brood boxes
- Pollen is a bigger concern in August
- How many bees do you have in the hive?
  - Fully covered brood frame is about 1500 bees per side
  - Approximately 2450 capped cells per side if 70% capped brood
    - A deep frame has 7000 cells both sides
    - Need 40,000-50,000 plus bees in August
- August Dearth
  - Typically there isn't much for bees to eat in August
  - If you determine food stores is low, feed a lot fast
    - Some hives may need 2-4 gallon 1:1 syrup
    - Also feed a combination sugar/protein patty (7-9 parts sugar/3 parts Protein)
      - They will consume this, not store it
      - It is a quick boost of carbohydrates for the bees



## September:

- Finish up mite treatments
- Continue to monitor amount of feed hive has
- Checking outer frame for food is a quick and easy check
- Check hive every two week to make sure you have a queen
- September is a great time to re-queen a hive
- Monitor for honey bound hives
- Monitor hive for strength
- If you have a weak hive combine it with a strong hive

#### October:

- Perform hive inspection first or second week of October
  - Mite treatments should be completed
  - To determine amount of food hive has for fall and winter
    - Determines how much if any you need to feed in fall
    - You need to have 7-8 frames of food minimum at this time
    - By the end of November you will need 50# honey or syrup and pollen for winter months
    - Italians need the most food reserves and Russians the least
    - Frame food weights
      - Deep frame = 8-9# food
      - Medium frame = 3-4# food
  - Make sure you have a queen and she is still laying (just look for eggs and larva)
    - Mite treatments will affect queen laying
    - You want to see a good brood pattern, 5-6 frames brood
    - By November December the queen will really slow down laying, Russians almost stop laying completely
  - Honey Bound Hive
    - In October if feeding or good nectar flow you can quickly get a honey bound hive
    - As bees in brood nest hatch out bees will fill cells with honey leaving little room for queen to lay
    - Can add a frame of empty comb into center of brood nest to give queen laying room
    - If feeding, feed only sugar/protein cakes
    - Bees won't store solid food, they consume it
  - How many bees do you have in the hive?
    - Fully covered brood frame is about 1500 bees per side
    - Approximately 2450 capped cells per side if 70% capped
    - A deep frame has 7000 cells both sides
    - Need 25,000-30,000 plus bees for winter

### **Brood Frame Becoming Honey Bound**





### Queen Looking For a Place to Lay





- Bees should be bringing in nectar and pollen from Goldenrod and Asters
  - Goldenrod has a distinct smell
  - Goldenrod lasts until frost
  - Goldenrod yellow pollen, Asters white pollen
- If a double hive isn't very strong, cut down to a single box.
  - If bees can't use and can't protect it, condense them to one box
  - Easier for small hive to survive in a smaller space
  - Protect comb from wax moths and hive beetles
  - Comb is worth its weigh in gold, store and preserve it well!!!
- Reverse hive bodies (risky, not recommended unless closely monitored and you are willing to feed)
  - I have done this with good success
  - Sometimes in the fall if you have a small population they will completely move up into top box
  - This also depends on nectar flow coming in and if they can fill the top box
  - You should plan to feed 4-5 gallon 2:1 syrup unless you have a good nectar flow
    - 5 gallon of 2:1 syrup can add about 45# feed to a hive

# Goldenrod

## Asters



- Reduce or block entrance from wind
  - Keep wind from blowing directly into hive entrance
- Mouse Guards
- Close bottom board off in SBB
  - Can monitor bee strength by looking at mite board
- Prop outer cover open with stick (I do this year round)
- Beetles
  - Mash them!!
  - Not much you can do right now, they are not to bad in winter but they will cluster with bees
- Treat for Nosema
  - Recommend you treat fall and spring. Can be one of the major causes of bee loss in the winter
  - Looks like expelled waste trail on top of frames and front of hive.
  - Fumagilin-B
    - Fall treatment is 2 gallons treated syrup per double hive (Approx. 30,000 bees)

#### **Insulation board**



### **Reduced entrance and mouse guard**



#### **Screened top entrances**



## Mite board to view hive strength



#### November:

- Perform hive inspection mid November if weather permits
  - Determine amount of food supply in the hive for winter
  - Look at outside frames for food
  - If food supply low, feed a lot fast
  - Feed 2:1 syrup or sugar/protein patties or both
  - Do not worry about hive having a queen or brood
- Turn top entrance away from wind direction
  - Depends on nightly temperatures, average 45-50 degrees
- Top Insulation ½" to 1" board above inner cover (on by December 1<sup>st</sup>)
  - Help with condensation (warm air hitting cold inner cover)
- By the end of November you need 50-60# honey or syrup and pollen for winter months
  - Italians need the most food reserves and Russians the least
- Frame food weights
  - Deep frame = 8-9# food
  - Medium frame = 3-4# food

#### **December:**

- Put candy board or hard sugar blocks on for winter as an emergency feed source mid December, no later than Christmas
- Check hive every 2-3 weeks to make sure they still have food
  - Don't open hive for any type of inspections
  - Keep hive open only minimal time to add food
  - Move emergency food on top of cluster

# **Fall Feeding Options**

Fall feeding (October-December) is for build up

### Fall feeding options:

- Sugar water
  - In top feeders, jugs, buckets, jars, Ziploc bags or directly into empty comb
  - 1:1 keeps queen laying but risky in fall, additional moisture
  - 2:1 best choice for fall, less moisture in hive
  - HFCS or granulated sugar
  - No real cost difference in HFCS and sugar water
  - 1 gallon 1:1 syrup equals about 6.5# food
    - 5 gallon 1:1 syrup equals about 32.5# food
  - 1 gallon 2:1 syrup equals about 9# food
    - 5 gallon 2:1 syrup equals about 45# food
  - Honey Bee Healthy additive (optional)
- Protein patties
  - Buy pre-made, Brood Builder, Mega Bee, and AP 23
  - Use powder and make patties yourself

### Sugar/Protein Cakes

- Excellent Fall feeding option
- Bees won't store solid food, they consume it
- 9-3-2 Sugar/protein/1:1 syrup mixture

### Sugar water in baggie

**Protein Patty** 

#### Sugar water in jug



#### Sugar water in bucket



### **Bees Love Sugar/Protein Patties**





### **Prevent robbing**



Sugar water in frame





# **Winter Feeding Options**

# Winter feeding (January-March) is for survival

- Hard Sugar cakes
- Sugar/Protein cakes
- Candy boards
  - Hard
  - Wet
- Protein Patties
- Winter Patties (Dadant) very similar to my sugar/protein patties
- Wet sugar
  - Just enough water to create very thick mixture
  - Put on wax paper on top of frames

- Dry sugar
  - Placed on top frames on newspaper
  - Placed on top of inner cover
  - I don't use this option
- Honey Bee Healthy
  - I use this year round in liquid or solid feed
  - Use 4-5 teaspoons per gallon
- Put Winter food supplies on by mid December
- Check supplies every 2-3 weeks
- Try to check hive quickly on 40-50 degree day
- February is the time to begin preparation for honey season
  - Pollen patties
  - 1:1 syrup

## Hard Sugar Cakes





## Sugar/Protein Patties







## Hard Sugar Candy Board





## Wet Sugar Candy Boards





## **Pollen and Winter Patties**









# Recipes

#### 1:1 Sugar Water:

- Take straight HFCS and double with equal amount water
- Homemade 1:1 (2 gallon syrup)
  - 10 lbs. granulated sugar
  - 5 quarts water
  - Prefer to heat water to boil, remove from heat and add sugar and stir
  - Add 4-5 teaspoons of Honey B Healthy per gallon

#### 2:1 Sugar Syrup:

- Straight HFCS equals 2:1 mixture
- Homemade 2:1 (1.5 gallon syrup)
  - 10 lbs. granulated sugar
  - 5 pints water
  - Prefer to heat water to boil, remove from heat and add sugar and stir
  - Add 4-5 teaspoons of Honey B Healthy per gallon

#### **Protein Patties:**

- Purchase pre made patties or purchase protein powder and mix as instructions indicate
  - Brood Builder, Mega Bee and AP 23

#### Hard Sugar Blocks:

- 1 pint water
- 6 lb. sugar (12 cups)
- 6 teaspoons HBH
- Two 7"x7"x1.25" cake pans or two 9" pie pans (makes two 3 lb. pans)
- Heat water to boil, add HBH, add sugar and mix, heat to 245 deg. mixing occasionally, remove from heat and let cool to 190 deg., stir quickly and pour into pans, let harden (don't let it get to hard while cooling or you can't pour it)

#### Sugar/Protein Cakes:

- <u>3 cups protein powder</u>
- 9 cups sugar
- 2 cup 1:1 syrup
- Mix together to consistence of peanut butter and form into patties on wax paper.

#### Candy Boards:

- Hard
  - Same recipe as hard sugar blocks only doubled recipe
- Wet
  - Mix 10 lb. sugar with minimal water for a mixture like gravel
  - Mash into form and let dry and harden (don't not make it too wet)
  - Place can while forming board or cut hole in center for ventilation

#### Wet Sugar:

Mix sugar and very little water until gravel consistence and place on wax paper and place directly on top of frames

# Summary

- Bees are livestock
- Nobody has the answers, just opinions
- Feed anytime and every time it is necessary
- Fall bees determine your spring honey crop

Honey Bees survival depends on you, the beekeeper.