

Hale's Honey

- Kevin and Kim Hale, owners
- www.haleshoney.com
- Located in Menifee County KY
- Currently have 120 Hives
- Winter losses: 0% for 2016 (75 hives)
9% in 2015 (56 hives)
- Honey production:
 - #118 hive average in 2015
 - #95 average in 2014
- Create about 160 Nucs each year
- Raise about 250 quality queens each year
- Bees are Italian, Russian, Carniolans







Nuc Production



Queen Production





Honey Production





Fall and Winter Preparation and Management

Getting the bees ready for Winter

August is the Beginning of the Beekeeping 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	January-February	March-April	May-July
<ul style="list-style-type: none">• Treatment for Mites• Re-queen (keep young queens)• Winter Preparation• Develop Strong Colonies• Feed and Keep Queen Laying	<ul style="list-style-type: none">• Survival Months• Top Insulation• Candy Boards / Sugar Cakes• Protein Patties	<ul style="list-style-type: none">• Rapid Spring Buildup• Bees and Queen Evaluation• Hive Re-arrangement• Hive Reversal	<ul style="list-style-type: none">• 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

August:

- **Remove Honey Supers**

- I like to have all my supers off by August 1st
- 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**
 - This is not a detailed inspection, should take 7-10 minutes
 - Keep hive open minimal to avoid starting robbing
 - 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



Hive Strength



Super Strong Hive



Strong Hive



Fairly Strong Hive



Weak Hive

- **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, used dryer sheets
 - Spray Guardstar, saltwater around hives
 - Use Diatomaceous Earth around hives
 - Mash those suckers!!!

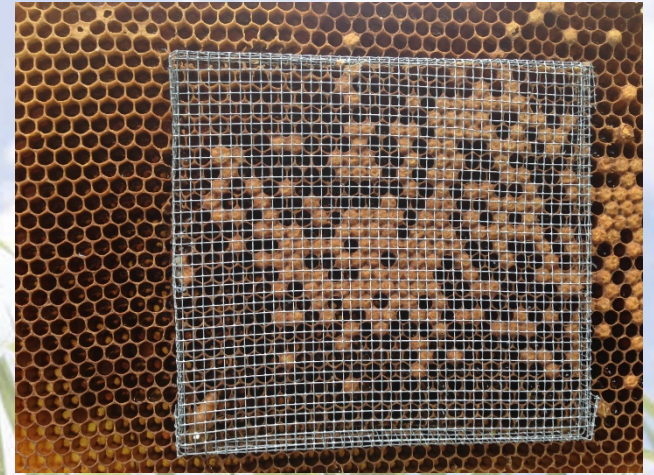
August Dearth

- 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 (9 parts sugar/3 parts Protein)
 - They will consume this, not store it
 - It is a quick boost of carbohydrates for the bees

September:

- Start or finish up mite treatments
- Check hive every two weeks to make sure you have a queen
 - Just look for eggs, don't need to see queen
- **September is a great time to re-queen a hive**
 - The queen needs to be laying good to produce winter bees
- Monitor for honey bound hives
- In late September, if you have a weak hive combine it with a strong hive
 - Never combine two weak hives
- Continue to monitor amount of food hive has
 - Checking out two frames for food is a quick and easy check
 - Always like to see 3-4 frames of food in a hive at any given time, minimal
 - Lifting the top box can tell you a lot about food supply
- If you think hive is light **FEED, FEED, FEED**
 - Feed a lot of 1:1 syrup quick (3-4 gallon) and or feed sugar/pollen patties
- **Never let your bees go hungry**
- Monitor hive for strength
 - We want strong hives headed into winter
 - How strong is your hives

Re-queening



Mite treatments

- should begin once supers are off and cleaned up. You also want temperatures in low 80 range.

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 2nd 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 four strips**

Apiguard – active ingredient is Thymol

- 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, especially if it is hot.**
- 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

- Applied by vaporizer or drizzle method
- Does not kill mites in brood, only kills mites on the bees
- Use in late fall when hives have less brood (September)
- Two treatments two weeks apart
- **Average cost to treat normal hive \$.50-\$1.00**



- 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 50,000-60,000 plus bees in August
 - Need 40,000-50,000 bees in October
 - Need 30,000-35,000 bees for winter



Frame with
3000 bees
and 5000
capped
brood



Hive has 12
frames
brood
(50,000 plus
baby bees)
with
Approximate
ly 45,000
bees in hive

Fall Feeding







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 5-6 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

Brood Frame Becoming Honey or Pollen 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 weight in gold, store and preserve it well!!!
- **Reverse hive bodies (you must monitor closely and feed quickly)**
 - 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
- **Combine weaker hives with stronger hives**
 - Never combine weak hive with another weak hive
 - Newspaper combine method best, make sure to remove queen from the one you are combining

Goldenrod

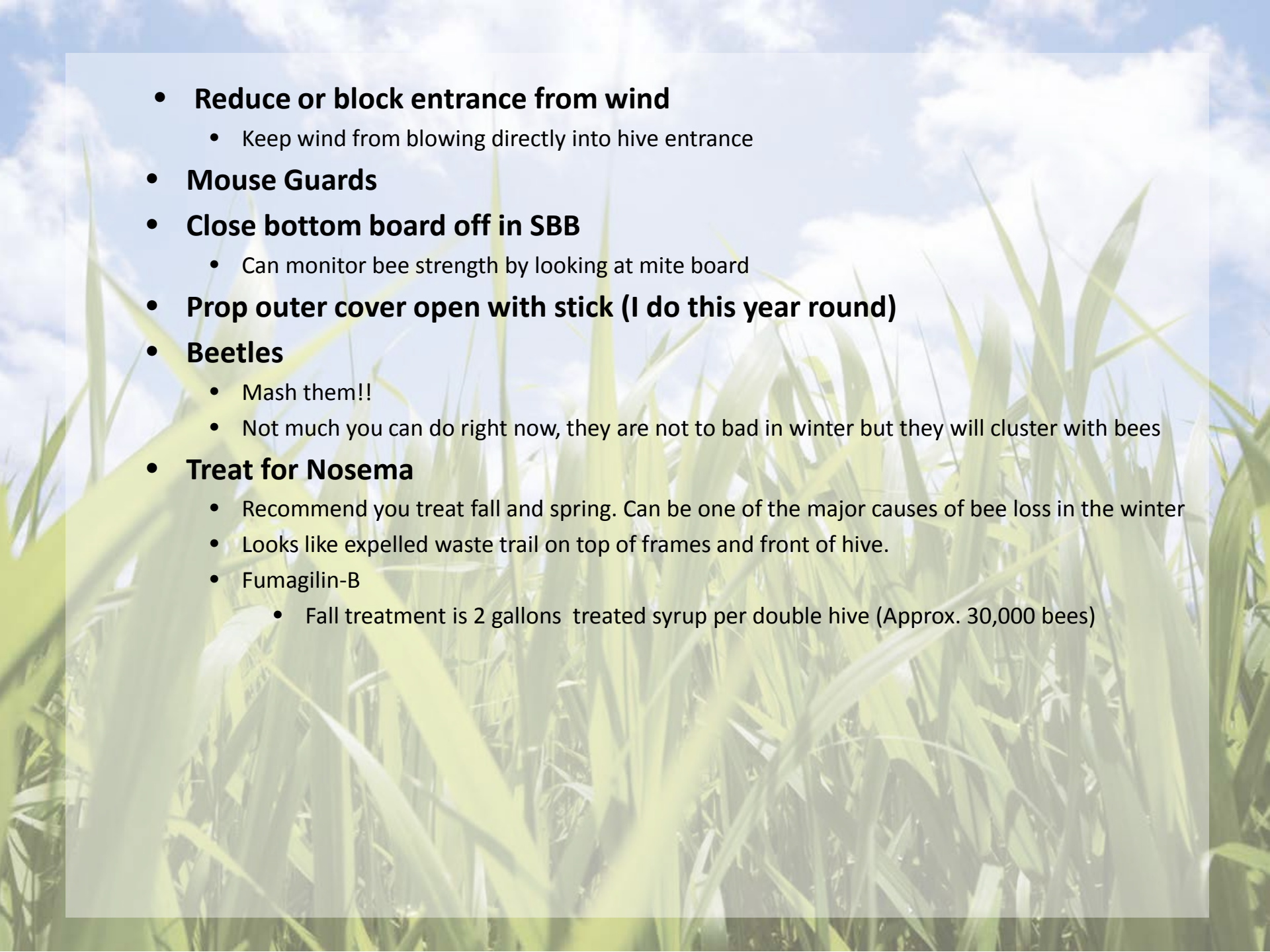


Asters



Pollen coming in



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- **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 too 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



Screened top entrances



Reduced entrance and mouse guard



Mite board to view hive strength



November:

- Perform brief 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 1st)
 - 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
 - Feed only 2:1 syrup in November and sugar/protein patties
- Frame food weights
 - Deep frame = 8-9# food
 - Medium frame = 3-4# food

December:

- Last Chance to make sure hives have adequate food supply for winter
 - Can still feed 2:1 syrup if weather warm enough (need about 45 degree days)
- Put hard sugar blocks on for winter feed source mid December, no later than Christmas
- Keep protein on the hive, either in patty form or hard sugar blocks with protein mixed in
- Put screen bottom boards in, I leave mine in until May 1st
- 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 food on top of cluster if necessary
- Wrap hives if you choose.
 - I wrap all my double nucs with tar paper

Fall Feeding Options

Fall feeding (September-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, more eggs equal more food needs
 - 2:1 best choice for late fall (November and December)
 - 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)
 - Sugar/Protein Cakes
 - Excellent Fall feeding option
 - Bees won't store solid sugar, they consume it
 - 9-3-2 Sugar/protein/1:1 or 2:1 syrup mixture



Winter Feeding

Avoiding Winter Losses

- Must have strong colonies in fall heading into winter
 - if you don't have good bees in the fall, you will not have good bees in spring for honey flow.
- I check on every hive every 14 days year round
 - I do three complete inspections per year, April, August, November
 - I feed anytime bees need food
 - I check every hive in early November and determine final food resources and feed 2:1 syrup as needed
- Must have young and healthy bees and **LOTS** of them
 - I keep queens laying well into November and early December
 - I want 30,000-35,000 plus bees in December
- How many bees do you have in the hive?
 - Fully covered brood frame is about 1250 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

Avoiding Winter Losses

- I feed sugar/protein patties between brood boxes from August to December every 14 days
- Keep young queens
 - Re-queen every year
- Make sure bees have adequate food resources
 - I want 11-12 deep frames honey/pollen on a double deep hive (deep frame equals about 8#)
 - I want 6-7 deep frames on a single deep for double nuc hive (deep frame equals about 8#)

Winter Hive Preparation

- Place insulation board ½”-1” on top of inner cover
- Turn top entrance away from wind direction
- Prop outer cover up with a stick
- Reduce entrances
- Install SBB
 - I put my boards in 1st and December and leave in to 1st of May
- Wrap hives
 - Some say this isn't necessary but I see some benefit
 - I wrap only my double nucs in sets of two with black roofing felt
 - Experimenting with wrapping single nucs with insulation board this year
 - I believe wrapping help mores for spring buildup
- Put winter feed on by Christmas





Winter Feeding

- Winter is not a survival time, just another phase in beekeeping.
- Winter feeding should never be considered emergency feed
- In January and February I use sugar blocks and sugar/protein blocks on top frames in 3" spacer
 - Place 2-3 on each hive right before Christmas
 - Be careful placing to early or bees will move up to them
 - » Make sure bees have clustered a few times
- Dadant winter patties, or candy boards also good options
- I am a firm believer of providing protein all winter
 - This year my hives have twice the pollen stored as usually











January:

- Check hive every 2 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



February:

- February is the month we start building bees up.
- Put 1:1 syrup and protein patties on when daytime temperatures reach 45 degrees.



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)

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
- 4 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 protein powder (Brood Builder, Mega Bee and AP 23)
- 9 cups sugar
- Add enough 1:1 or 2:1 syrup to make consistence of peanut butter and form into patties on wax paper.

Protein/Sugar Patties:

- 9 cups protein powder (Brood Builder, Mega Bee and AP 23)
- 3 cups sugar
- Add enough 1:1 or 2:1 syrup to make consistence of peanut butter and form into patties on wax paper.

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)

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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.