

Spring Management

by Dana Stahlman

"A new beginning for all beekeepers"



**If it is in
bloom
the bees
will find
it!**

**Crocus
an early
blooming
flower**

**Spring Management begins
much earlier in the warmer
areas of the United States.**

**New beekeepers will be
installing package bees**

**Over wintered hives will be
building bee populations,
requiring inspections for
health, population growth,
disease and pest control.**

**Management in the spring is
the key to a successful
beekeeping year!**

Spring Management

Spring management tasks include:

- 1) Evaluating hives/queens and bee populations
- 2) Hive Manipulations –
 - Equalizing colonies
 - Simulative feeding
 - Reversing brood boxes
 - Requeening
 - Adding supers
- 3) Disease control
- 4) Swarm control



A person managing honey bees must understand a number of factors that go into a bee hives rapid growth of population in the spring season.

Bees coming out of the winter season have been under stress – survival is not easy for any colony.

Hopefully the bees were provisioned with plenty of food and a good queen. Additionally, mites and disease may have added to the stress. Weather also played a factor – how many days did the bees have for cleansing flights? How cold did it get? What about wind breaks?

• Spring Management



Here are two hives – one very strong and one weak. Beekeepers with several hives have an advantage over the beekeeper with only one hive – especially if that hive is weak.

Spring management begins with an inspection of the bee hive:

A beekeeper must translate what he/she sees into a plan for action.

Bee inspections should begin just as soon as the weather permits. Some early blooming trees will show some color.



Inspect when temperatures are at least 60 degrees F.

Bees will be flying from the hive.

- **A weak hive**



**Chance of survival?
Almost none
without help.**

A quick examination of this hive did not take long. Bees were found on only three frames. The bees were alive but the bee population was small.

The bees survived the winter. Now the beekeeper must provide help for this hive to survive the spring season.

Frame from weak hive



Compare this frame to a frame from a strong hive:

A Frame from a strong hive



The difference: No honey stores on the frame, Bees clustered in the center without brood being raised, and the frame still has foundation to be drawn into cells.

It has honey, brood and all cells drawn on the foundation and no disease issues.

Hive Manipulation is going to be required for a weak hive!

**During the inspection --
Determine if the weak hive has a queen and if she has started to lay eggs!**

During the inspection, three obvious choices should be obvious.

- 1) Buy a new queen and introduce her into the hive ASAP and feed the hive.**
- 2) If you find a queen, feed the hive and borrow frames from other hives to provide additional bee population.**
- 3) Decide to combine the weak hive with a stronger hive. One less hive but the bees are saved!**

If no queen is found, order a new queen immediately if you want to try to save this hive. Your success will depend upon the number of bees in the hive and if there is any brood available for population growth. Feeding will be required for the hives survival!



During the inspection, you will also need to determine if some other hive manipulation will provide a better outcome?

If the plan is to save the hive by adding some bees.... And maybe a new queen...



The frames selected must come from a hive strong enough to survive without reducing their ability to grow stronger and continue to build a strong population of bees.

The best situation would be to pick up the weak hive and switch locations with a strong hive.

This is both -- frame and hive Manipulation.



Why is this a better choice?

Answer: The flight bees from hive #2 will return to the location they left – thus the move will add bee population to the weak hive! If hive #1 is not moved, many of the adult bees transferred on frames will return to their own hive/hives.



1

2

- The weak hive strengthened

Is not out of the woods!

One thing will happen – the bees from the strong hive remain with the weak hive. Thus with a stronger population of bees the hive will be able to defend itself and grow a population of bees.

With brood and eggs available, the bees may even try to replace the old queen with what is called the supercedure process. With a small population of bees, the old queen will be easier to find. A decision needs to be made to replace the old queen. Feed sugar syrup [2 parts water to 1 part sugar].

Add more frames with brood and bees to equalize this hive. Weak hives can be made stronger with good hive management.

One goal of spring management is to help hives grow stronger.





If you have a number of bee hives, the task is to try to equalize all the hives to the same strength. This requires moving frames and sometimes locations of hives to give each colony an equal start on the spring.

Any failing queens need to be replaced!

A strong hive needs a good queen, a number of young bees to feed larvae and attend to cell building, and forager bees to collect the nectar and pollen.



What to look for!



When you take off the inner cover, you can get an idea of hive population by looking at the number of bees covering the top bars of frames and how aggressive they are!

The future growth, health, and success of a hive of bees depend on the genetic characteristic of the queen.

Some desirable characteristics of a queen.

- 1. Survives winters – hygienic and honey storage characteristics.**
- 2. Produces good brood patterns and reduces egg production when nectar and pollen sources diminish.**
- 3. Her bees are easy to work – gentleness is a genetic trait.**

Hive maintenance

- **Tasks:**
 - **It is time to remove old frames and replace them with new foundation. Bees will draw new comb in the spring – not late in summer.**
 - **It is time to clean the bottom board and clean up around the hive. Re-level the hive if necessary.**

Keep in mind that many things need to be done early in the spring.

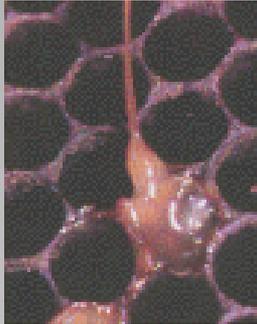
Any critters that spent the winter in the hive will have caused some damage.



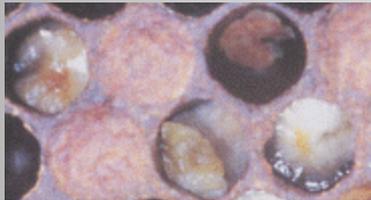
These mice came from this nest. I wasn't quick enough to get a picture of their mother.

Hive maintenance

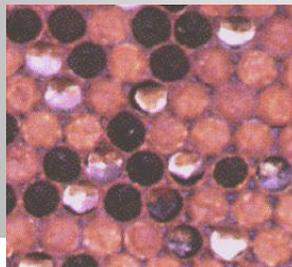
- **Another task is to check the hive for brood diseases: (A brief overview)**



This is the worst disease of the honey bee. [American foulbrood] It is very contagious to other bees! Many states require burning of the hive if detected.



This is a disease often seen in the spring – something like a cold [European foulbrood]



Chalk like mummies in cells. [chalk brood]

It is important that the hive is healthy!

A sick hive will not build up bee populations and gather a honey crop.

Bees weakened by pest such as mites will have a shorter life span and add stress to the hive.



Varroa mites are the cause for many colonies to collapse.

- **Hive inspections are important if the beekeeper is to take action to help bees.**
- **Hive management is a result of what the beekeeper sees during an inspection of the hive! Management requires a plan of action.**



The hives are all about equal and supered for the honey flow to come.

Topics such as diseases, queen evaluations, making splits, honey production, and advanced management techniques are covered in later power point presentations.

The goal is to have hives like these. Only strong hives produce honey crops.

To reach the honey bee work force (bee population) to collect and store nectar requires a good queen and healthy bees and the proper management.



Of prime importance in the spring is the management of the hive. Manipulations of an overwintered hive are a bit different than starting a new hive with a package of bees.

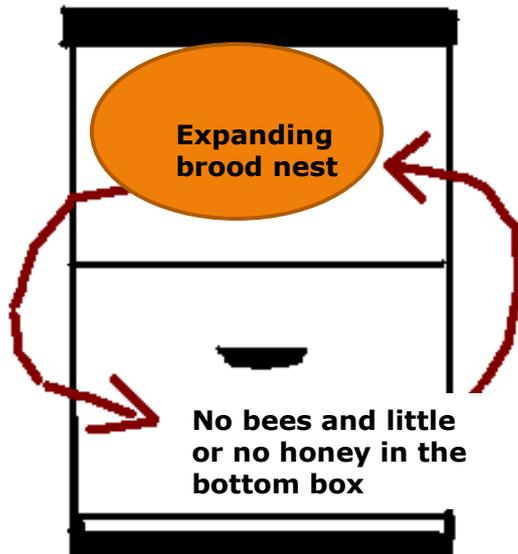
- *The bees have drawn comb – thus they will exert more effort in brood production.*
- ***Bee populations in a strong hive literally explode.***
- *Brood production requires food – stored food in the comb, new pollen and nectar being brought into the hive or feeding by the beekeeper will be needed.*

With an expanding population, bees need more room!

- **Manipulation of bee hives – Early Spring**

Reverse Hive Bodies

The bottom box needs to be moved to the top position



A typical established hive in spring

By early spring the bees move up into the upper hive body and the bottom hive body is usually filled with comb and no honey.

This bottom hive body allows room for expansion of the brood nest.

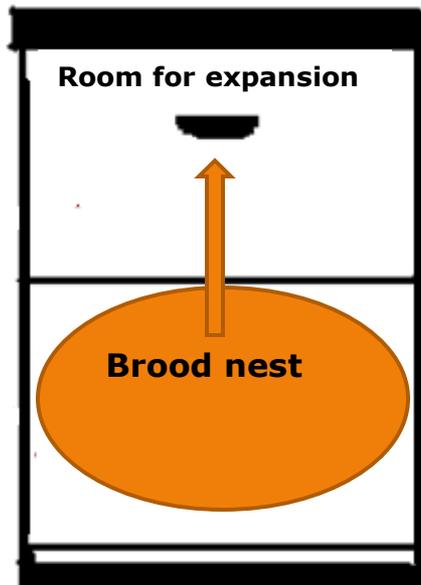
Honey bees prefer to move up rather than down and by moving the bottom box up, it will open up the brood nest.

Management of bee hives

Boxes now reversed.

Reverse Hive Bodies

Bottom box moved to the top location and the top box moved to the bottom location.



Warmth from the cluster rises and allows the bees to move the brood nest up much quicker than if they had to move down.

The top box is now available for the queen to move into and start laying eggs in the open cells.

Heat rises and thus the bees will eagerly expand the brood nest upward.

Bees will be storing pollen and nectar around the brood nest. This move allows room for both eggs, pollen and nectar storage.

The goal of spring management is to have hives strong and healthy!

Strong hives store honey!

During its lifetime a honey bee will gather about 1/12th of a teaspoon of honey. It takes a lot of bees to fill a honey super with nectar which the bees convert to honey.

Bee literature gives estimates of what a honey bee can gather. I just have to guess at the number from the literature but this much is true – it takes a lot of bees foraging for nectar for the bees to store surplus honey.

Swarming

In some areas of the U.S. beekeepers sell their swarms. Beekeepers feed the bees to stimulate brood production. Bees are shaken from hives to be sold as package bees.



Swarming

- **Strong hives create another issue for the beekeeper:**
- ***The prime condition/factor in swarming by a colony of bees is the crowded condition of the brood nest.***

Swarming results in loss of considerable bee population and the interruption of the hives ability to produce a good honey crop.

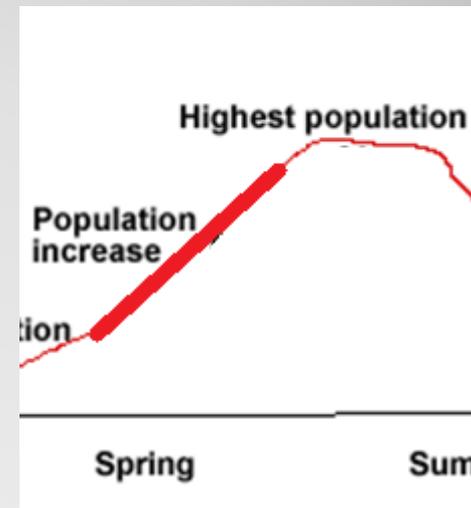


As the brood nest expands



Bees will begin to hang on the outside of the hive during the day. These bees are not gathering any nectar! They most likely have no place to store it.

The nest becomes very crowded. The bees find fewer cells to store nectar and pollen and the nurse bees have fewer new open cells to clean for the queen to lay more eggs.



Conditions are ripe for the hive to swarm!



Things to look for!

Frames filled with brood, pollen and honey!

Adult drones taking flight during the afternoon – 1:00 p.m. to 4:00 p.m.

The start of queen cells – called swarm cells or swarm cups.

Excessive wax comb being built at bottom of frames, and between frames. Often called burr comb.



“Swarming can rarely be prevented entirely but it can be reduced to a reasonable level by good management”, Quote from Albert Jaycox in his book *Beekeeping in the Midwest.*

If room for population expansion is not available – The result is: [a movie of a swarm leaving the hive].

Hive Management

- Open up the brood nest.
- Add honey supers
- Hunt and cut down queen cells.
- Make increases (splits).
- Clip queen's wing
- Change position of hives – move strong hives and place a weaker hive in its place.
- Add supers

Some Management Techniques to prevent swarming and opportunities to make increases.

A lost swarm is equal to the loss of 30 to 60 pounds of surplus honey!



Clipping the wing of a queen

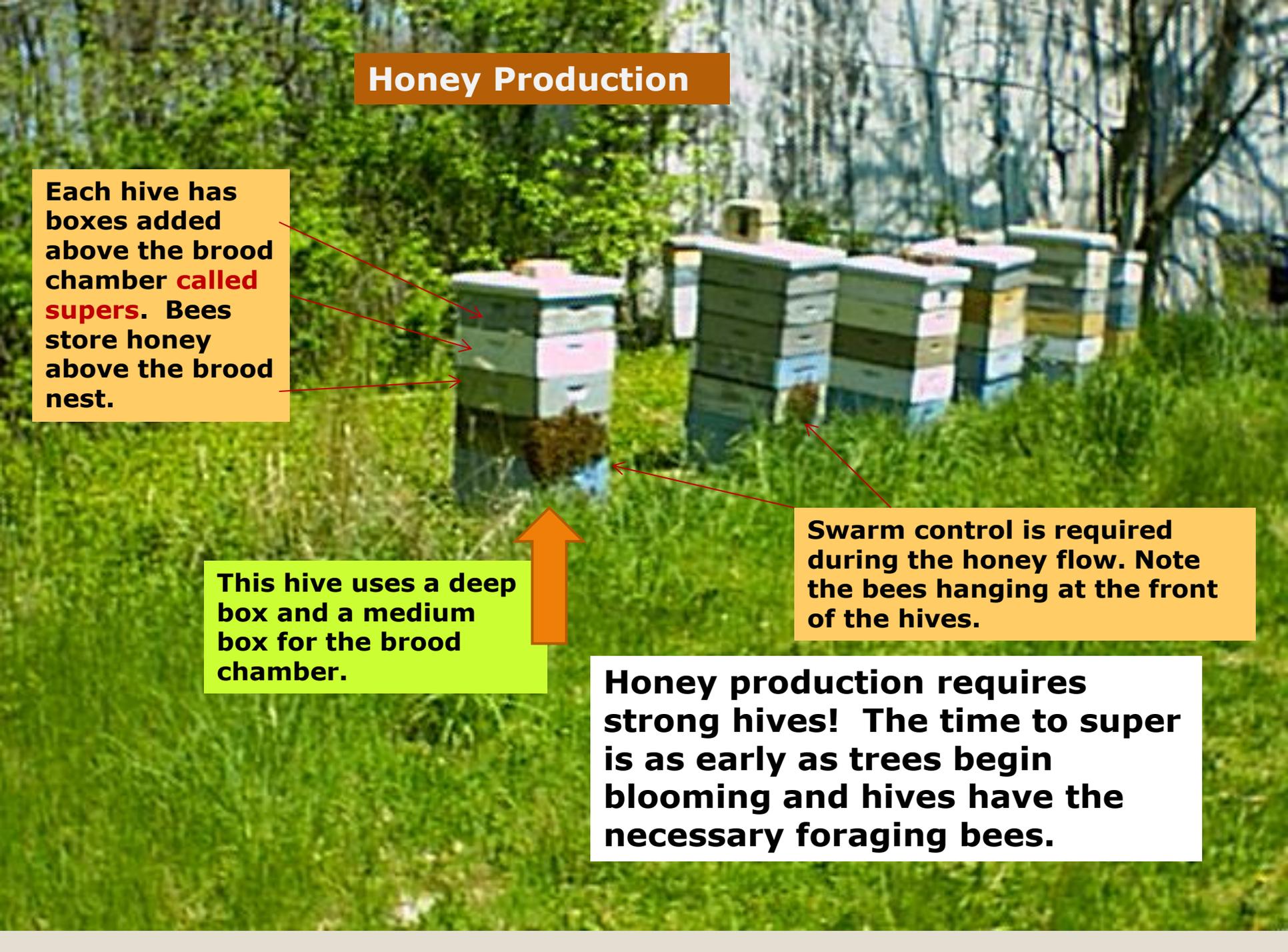
Honey Production

Each hive has boxes added above the brood chamber **called supers**. Bees store honey above the brood nest.

This hive uses a deep box and a medium box for the brood chamber.

Swarm control is required during the honey flow. Note the bees hanging at the front of the hives.

Honey production requires strong hives! The time to super is as early as trees begin blooming and hives have the necessary foraging bees.



Honey Production

How many boxes to add?



Honey supers are generally shallow or medium boxes. Special boxes are needed for comb honey production.

A general rule of thumb is bees will gather 60 to 100 pounds of honey during the season. Boxes with drawn comb will require less work by the bees – they don't have cells to draw out on new foundation. Thus, more honey will be produced on drawn comb.

One medium box will hold about 40 pounds of honey.

A shallow box will hold about 30 pounds of honey.

Established hives will need two or three or four boxes.



Keeping the queen out of the honey supers.

A queen excluder is placed between the brood chamber and the honey supers. It may have a wood or metal frame.

Beekeepers try to keep the queen in the brood chamber to lay her eggs. A piece of equipment called a queen excluder accomplishes this. Some bees don't like to go thru the queen excluder and the brood nest becomes honey bound. It may promote swarming.

Making increases

A beekeeper may take advantage of the large increase in population by making more hives. It is definitely one way to control swarming and increase the number of hives one has. If done early in the spring, these hives will both develop into strong honey producing hives.

Start with a strong hive



If it is a two story hive, the top hive body can be removed and set on a bottom board set next to the mother hive.

The queen must be located and placed in the newly created hive.

A new queen must be introduced to the hive without a queen and young brood frames moved into it to equalize the population of both hives.

The beekeeper has two hives now instead of one hive. Both as close as possible being equal in population.



- This has been a quick overview of spring management.
- Summer management is coming up and we can look forward to topics dealing with hot weather- pollination – honey harvest – small hive beetles and wax moth- moving bees and other issues.



This is a honey super filled with honey. A honey super is heavy to lift and carry. One decision a person buying honey super boxes must take into account is: what can they carry? Eight frame boxes are lighter to carry than ten frame boxes. Deep boxes are heavier than shallow or medium boxes.

See the slides on hive increase for methods to increase the number of hives.