

Hive management in the first year of beekeeping

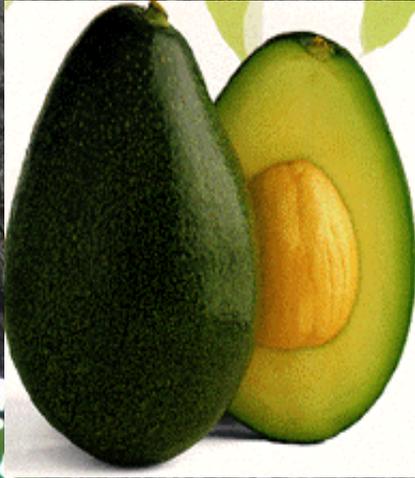


Dr. Deborah Delaney
University of Delaware



Services to people

Honey bees are the primary insect pollinator used in agriculture





Honey bees are the most important
managed pollinators in North
America

Products from the Hive

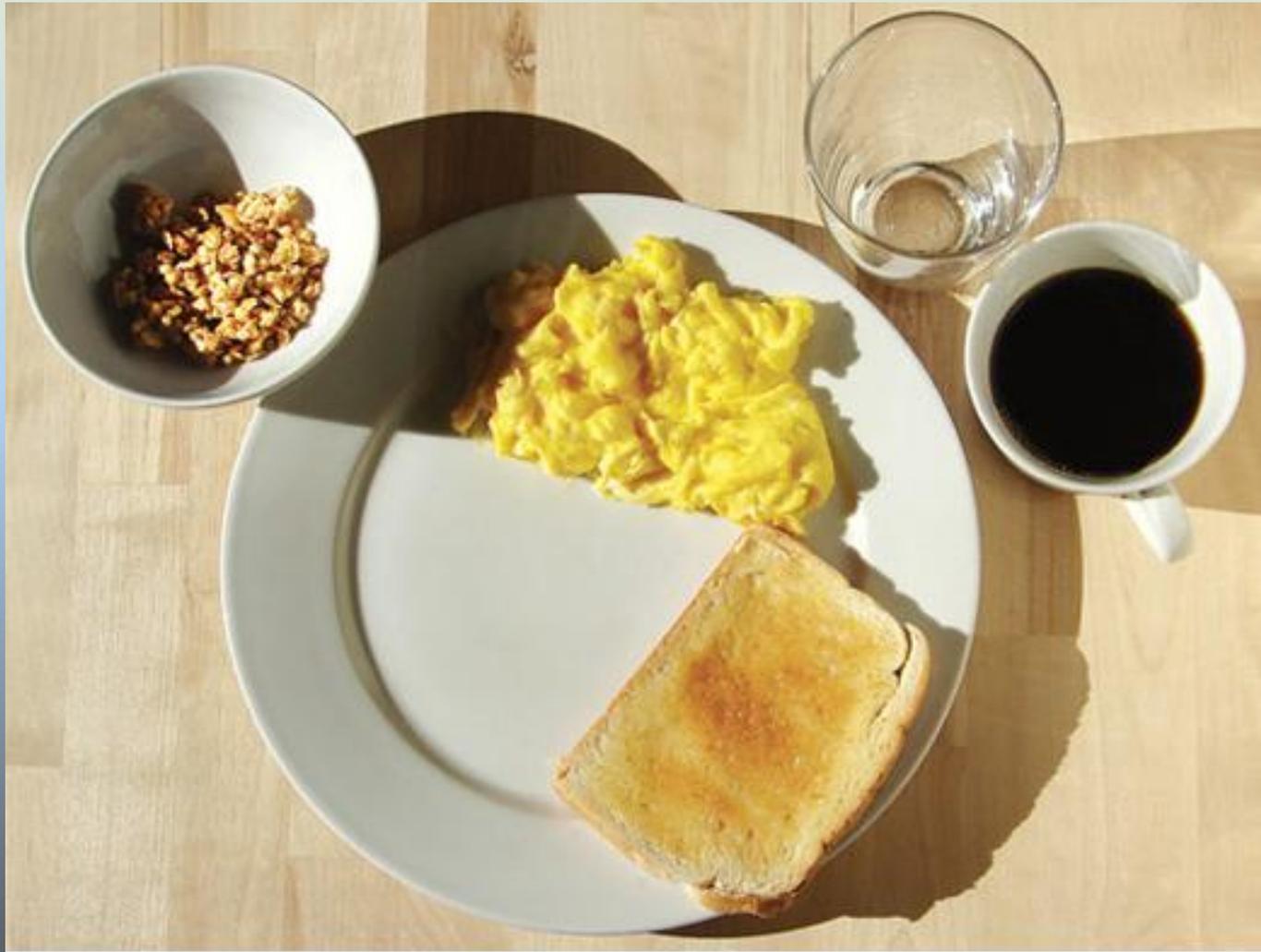
- Honey
- Beeswax
- Bee pollen
- Royal jelly
- Propolis



Breakfast with honey bees



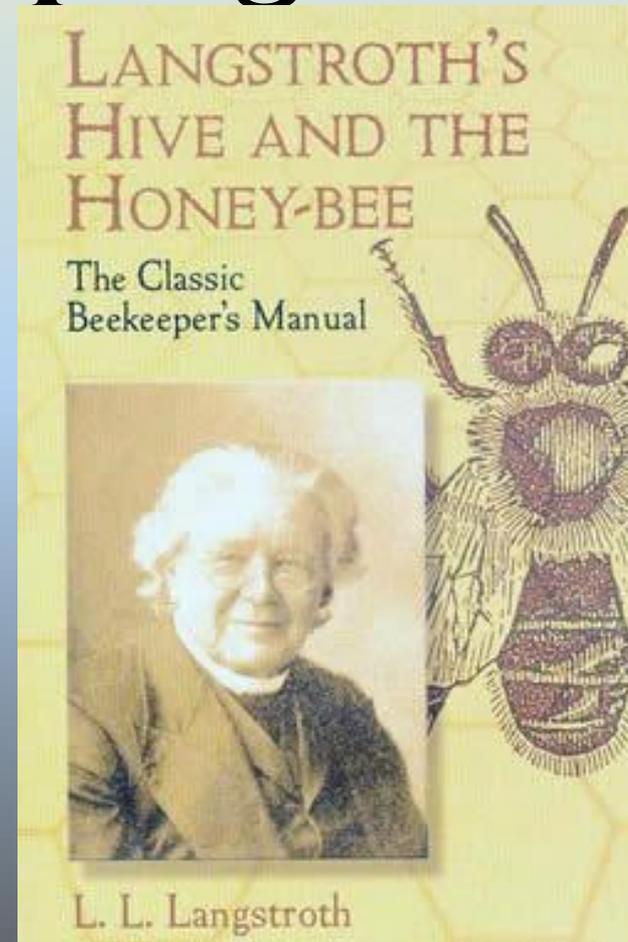
Breakfast without honey bees



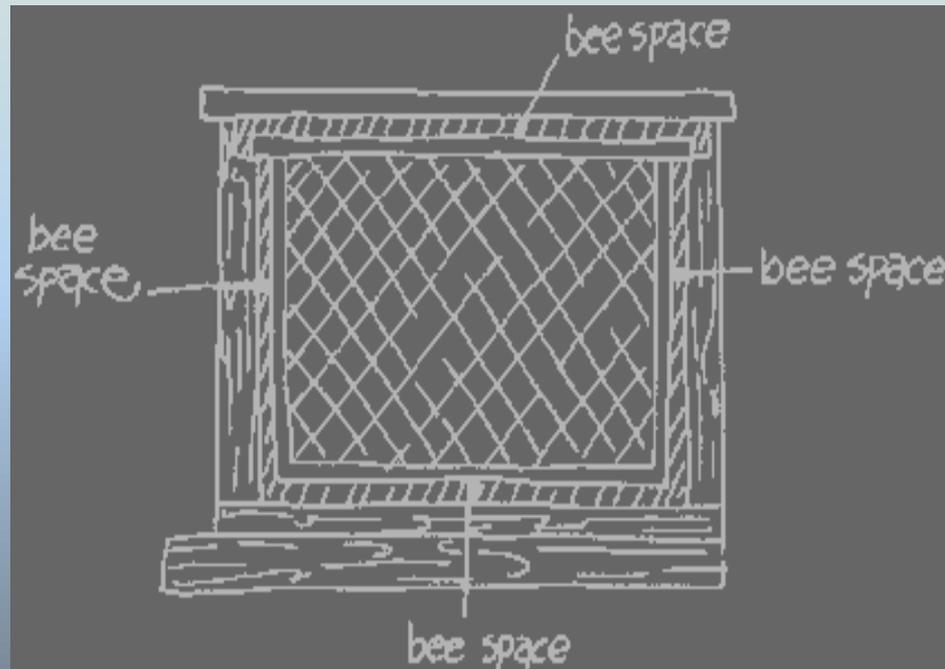
[http://1.bp.blogspot.com/_CzsuutNpjmA/TEXiGK2BBjI/AAAAAA
AAAGE/WmQj5Sn6_eE/s1600/without.png](http://1.bp.blogspot.com/_CzsuutNpjmA/TEXiGK2BBjI/AAAAAA
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Father of American beekeeping

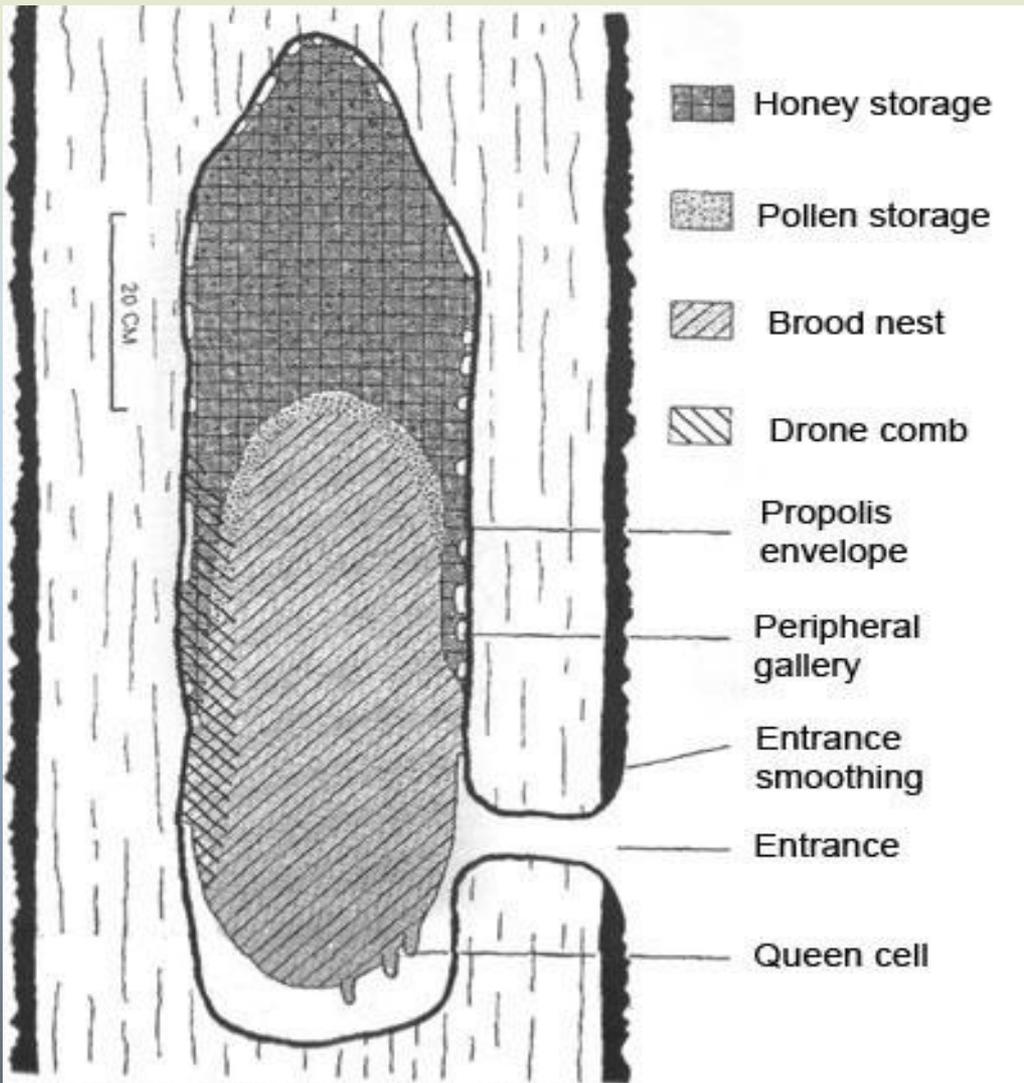
Lorenzo Lorraine
Langstroth
1810-1895



Bee Space



Natural nest



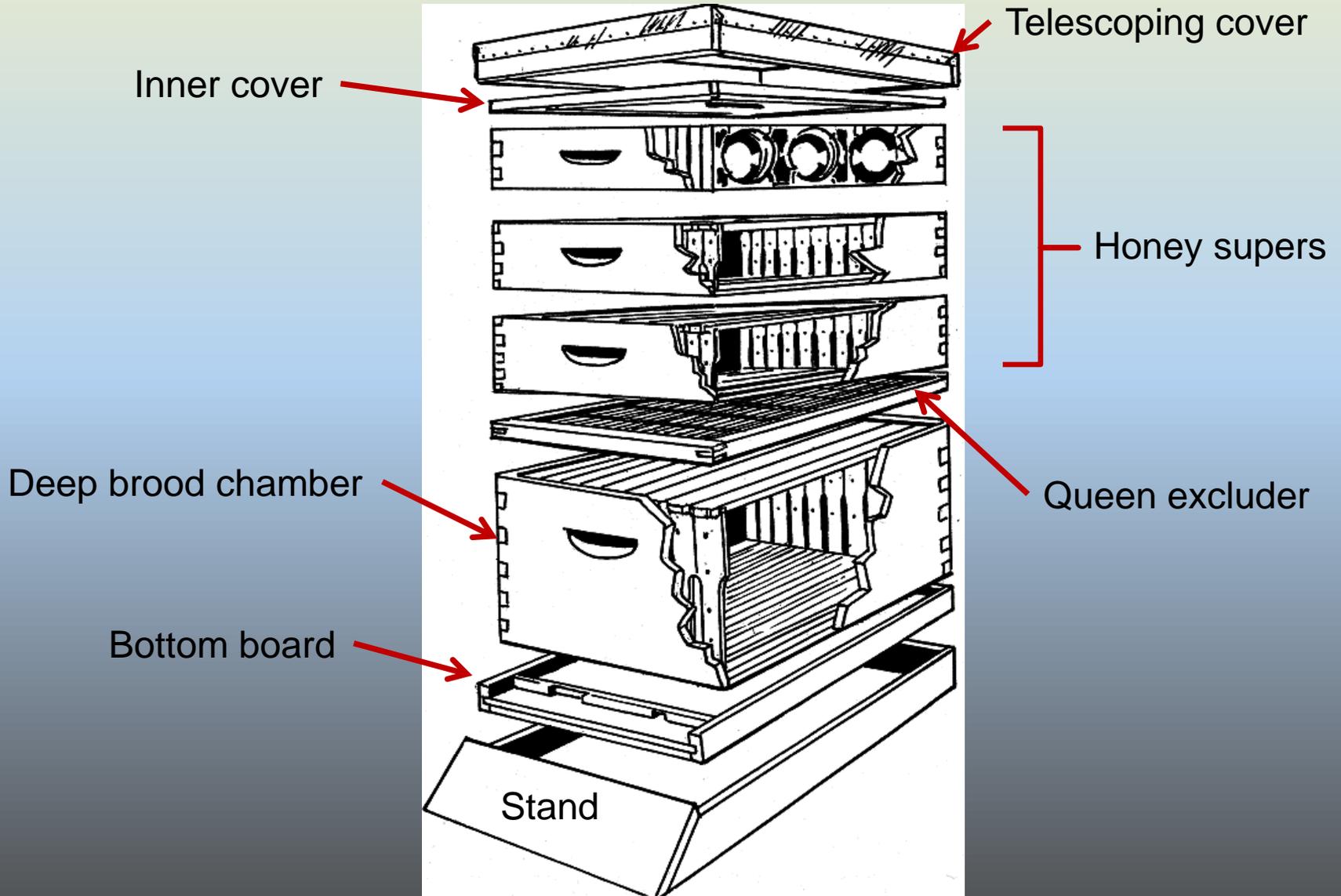
<http://www.vegetus.org/honey/hive.jpg>



http://farm4.static.flickr.com/3111/2793669074_d5a0d01eab.jpg

Seeley, T. D. & Morse, R. A. (1976)
The Nest of the Honey Bee (*Apis mellifera* L.)
Insectes Sociaux 23(4) 495-512

Langstroth Bee Hive: Movable frame bee hive-concept of bee space





Modern Hives



Modern Hives

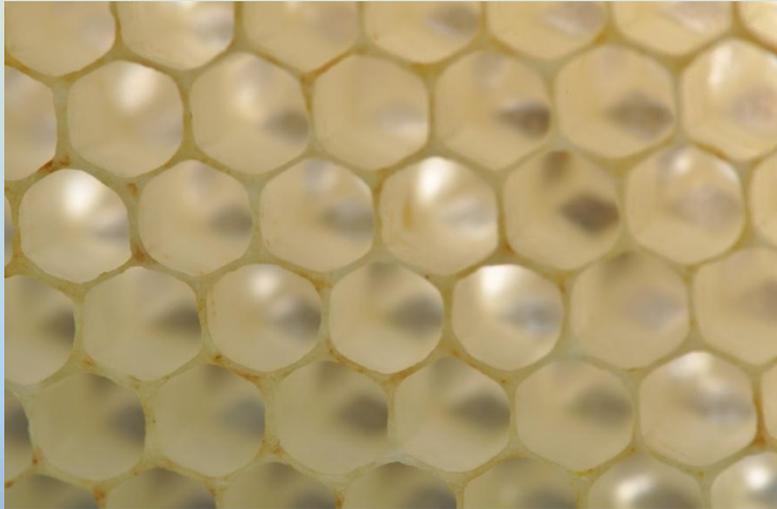


Photo by D. Delaney

Each section of the beehive contains honeycombs or frames of beeswax



<http://0.tqn.com/d/localfoods/1/0/y/8/-/-/beehive3.jpg>



Stores food:
pollen and honey

Brood chamber



Stores eggs and
developing larva



Photo by D. Delaney



Honey super

- The honey super is a wooden box that holds ten frames for storing honey that the beekeeper will harvest



Tools of the trade



veil



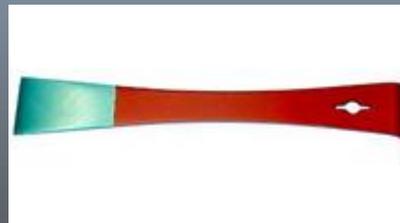
suit



gloves



smoker



Hive tool



boots

Management



Colony Requirements

- Nectar
- Pollen
- Water
- propolis



Picking an apiary site



Easy to get into, early morning sun, good forage, wind breaks

Shade and water during heat spells



- Locate colonies in morning sun and afternoon shade
- In hot weather colonies need up to a gallon of water a day
- Use a container of water with a landing area

Starting a colony



- Nucleus colony
- Hiving a swarm
 - Package

Nucleus colony



http://www.mikesbeesandhoney.com/files/2154634/uploaded/100_0707.JPG
G



[http://libertyfarmsonline.com/images/Beekeeping%20\(83\).JPG](http://libertyfarmsonline.com/images/Beekeeping%20(83).JPG)

Hiving a swarm



Bait Hives



<http://inlinethumb07.webshots.com/16454/2180675800103391520S600x600Q85.jpg>



http://2.bp.blogspot.com/_4ThkMMPEsS8/S-vcIPCQDkl/AAAAAAAAATM/kafDg20WVh8/s1600/P1010055.JPG

Package installation



<http://honeyrunapiaries.com/blog/wp-content/gallery/posts/packages1.jpg>



<http://homesteadrules.com/wp-content/uploads/2011/05/install-3-e1306245065105.jpg>



Hiving a Package of Honey Bees

University of Minnesota Instructional Poster #157, Gary S. Reuter and Marla Spivak, Department of Entomology
This method has been proven effective in Minnesota.



1. Gather equipment. You will need a 2 pound package of bees (mid April), hive stand, bottom board, entrance reducer, deep hive body with frames, inner cover, telescoping cover, gravity feeder, box to cover feeder, sprayer, light (1:1) sugar syrup and Fumagilin-B.



2. Chose good apriary site. A good site will have a wind break on the north side, good air drainage, water near by (within 1/2 mile), good vehicle accessibility and nectar and pollen plants nearby.



3. Order your package to arrive mid-April. Assemble the equipment, and place in its location in the apriary.



4. Place entrance reducer to its smallest opening (plug loosely with grass), and put a cork in the hole. Remove 4 frames from the center of the box.



5. Spray bees with syrup through the screen. Be sure they are all coated with syrup.



6. Remove the shipping lid from the top of syrup can and queen cage. Bonk package (lift up about 14 inches and slam down on the hive body) to dislodge the bees to the bottom of the package.



7. Remove syrup can. If bees are still flying, spray them with more sugar syrup. Set the syrup can to the side.



8. Remove queen cage and put queen in a warm safe place. Your pocket is a good place.



9. Shake bees into hive. You will have to tip it from side to side as you shake to get them all to come out.



10. Carefully spread bees out on the bottom board with your hive tool.



11. Spray queen lightly with syrup through the screen. If it is cold keep the sprayer in a warm place.



12. Carefully open the screen on the queen cage and let the queen crawl out onto a frame. Be careful the screen does not spring back and kill her.



13. Carefully replace the frames.



14. Put a pollen substitute patty on top of the frames. Do not put it in the middle where it will block the hole to the feeder. Put on the inner cover.



15. Fill feeder with medicated (Fumagilin-B) sugar syrup and install the cover. Check in 24 hours only to be sure bees are under the feeder and it is not leaking. Wait at least 5 days to remove frames and see if the queen is laying eggs.

Enjoy and Observe



<http://beeinformed.org/wp-content/uploads/2011/10/Mike-watching-propolis-foragers.jpg>

Necessary management during the first year

- Swarm management
- Supering
- Queen checks
- Reading and researching
- Pest monitoring
- Removing honey if you are lucky!
- Wintering
- Good clean storage



Swarm management



- Inspect colony weekly
- Queen cells will be on the bottom bars of frames from the top brood chamber and damaged areas of comb





Swarm management



- If swarm cells are found on the bottom bars inspect each frame for queen cells and/or cups



Photo by D. Delaney



Copyright Daria Merrill 2006

To prevent swarming give room or
else!



Supering

To prevent swarming give room!

- Add supers of drawn comb and foundation
- Swap out a few brood frames for foundation
- **GIVE ROOM!!!**
- Divide colony





Supering

- Supers will be used during the nectar flow to store surplus nectar
- Prepare supers with clean comb and /or foundation
- Queen excluder
- Add supers to the top of queen excluder
- When the super is $\frac{3}{4}$ full remove it and add one super to the top of queen excluder and then place mostly full super on top.
- Keep one super ahead of bees during nectar flow





Dividing colonies

- Must have queen source for each of the divisions
- Prepare hive equipment, sugar solutions
- Locate queen from colony that you are splitting
- Transfer her and bees on frame to one of the prepared splits
- Check rest of brood frames for queen cells
- Transfer a few more frames to split with old queen
- Shake enough bees from brood frames of old hive to cover brood frames in the split
- Add any additional frames and equipment to new split
- Check colony in a couple of days to make sure queen is there

Queen checks



Queen checks

Solid brood pattern

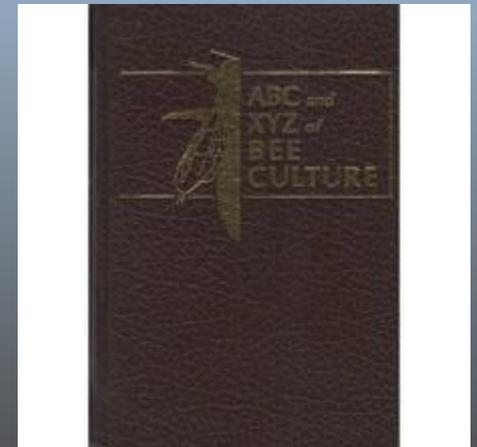
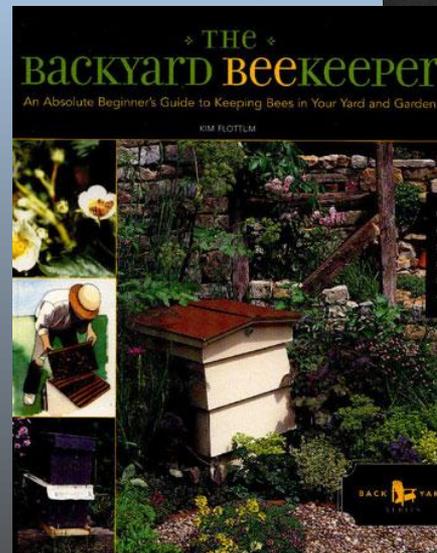
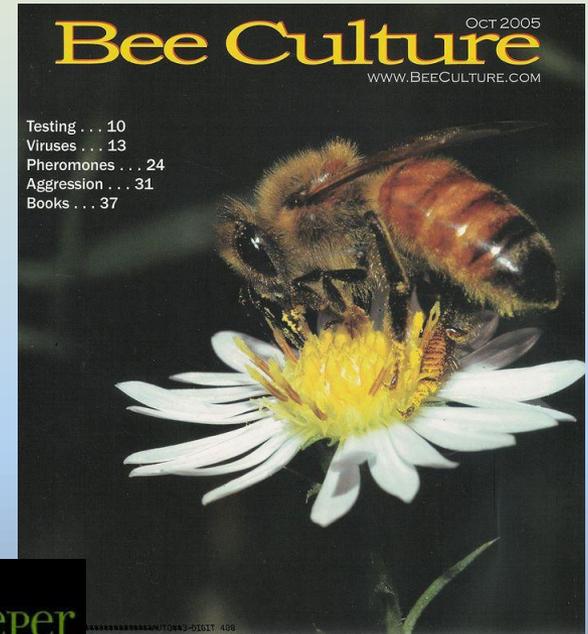


Eggs!

<http://www.ent.uga.edu/bees/disorders/images/goodbroodpattern.jpg>

Reading and researching

- Numerous websites
- Blogs
- Bee industry publications
- Scientific journals
- Text books
- Popular books



Why are you keeping bees?

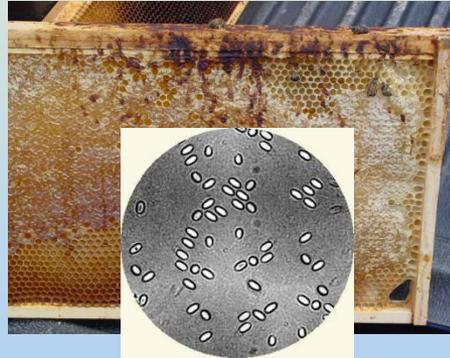


By answering this question you will determine how you want to manage your apiary.

Pest monitoring



Varroa mites



Nosema spp.



Small hive beetle



American Foul Brood



Wax moths



Removing honey



- The bees will cap the honey when they have cured it to 20% or less water



Removing honey

- To remove bees from super:
 - Remove lid and shake or brush bees from frames and place in empty super
 - Place outer board in sunlight @moisten felt liner with bee repellent and place on colony



Supers of honey must be processed or extracted right away or stored in a cold room



Honey extracting





Feeding

Needs: 50-80 pounds of honey per colony from the time brood rearing ends in the fall until spring nectar flow





Overwintering



Entrance reducer



Mouse guard



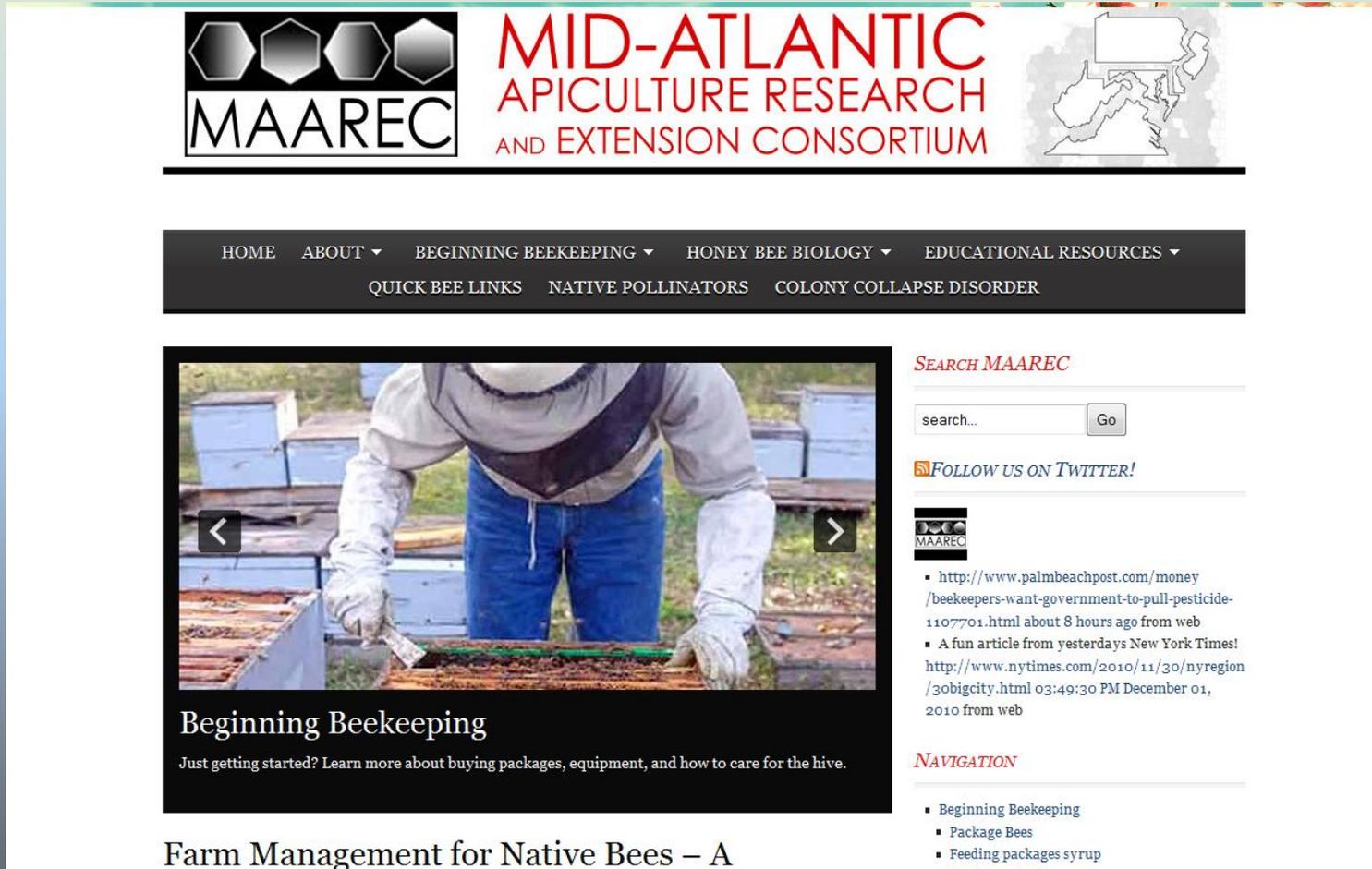
Wintering

- Colony should have enough bees to cover five brood frames
- Leave colony with at least 50 pounds of honey for winter stores
- Check brood chamber for a healthy queen
- Monitor /Treat
- Reduce entrance and put on mouse guards
- Ventilation slots to remove excess moisture

Equipment storage



Mid-Atlantic Apicultural Research Extension Consortium (MAAREC)



The screenshot shows the MAAREC website homepage. At the top is the MAAREC logo, which consists of four hexagons above the text 'MAAREC'. To the right of the logo is the text 'MID-ATLANTIC APICULTURE RESEARCH AND EXTENSION CONSORTIUM' in red, and a map of the Mid-Atlantic region. Below the logo and text is a dark navigation bar with white text: 'HOME', 'ABOUT', 'BEGINNING BEEKEEPING', 'HONEY BEE BIOLOGY', 'EDUCATIONAL RESOURCES', 'QUICK BEE LINKS', 'NATIVE POLLINATORS', and 'COLONY COLLAPSE DISORDER'. The main content area features a large image of a beekeeper in a white protective suit and blue pants, working with a wooden hive. Below the image is the text 'Beginning Beekeeping' and a sub-headline 'Just getting started? Learn more about buying packages, equipment, and how to care for the hive.' To the right of the image is a search bar with the text 'SEARCH MAAREC' and a 'Go' button. Below the search bar is a 'FOLLOW US ON TWITTER!' button. Further down is a list of social media links, including a link to a palmbeachpost.com article and a link to a New York Times article. At the bottom right is a 'NAVIGATION' section with a list of links: 'Beginning Beekeeping', 'Package Bees', and 'Feeding packages syrup'.

MAAREC

MID-ATLANTIC APICULTURE RESEARCH AND EXTENSION CONSORTIUM

HOME ABOUT ▾ BEGINNING BEEKEEPING ▾ HONEY BEE BIOLOGY ▾ EDUCATIONAL RESOURCES ▾
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SEARCH MAAREC

search... Go

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NAVIGATION

- Beginning Beekeeping
- Package Bees
- Feeding packages syrup

Farm Management for Native Bees – A

ag.udel.edu/maarec/

Questions ???



The End