



Queen Rearing

at
Gretel Clark's
Hamilton, MA
July 18 & 19, 2008

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v 1.0



- Evaluate Donor Hives
- Create Starter Nucs
- Graft Larva into Queen Cells
- Complete Starter Nucs
- Transfer Queen Cells to Finisher
- Put Queen Cells into 5 Frame Nucs

Evaluate Donor Hives



- What are Some of the “Traits” We Want to Take Into Account When Selecting a “Donor Hive”?
 - Hygienic Characteristics
 - Honey Crop Yield
 - Propolizing Characteristics
 - Ability to Forage in Varying Climatic Conditions
 - Swarming Traits
 - Queen’s Egg Laying Ability
 - Etc
 - Etc
 - Etc

Evaluate Hives - Egg Laying



- Determine the Average Number of Cells per square inch
- Measure the Area of Sealed Worker Brood
- Multiply the Sealed Brood Cell Area by the Average Cells/square inch = Total amount of Sealed Brood in the Colony or Hive
- Total Divided by 12 is the Daily Average Number of Eggs Laid by the Queen over the last 12 days

Evaluate Hives - Egg Laying



 **Essex County Beekeepers' Assn.**

Topsfield, MA. USA

Determining the Queen's Egg Laying Rate

1) Count the number of worker cells (include pollen, honey, brood, larva) in ten linear inches.

| | | |
|--------------------|------|-------------------------------|
| Frame 1 | 47 | cells/10 inches |
| Frame 2 | 49 | cells/10 inches |
| Frame 3 | 48 | cells/10 inches |
| Total | 144 | cells/10 inches |
| divide by | 3 | |
| Average | 48 | cells/10 inches |
| Square the average | 2304 | cells/100 inches ² |
| Divide by 100 | 23 | cells/inch ² |

2) Measure the square inches of sealed brood cells on each frame

| Top super | | | | | | Bottom super | | | | | |
|--|--------|--------|---------------|------------|--|----------------------------|--------|--------|---------------|------------|--|
| Frame # | A Side | B Side | Square inches | # of Cells | Multiply by cells/inch ² | Frame # | A Side | B Side | Square inches | # of Cells | Multiply by cells/inch ² |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 20 | 30 | 691.2 | |
| 4 | 10 | 20 | 30 | 691.2 | | 4 | 30 | 30 | 60 | 1382.4 | |
| 5 | 30 | 40 | 70 | 1612.8 | | 5 | 30 | 30 | 60 | 1382.4 | |
| 6 | 40 | 30 | 70 | 1612.8 | | 6 | 30 | 30 | 60 | 1382.4 | |
| 7 | 20 | 10 | 30 | 691.2 | | 7 | 30 | 30 | 60 | 1382.4 | |
| 8 | 0 | 0 | 0 | 0 | 0 | 8 | 20 | 10 | 30 | 691.2 | |
| 9 | 0 | 0 | 0 | 0 | 0 | 9 | 10 | 0 | 10 | 230.4 | |
| 10 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| | | | 200 | | | | | | 310 | | |
| Total # of Cells in Top | | | | | 4608 | Total # of Cells in Bottom | | | | | 7142.4 |
| Total # of Cells in Bottom | | | | | 7142.4 | | | | | | |
| Total number of Sealed Brood Cells in the Colony | | | | | 11750.4 | | | | | | |

3) Total Brood cells divided by 12 is the Avg # of eggs laid by the queen in the last 12 days

979.2

Evaluate Hives - Egg Laying



- Look for frames with
 - Pollen and no brood
 - Honey and no brood
 - Frame containing 1 day old larva from “selected donor hive”

Create Starter Nucs

- 1 Frame Honey
- 1 Frame Pollen
- Wet Sponge
- Add a lot of Nurse Bees
- Set this Aside While you Graft



Create Starter Nucs



- 1 Frame Honey
- 1 Frame Pollen
- Wet Sponge



Create Starter Nucs

- Add a lot of Nurse Bees!
- The Nurse Bees are Found on Open Brood.



Create Starter Nuc



- Set the Starter Nuc Aside while you Graft



Grafting



- Prime Queen Cups with Royal Jelly
- Obtain Larva from “Select Donor Hive”
- Remove Larva from Cell
- Place Larva in Queen Cup
- Rack the Queen Cup Strip into a Frame

Royal Jelly

- Mix Royal Jelly with Water **50:50**
- Unflavored Yogurt May be Used in Lieu of Royal Jelly
- Put a Drop of the Royal Jelly Mix in the Queen Cup



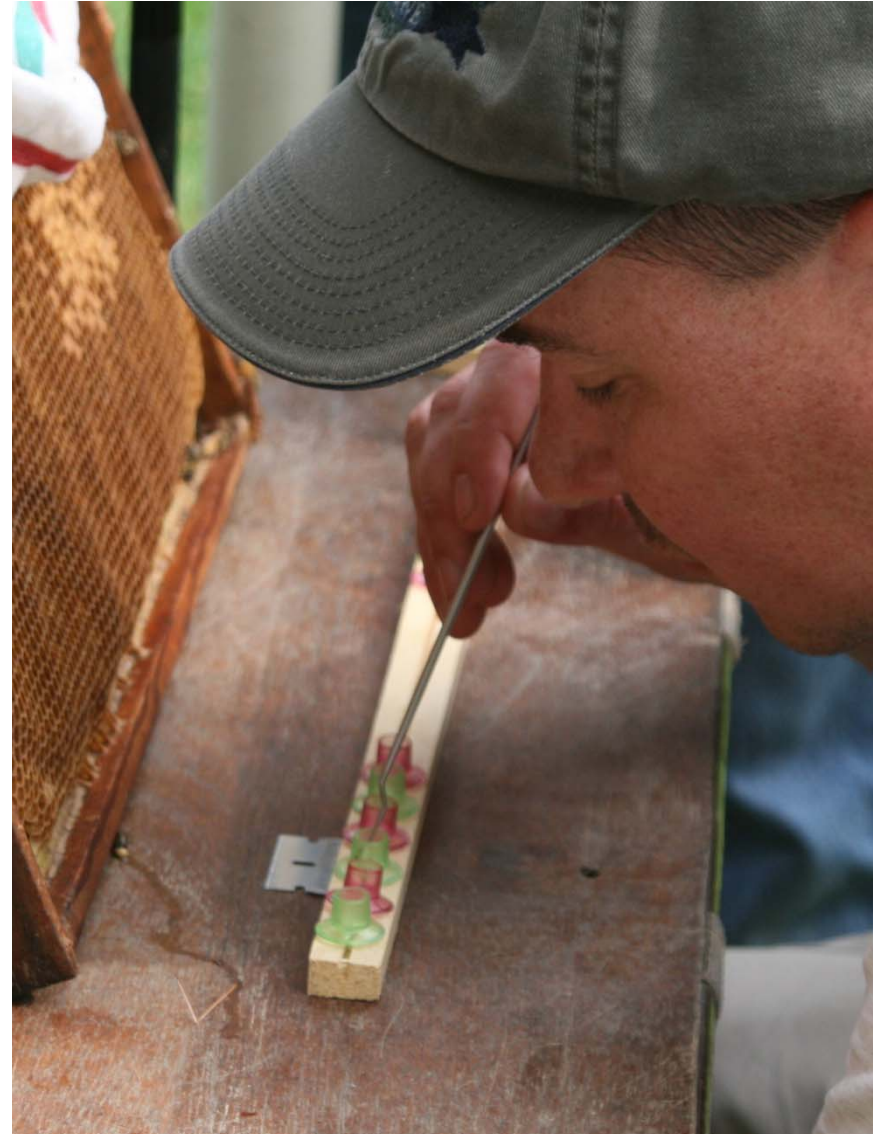
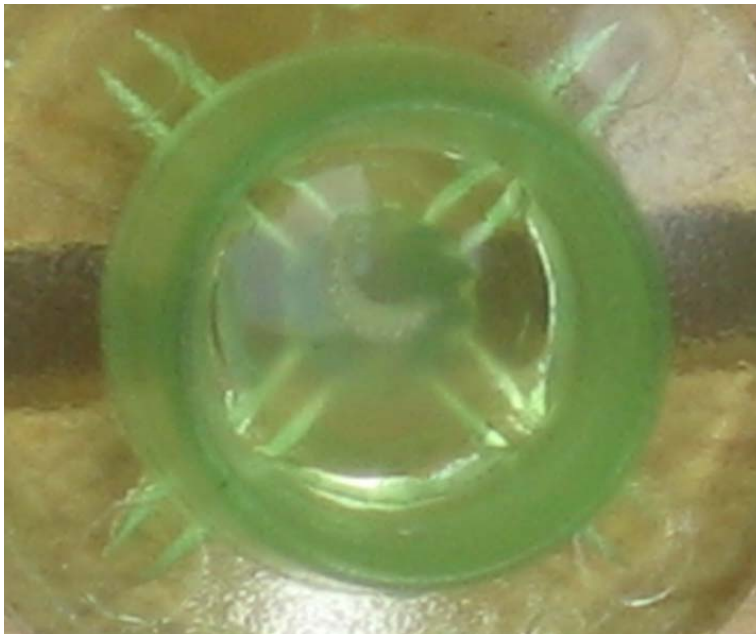
Obtain Larva from Select Hive

- Remove the Smallest Larva You Can See
- Do Not Roll the Larva Over. It Will Drown if Rolled Over
- Do Not Crush the Larva
- Lubricate the Grafting Tool – It Helps!



Place larva in queen cup

- Do Not Roll the Larva Over.
- Use the Royal Jelly to Wash the Larva Off the Grafting Tool.



Rack the Queen Cup Strip into a Frame



Complete Starter Nucs

- Carefully Rotate Queen Cell Frame
- Place in Starter Nuc
- Cover and Leave it Alone for 2 to 3 days



Carefully Rotate Queen Cell Frame

- The Royal Jelly will Hold the Larva in Place



Place in Starter Nuc



Cover & Leave it Alone for 2 to 3 days

- The Nurse Bees will Recognize that They are Queenless and try to Raise a New Queen



Transfer Queen Cells to Finisher

- Setup Finisher
- Add Frames of Pollen and Uncapped Brood
- Remove Queen Cell Frame
- Remove any Cups that were Rejected
- Add Queen Cell Frame



Setup Finisher Colony

- Put a Queen Excluder Above Brood Chamber
- Put a Empty Super on Top
- Add Two Frames of Uncapped Brood
- Add a Frame of Pollen
- Add Frame of Honey on the Outside



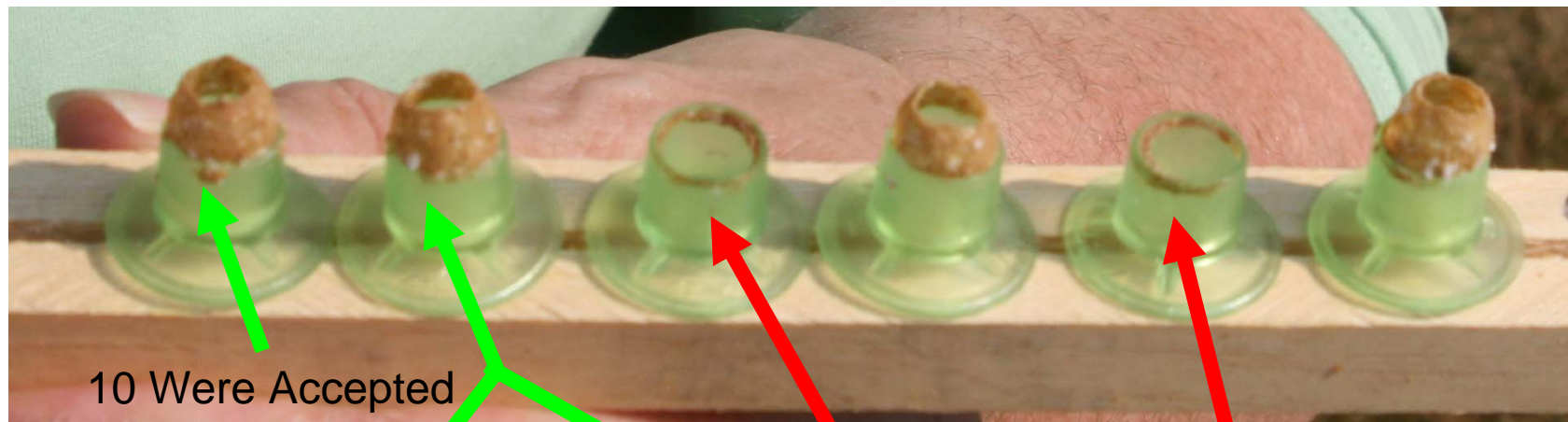
Queen Cell Frame

- Remove Queen Cell Frame from Starter



Evaluate Queen Cups

- Remove Rejected Queen Cups



Add queen cell frame

- Put Queen Cell Frame In-Between the Open Brood Frames



What to do with a Queen Cell

- 10 days After Grafting Remove the Queen Cells, and put them into Nucs, or Re-queen a Hive
- Place the Queen Cell In-Between Frames of Open Brood (if present)
- The Queen will Emerge and Go on a Mating Flight.
- Do Not Disturb or Inspect the Colony for 2 weeks.



What to do with a Queen Cell

- Create & Set Up a 5 Frame Nuc



What to do with a Queen Cell

- This Deep Super was Divided into 4 – 4 Frame Nucleus Colonies
- Feeders in the Center
- Wintered Over a Seasoned Colony





Essex County Beekeepers' Assn.

Topsfield, MA. USA