Marion Berry Bees

Part 2 Honey Bee Queen Rearing

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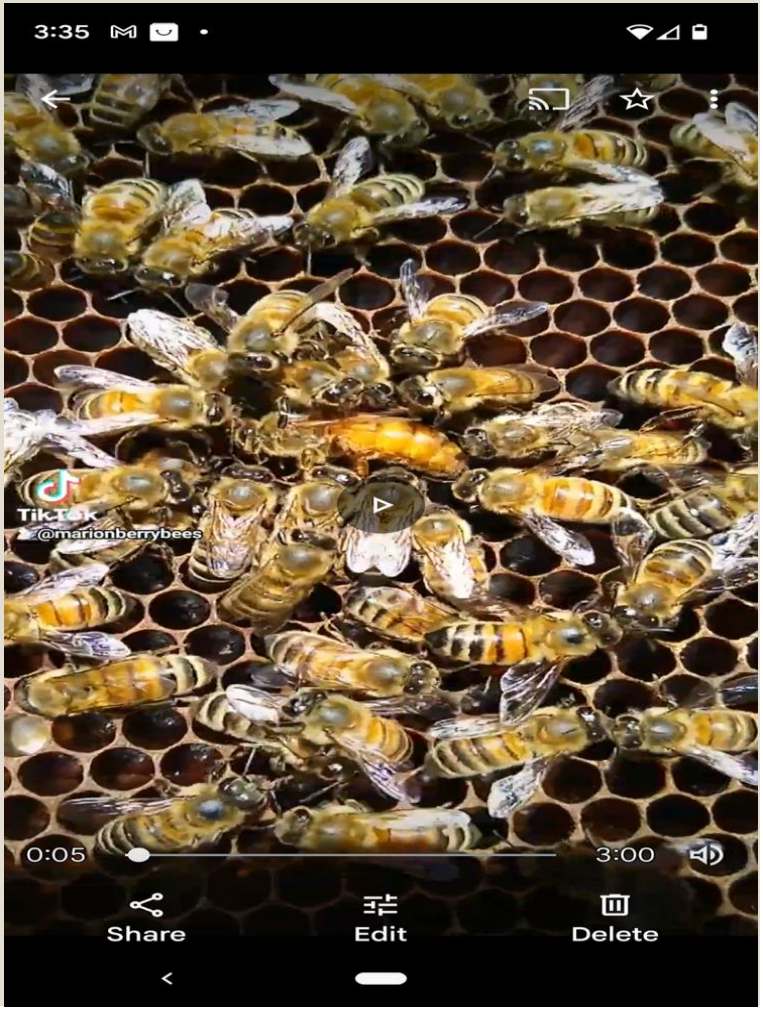
Marion Berry Bees

Queen Rearing Pros

- You have a queen readily available when needed
- Save time time and money on travel expenses
- Choosing the desired genetic attributes for your needs
- Cutting time lost by shipping or area availability of mated queens
- Helping other beekeepers in need

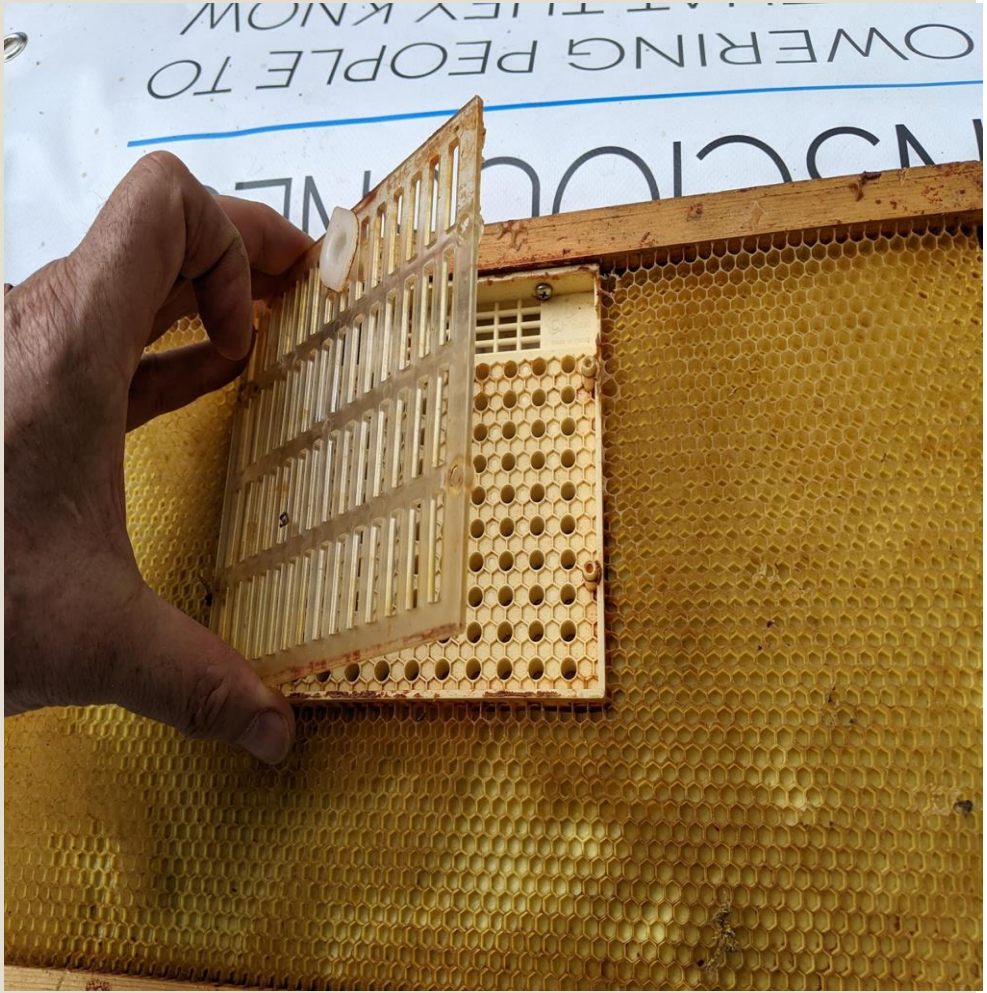
Queen Rearing Cons

- Time consuming when you want a large number
- Lots of resources consumed when done at scale
- 200-400 nurse bees per queen cell, up to 1200 feeds in 24 Hours span
- When done alone it's a full family commitment, no time for the beach
- Discipline and planning is key to the process-explain



Choose Your Method

- Grafting larvae
- JZBZ
- Cell punch
- Splits
- Overcrowding
- Thumb pressing



Considerations when producing queens

- Selecting breeder queen genetic make up for
  - location, weather attributes
  - gentleness
  - rapid spring build up
  - nest characteristics-explain the difference between most common Carniolan and Italian, Buckfast, Cordovan, Saskatraz, Russian, Caucasian
  - swarming tendencies
  - resistance to pests and diseases-why this is critical-explain

Necessary hardware

- 10 frame Langstroth base
- 10 frame deep Langstroth body box
- bubble insulation with hole for additional feeding
- cover with 2 inch hole
- 1.5 gallon inside feeder
- 1 frame with foundation
- 1 frame with Queen cups
- 1 frame with bee bread
- 1 frame with open brood
- 1 frame with honey
- 2 frames of build comb
- 1 plywood ramp 14X24 Inch and a piece of fabric over it, I use carpet

Configuration from L to R

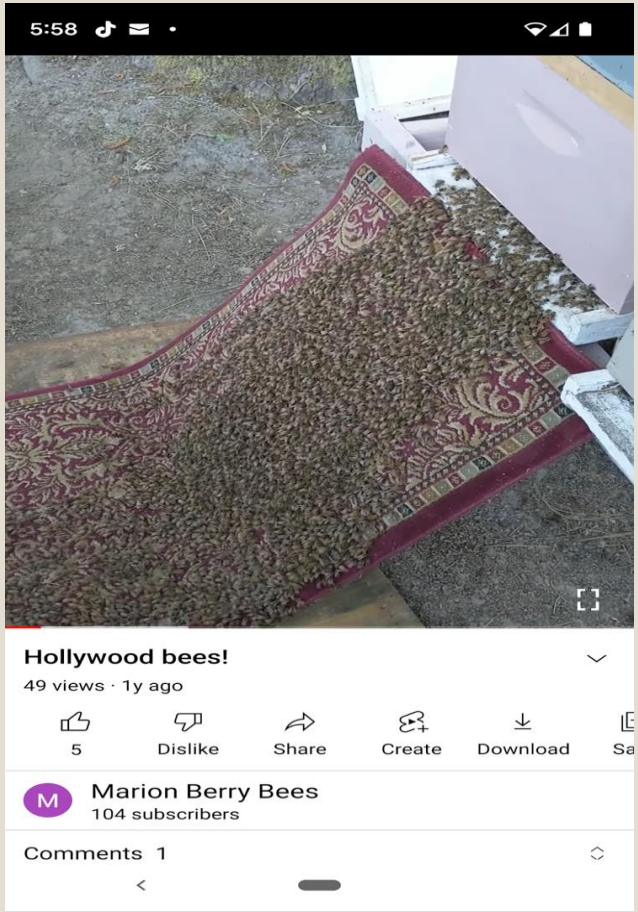
- FE-feeder
- P-Pollen/Bee bread
- B-Open brood
- H-Honey
- C-comb
- C-comb
- FO-foundation

Details

- Total neccesary space is for 9 frames
- Mark each frame with a paint marker till you are familiar with the system
- Install queen excluder at the entrance
- Check the breeder queen colony to be sure you have young larvae, no older than 24 hours-explain how to find
- Breeder queen colony nutrition needs to be exemplary-explain why
- Put a 36 inch by 36 inch plastic foil on the ground
- Put the ramp board with fabric over and screw it to the hive bottom board-Explain how and why
- Have a printed queen rearing calendar ready or an app installed on your phone-explain benefits

Day before Grafting

- Select beehives to take bees from, better from the same beeyard, isolate the queens-Explain
- Install equipment as described
- Swap a comb frame with the grafting frame which will be marked with a number
- (1 to 9) in my case for keeping track and records of the batches-explain
- Fill the feeder with 1 to 1.25 sugar water ratio
- Shake as many frames of bees as possible, generally about 8 frames
- Shake another 2-4 frames of bees on the ramp board
- Attention, if not sure about queens whereabouts shaking bees through a queen excluder is a neccesary step-Explain how and why
- Make the mating nucs



Grafting Day

- Neccesary tools and materials
  - Grafting tools, Mann Lake, German, different Chinese, I use bamboo
  - Frame stand with adjustable angle
  - LED Headlight
  - Gloves
  - Eye glasses, I use +3
  - A pan with hot water
  - 2 towels large enough to wrap up a frame completely-Explain why
  - small (2frame) beehive for transportation to the grafting site and back-Explain
  - smoker, hive tool, bee costume/veil, bee brush

Grafting Day

Other considerations

- Grafting room temperature and specially humidity
- Breeder colonies strength and nutrition-explain why and how
- Weather, outside temperature, wind conditions-explain the importance and how to minimize these factors specially on wet, cold, windy conditions as we face this spring in my area and more extreme in other parts of the country
- Prepare the wet towels
- Have a quiet place to graft
- Don't rush but minimize the time of grafting as much as possible by preparation so when you start you have everything at your need available at hands reach
- Get yourself in a good physical condition and right mindset to be able to focus and coordinate the mind,eyes and hands, breath, you can do this, nobody was born an expert, practice makes perfect!

Grafting steps

- Put the suit on and remove the open brood/dummy frame, brush the bees off and remove the queen cups the bees already started
- Take the queen cups frame and brush off bees, take the frame to the grafting room put it on a wet towel and get it ready for grafting
- Open the breeder hive and take a frame with young larvae, by doing so pay attention for superseded queen cups specially when you have A.I. queens
- Brush the bees off handling gently so you don't dislocate the larvae
- Put the frame in a 2 frame hive for transportation even for short distances if the weather is not cooperating, take it to the grafting room-How I do this-explain why
- Put the frame on the second wet towel on the frame stand

Grafting steps

- Put the head light and the gloves on
- Adjust the stand and the light for the best, optimal position for eyes and hands
- Dip the tip of the grafting tool in the hot water pot to make it flexible, do this throughout the grafting session
- Select a larvae with a lot of royal jelly and take as much as possible to prime the first cup, mark that cell with your grafting tool to be sure you are not going to graft that larvae later
- Select the desired larvae and pui it in the cell, select the youngest larvae possible for you to comfortably graft
- Cover the grafted cell with the wet towel
- Repeat the process till you have all the cell cups grafted
- Cover the brood frame with the other half of the wet towel
- Cups upright covered frame with wet towel transport the grafted frame to the starter/finisher hive

Graft frame installation

- Unwrap grafted frame, turn the cell bar 45 degrees to face down
- Install grafted frame observing the schedule explained early between the Pollen/bee bread frame and honey frame
- Put the comb frame that was removed the day before next to the other comb frame
- Fill the feeder again if there is no nectar flow
- I install a 3 hole gatorade bottle feeder in the cover and fill it up when empty-Explain why, be sure the bubble wrap insulation window is open
- Take the brood frame we grafted from and install it -where and why
- Mark the Details as breeder queen, frame #, number of cells grafted, date of the graft, name of the grafting person, tools for grafting used, keep this paper handy

Other details worthy of consideration

- Different cell colors may be used to quickly identify the breeder queen or the grafting person but be consistent
- On the 4th day after the grafting the Q cells are capped and after this day minimal disturbance is advised-explain why
- On this day I put another grafted frame in next to the existing one
- After 8 days make mating nucs or 9 days if you install on the same day, inthis situation install Q Cup protective sleeve-explain why
- After 11-12 days queens hatches so 15-16 days from the time queen was laying eggs
- After Q C installation I wait at least 4 days to check if queen hatched, if not explain
- Three week roughly from the egg form the queen is ready for the mating flights
- Wait for another 10-14 days and check for eggs, additional 4 days for larvae
- If queen or brood or Q cell not present in 3roughly 3 weeks worker bees develop ovaries-explain what to do OB