Queen rearing

Ari Seppälä SML 2014
Queen rearing is the second level of beekeeping

• Honey can be produced without queen rearing
• But those who rear queens get more honey
• Queen producers know more from bees, changes less than average queens without waiting
Queen breeding is demanding work – but gives results

- Varroa tolerance – Lunden, Kefuss, Lusby, Bond bees Sweden
- VHS – bees
- Hygienic bees against AFB
- Hybrid lines USA midnight starlight
- Locally adapted bees with many beekeepers in many countries
You can choose from many different methods to rear queens

• How many queens you need?
• Mated or unmated?
• Investment requirements
Grafting is the base tool for queen production

• Most efficient way, by grafting needle or by cell base change method (nicot, others)
• Dry grafting = only larvae moved
• Wet grafting = royal jelly placed under larvae
Grafting is easy

• 95% of beekeepers are physically able to do grafting
• Basics is learned in an hour
• Practice makes a master
• Right lights and magnifying glass (if needed) important
• Larvae are surprisingly tough and can take a lot of handling
Start and cell building

• Two very different parts of making queen cells

• Start = acceptance and feeding of the larvae for first 24 hours

• All are never accepted

• Cell building is feeding the larva after start until cell is accepted
Starting is the most difficult part

• Failures and bad resuls mostly from conditiond in start
• Queenless or queenright start?
• The feeder bees in start have the key role
  • Enough feeder bees
  • Right age
  • History of nectar and pollen flow is past 3 – 4 days
Cell building requires bees and food

- Started cells are well built into capping
- Queen is not allowed in contact with cells
- 15 cells / hive is good maximum
- More / hive -> easily smaller queens
- Queen larvae must be fed so well that they have extra food left after they stop eating and start metamorphosis
Easiest and most used method is Cloake method

- Described by Henry Cloake from New Zealand
- Hive is divided for a day in two parts; one with queen other without
- Grafted larvae given to queenless part
- After 24 hours of starting hive parts are united, excluder put to keep queen away from cells

- Many different variations, queen up or down
- Works for all beekeepers as just one hive needed
Excluder changed for bottom, bees directed to upper entrance
Good if young bees shaked to top box
Pollen frame + 2 open brood frames to top box
4 – 6 hour after bottom placed,
15-20 gaited cells in top box

Queen under excluder

24 hours after putting the cells, bottom is changed to excluder
Mating the young queens is the most expensive part of queen production

- Most efficient way is not to use mated queens, but change the queens with mature cells
- Simple – queen out – ripe queen cell in
- Most used system in big operations worldwide
Mating the young queens is the most expensive part of queen production

- Mated queen production
- Individual mating hives needed
- Extra bees needed, the minimum is about 1,5 dl bees / hive
- Best works 2,5 – 3 dl of bees
- Mating is 70 % of the costs of production