The Art of Queen Rearing

With Sue Cobey

Notes contributed by: Michelle Gasaway, Jerry Ronquille, Doug Stanley and Judy Woodcock...some photos submitted by Robin Young
Queen Basics

She can store 5 – 7 million sperm in her spermatheca, this determines her longevity.

Diet is a huge factor!
  Worker is fed 140 times a day for 5.5 days
  Queen is fed 1600 times a day for 4.5 days

More than ONE mating flight takes place...up to 5!

Queen must mate within 14 days or quality of mating may not be as good
Royal Jelly contains Royalactin
Induces Queen Differentiation

A specific protein in Royal Jelly
Increases: Size, JH level & Ovary Development
Shortens Development Time

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Chemical structure of Royalactin: [Chemical structure image]
Queen Rearing

**When**
- Raise Queens in Spring when food is abundant
- Graft when Drones emerge
- During Swarm Season
- With the reduction of QMP, workers make queen cells

**How**
- Mimic the Biology of Queens & Drones
- 18 – 24 hour larva or “1st In Star Larva”
- Need ample, well fed, Nurse bees between 5 & 12 days old

QMP = Queen Mandibular Pheromone
Select Breeder Queens

Breeder Box to supply young larvae for grafting
Various Larval Stages

EGG

First In Star
Graft Larvae Within The First 24 Hrs.
Must be less than 2 days old to develop into queens

Photo by: Robin L-S Young (TexasSoulHoney.com)
Grafting - Transfer of Larvae Into Queen Cups

Photo by: Robin L-S Young (TexasSoulHoney.com)
Grafting

Dry vs. Wet
Plastic vs. Wax
Conditions:
Warm & Humid

Photo by: Robin L-S Young (TexasSoulHoney.com)
The Queen Rearing Conditions Determine Quality
Setting Up A Cell Builder

Photo by: Robin L-S Young (TexasSoulHoney.com)
Cell Builders
Record keeping is key!

- Remember to keep good records of:
  - Day of grafting
  - Day of expected queen emergence
- You do not want queens emerging in the cell builder!
Let's not forget the Drones!

- 50 different morphological (structural) differences between Queens & Drones
- Varroa love Drone cells so keeping them in check is critical to hive survival
- Drone genetics are half of the equation.
- They will affect your breeding plan
Drone Production

Drone Longevity
Attrition Is High At Every Stage

Survival Decreases:
- with Flight
- Predation
- Seasonal Constraints
- Eviction by Workers
- Pests, Parasites & Pathogens
- Chemical Residues
- Stressors
Summary

- There are many steps involved in the process of Queen Rearing that require attention to detail.
- Diet, timing and environment are very important factors to be successful.
- Drones are a key component.
- Keep good records!
- Definitely an advanced process of beekeeping.