Grafting basics

AS YOU CAN CLEARLY SEE IN SLIDE 397...
scottadams@aol.com
www.dilbert.com
GAAAAH!
Z
Z
© 2000 United Feature Syndicate, Inc.
"POWERPOINT" POISONING.

Content

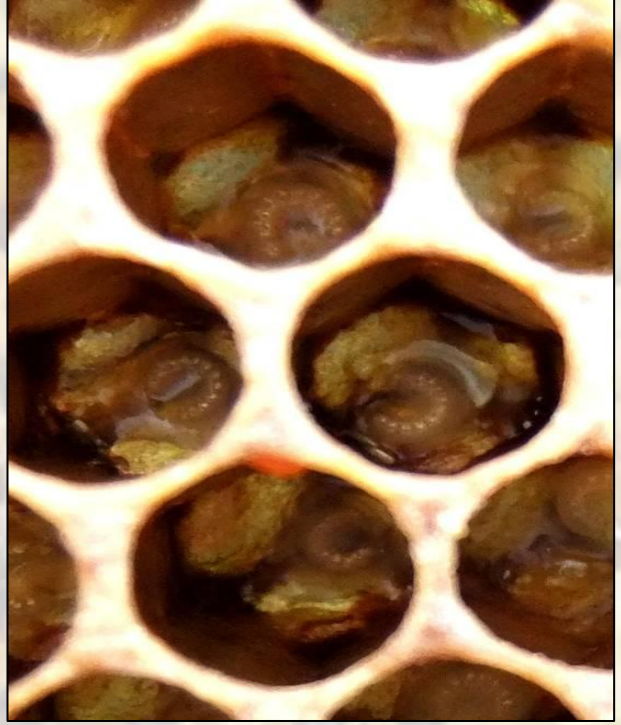
- Tools
- Record keeping
- Coordination of grafts with other group activities
- Where to sit when grafting
- How to get larvae on and off brush
- How long can grafts last before insertion in a cell raiser colony?
- How to transport grafts
- How to select correct age larvae
- Working with multiple grafted cells on different frames

Tools

- 000 sable paintbrush
- Chinese grafting tool
- Dentist type stainless steel grafting tool

Keep records

- Make sure you have an organised record keeping system
- A notebook is fine or you could use the notes section on a phone or a tablet
- Record the date you graft
- Record the colony/queen the grafts are taken from
- Can move to incubator 5 days after grafting when the cells are sealed.



- Timing is critical –the magic number is 12!
- 12 day cycle from graft to emerged queen
- Coordinate the grafting date with other group activities
- Cells can be moved to an incubator on day 5 after grafting once they have been capped.

Getting ready for grafting

Graft sitting in a chair with a tray on your knees. Car seat would do.
Good light is important as you have to see the small larvae clearly. Some people use a jewellers light
The tray holds the brood frame of larvae you are grafting from.
Hold the frame with the 20 cell cups in your left hand and graft larvae with your right. You can lift cell cups one at a time and add to the frame later if you prefer.
If you are grafting more than one frame be aware that the larvae are drying out. One person can graft and another can put the completed frame of grafts in the cell raiser colony.
You need good light to graft but be aware they can dry out quickly on a hot sunny day.

Running order!

- Set up chair, grafting tools, grafting frames with cupkit
- Take the frame you intend to graft from out of the colony it is in. An assistant is useful here. Minimise drying out time.
- Start grafting
- Place completed frames of grafts in cell raiser colonies asap to avoid them drying out
- When finished, return the brood frame you grafted from to its colony.

Do these techniques make any difference to grafting success rate?

- Inserting graft frame a day before
- Double grafting
- Adding royal jelly
- Feeding the cell raiser colony

How to get larvae on and off brush

- The larva is ‘C’ shaped
- Lift from the outside of the C
- Slide the brush under the larva and twist the brush slightly
- The larva should stick to the brush
- The larva must be right on the tip of the brush or you wont be able to get it off easily without damaging it
- To get the larva into the cell cup, touch the tip of the brush onto the floor of the cell cup and rotate the brush slowly while pulling it away slightly
- The larva should stick on the bottom of the cell cup

•Transport of grafts to the cell raiser colonies

•Larvae are ok out of the hive in the cell cups for a short period of time

•Key thing is to avoid larvae drying out - Cover grafts with a damp tea towel

•Ideally the colony you graft from should be in the same apiary as the cell raiser colonies

•You can transport grafts for an hour or more if they are kept humid. Humidity is more critical than temperature

•If you don’t have a car incubator you can put the frame of grafts with a damp tea towel in a polynuc box for transport

Importance of selecting larvae the correct age

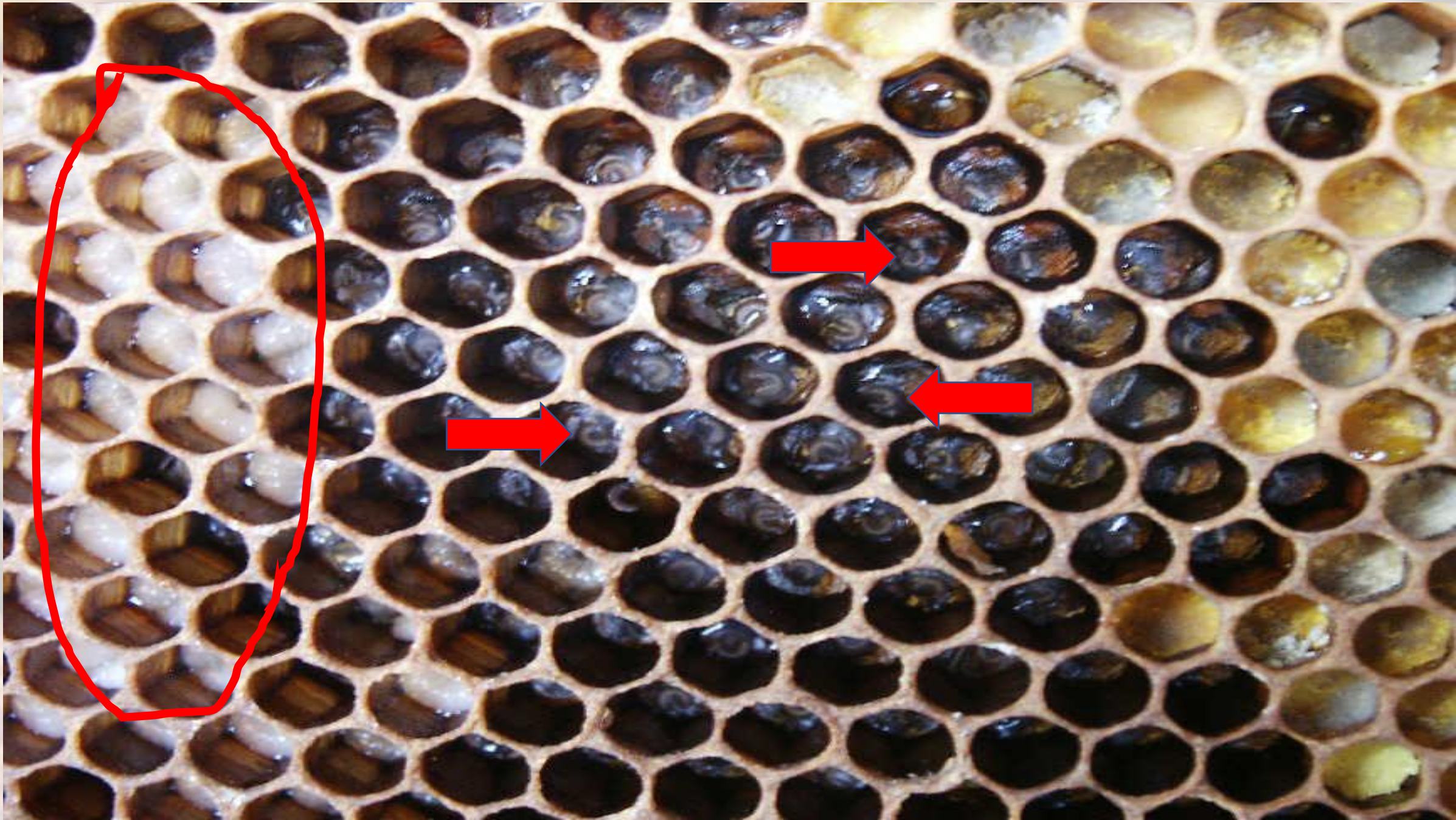
- The queen development timetable is **16** days **- 3** days egg, **5** days larva in open cell, **8** days pupation in sealed cell

- Nutrition (royal jelly) can only be added by the nurse bees when the cell is open, ie max 5 days before sealing

- If you use an older larva the cell will be capped after 3 or 4 days rather than 5 and you will only get a small queen due to limited nutrition

- Select larvae just recently hatched from the egg, ideally 4-12 hours old. The smaller the better.

- Best to avoid larvae right on the edge of the frame as they may be older than they look due to underfeeding

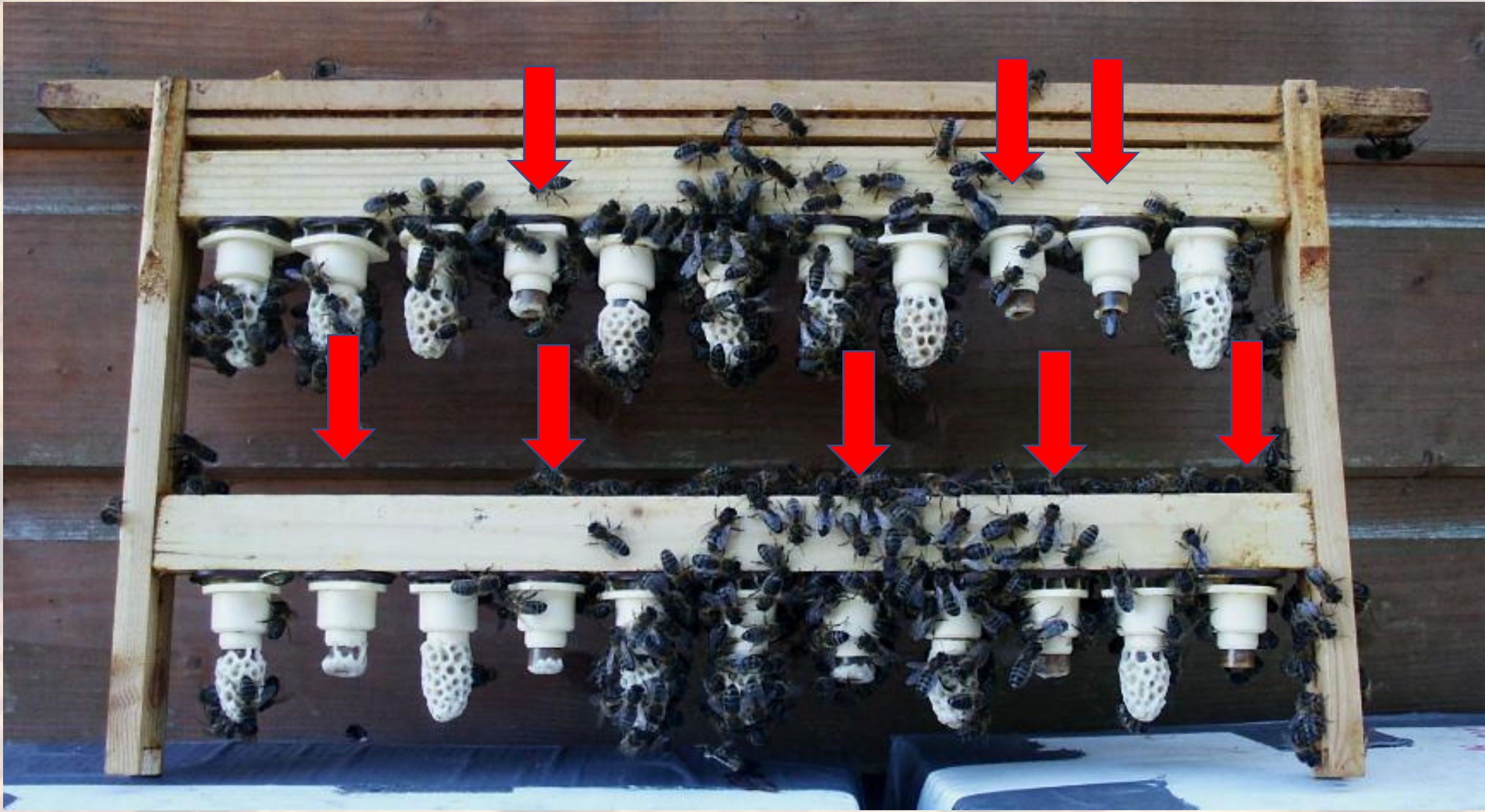


Insert a drawn comb in the centre of the brood nest 4 days before you want to graft

Mark the top bar with a pin

Checking your Grafts

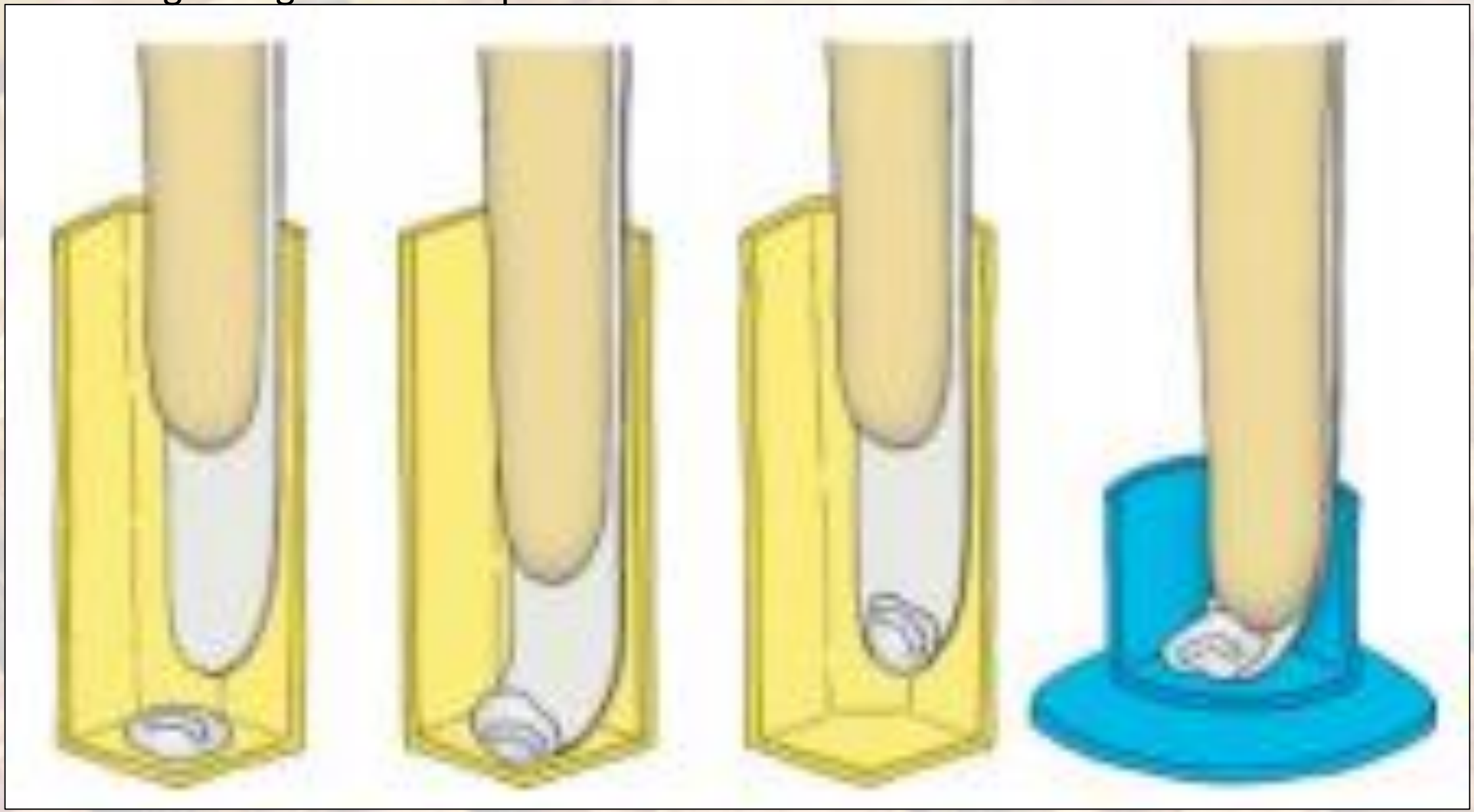
- Check grafts 24 hours after doing them and graft again if the uptake is poor. Don’t wait 10 days before checking.
- If you are working with more than one cell raiser colony and they start a low number of grafts you can move started grafts from one frame onto a frame in the other ie, if each colony starts 8, put all 16 on one frame and graft a new frame of larvae.
- You can move a frame of grafts including the adhering bees from one colony to another without problems.



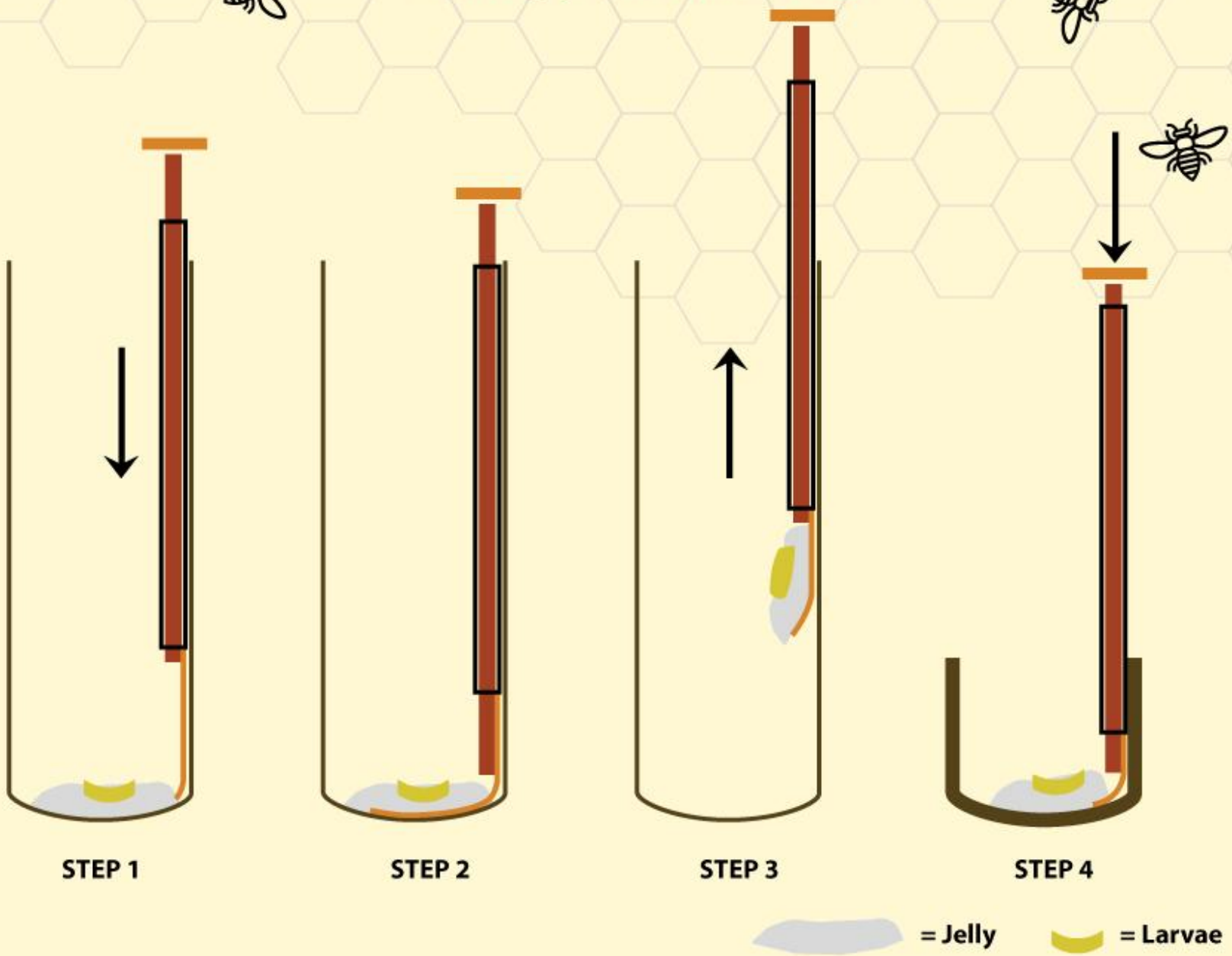
Google for ‘grafting bee larvae’ on youtube

Video - Chinese grafting tool use

Chinese grafting tool technique



Grafting your own Queens



That’s all folks!

Jonathan Getty: native-queen-bees.com