



Swarming



Olivier Pingot
Sydney Bee Club Head Apiarist
When Bee Ambassador

Swarming is natural

What is a swarm?

A swarm is a cluster of bees that left the hive with a queen.

It's a natural behaviour.

From a beekeeper point of view, swarming is counterproductive as it reduce honey crop that can be collected from the hive in a season.

Could also be a problem in urban environment as it is often unsuitable for a safe removal



Swarm at Central Station

3 kinds of swarms :

Primary swarm : half the size of the initial colony. Headed by the original queen, put on a diet in order to fly.

Secondary swarm : Headed by a virgin queen. Smaller in size

Absconding swarm : Disease or starvation

The primary swarm will cluster close to the original hive (10 meters radius)

The secondary swarm will fly further and cluster higher

Both will seek a cavity nearby or will make comb and remain as an open colony



Potentials signs of a colony is preparing to swarm

- Presence of swarm cells, one or several
- Rapid population increase : anticipation of the exceed the space
- Full brood combs and and full honey store : overcrowding

Good conditions in spring for swarming :

- Lots of nectar and pollen

Lead to :

Increase in bee population : the queen can lay up to 3000 eggs per day

Increase in workers and drones while decrease in space :
recipe for a swarm

Genetic involved

Some bee strains are more likely to swarm than others.



3 swarm cells

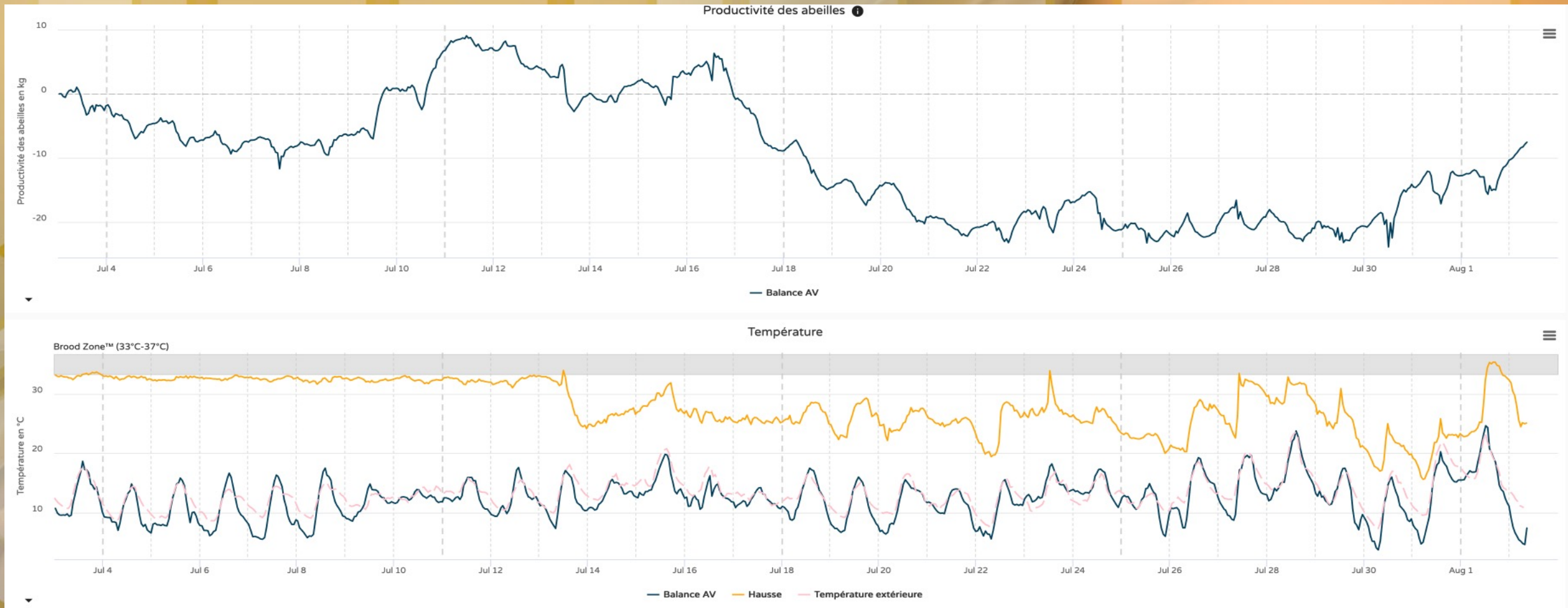
How can I know my hive is about to swarm?

- Open your brood box as soon as weather conditions permits
- Look for queencells
- Look for the amount of open brood
- Find your queen and assess her state (fat or thin): she is put on diet 2 weeks before swarming
- A week before swarming: less eggs
- Bees hanging out outside the hive while weather is not hot
- An hour before swarming, workers do a busy walk around entrance
- Temperature inside the broodbox rise



How can I know my hive is about to swarm?

- Temperature rise just before the event



Management to prevent swarming

- Replacing the queen: old queen produce less pheromones
- Make sure ample food source available around to prevent absconding
- Understanding the season: increase temperature and food source
- Make room in the brood box: elevate above queen excluder pollen/honey frames
- Swapping old frames for new ones
- Removal of honey crop
- Identifying swarm cells (but destroying swarm cells is marginally beneficial as the colony may swarm regardless)

Identifying the reason that could trigger a swarm

Important to know what your colony need is the best management strategy.

Ways to prevent swarming

It is possible to reduce the risk of swarming.

There are many ways of doing it depending on what you want to achieve

If you want to increase your number of hives:

- Nucleus colony
- Walk away split

If you don't want to increase your number of hives:

- Brood lift
- Double broodbox
- Queen confinement
- Cutdown split/combine

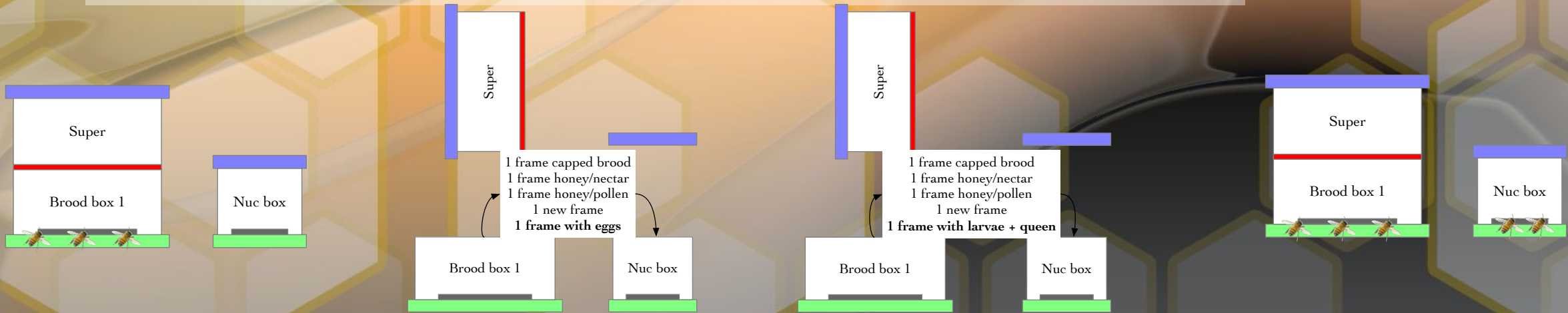
Ways to prevent swarming

Nucleus colony

In a nucleus box add from the hive you want to split:

- 1 frame of capped brood ready to hatch
 - 1 frame of honey/nectar
 - 1 frame of honey+pollen or bee bread
 - 1 frame of foundation
 - 1 frame with larvae + **new queen**
- or
- 1 frame with **freshly laid eggs** + nurses bees

Make sure you find the queen



Ways to prevent swarming

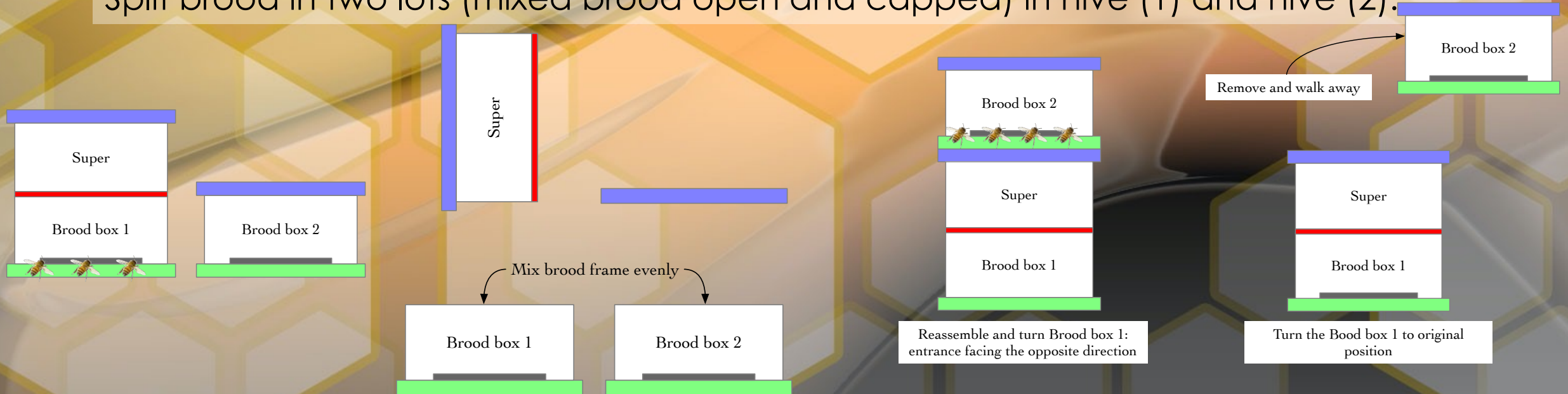
Walk away split

There are different ways of doing it, but basically, it is similar to a split without adding a new queen

Take a new hive (base board, box and lid)

Open the hive (1) you want to split

Split brood in two lots (mixed brood open and capped) in hive (1) and hive (2).



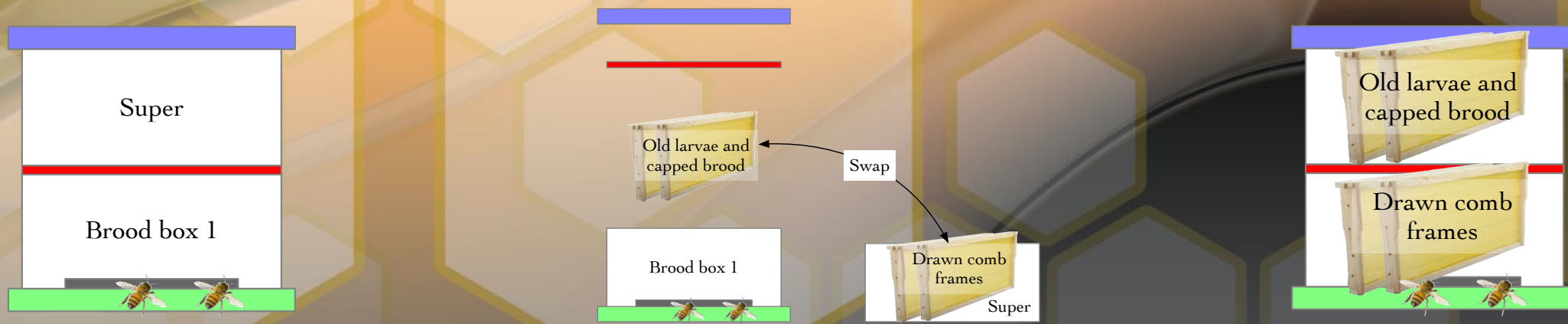
Ways to prevent swarming

Brood lift

Very easy. Gives more room in the brood box

- Find two or three frames chocked with brood: older larvae or capped brood.
- Shake the bees off them.
- Move those frames above the queen excluder.
- Group the remaining brood frames in the middle of the brood box
- Replace the frame taken with empty drawn comb frames (without honey) from super or new foundation on the side of the brood chamber.
- Retire those brood frames during next harvest.

Try to avoid to lift drone brood as they will get caught in the queen excluder. Make sure the queen remain in the broodbox.



Ways to prevent swarming

Double broodbox

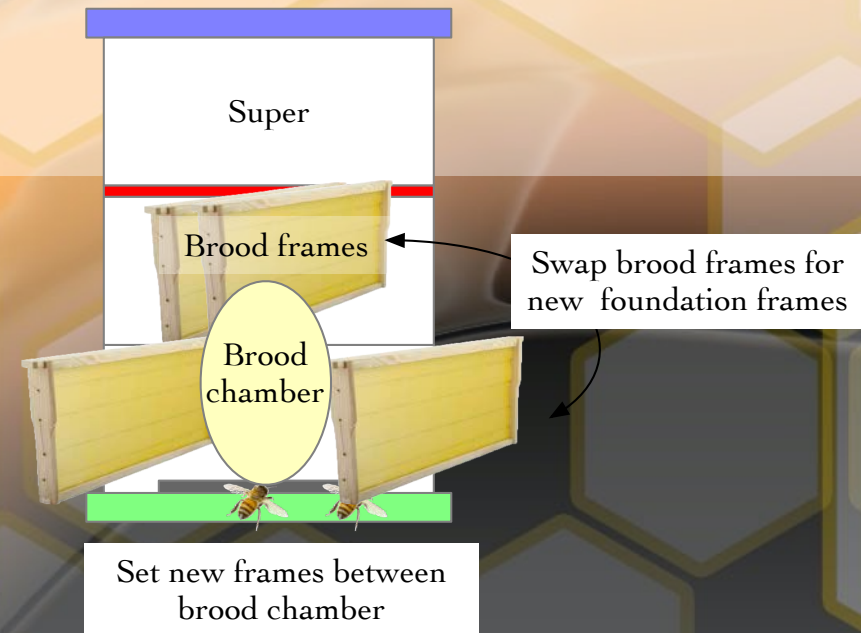
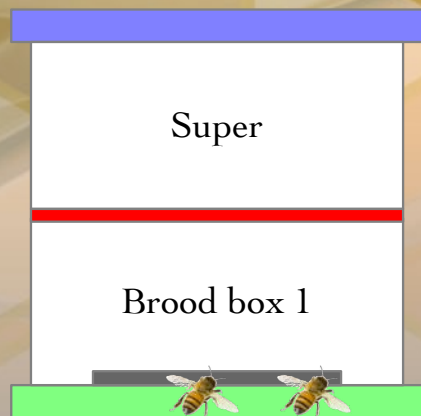
Basically the same process as the brood lift.

- Add a second brood box with foundation frames.
- Swap 2 to 3 frames from bottom brood box to upper brood box.
- Regroup the brood in a single chamber
- Add the queen excluder on top of the second brood box.

All the brood should form a single entity (brood in the second brood box directly above the brood in the lower broodbox).

No need to find the queen.

Can be reduced before winter or split.



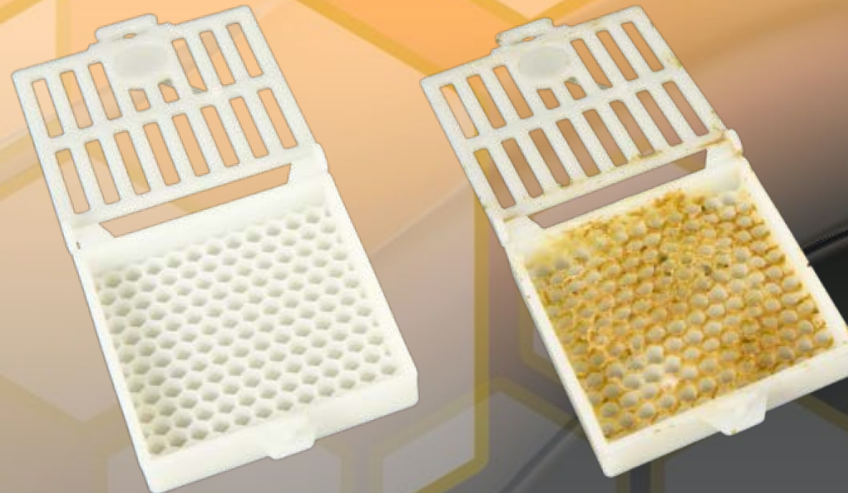
Ways to prevent swarming

Queen confinement

In this method you just confine the queen in order to stop her laying eggs.

- Has to be done before a nectar flow.
- Confine the queen in a queen cage for 2 weeks.
- It will reduce the amount of open brood therefore increase the honey harvesting: workers will spend less time on raising brood and more on foraging.

Depending on the cage used, the queen can escape
Use in Europe to flush varroa from a hive with oxalic acid treatment

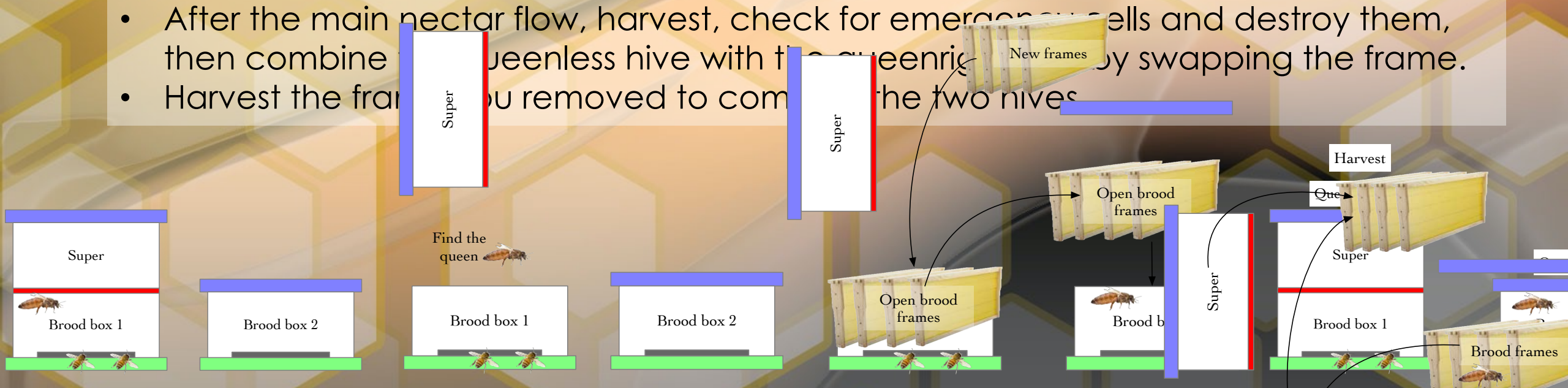


Ways to prevent swarming

Cutdown split/combine

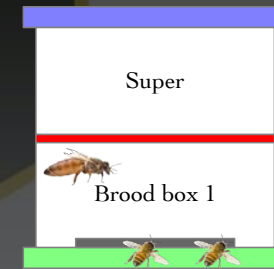
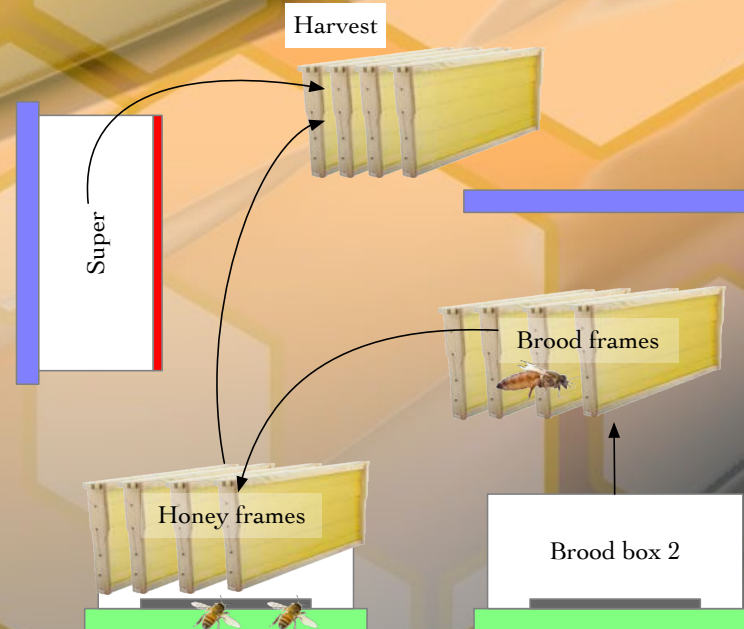
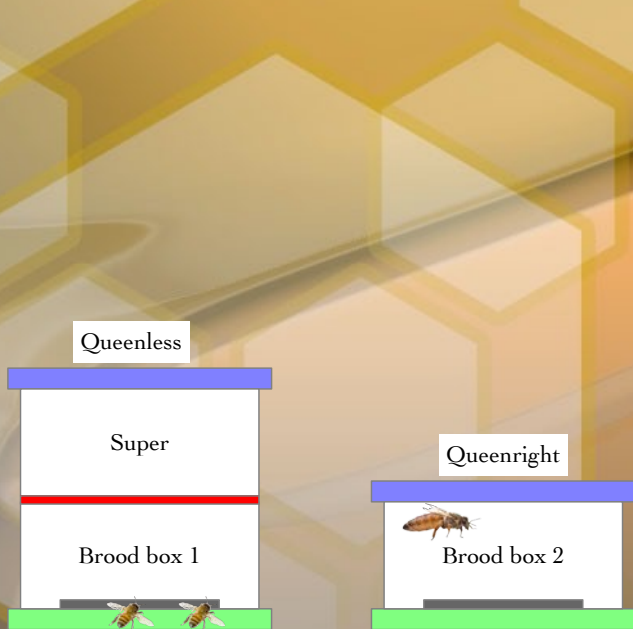
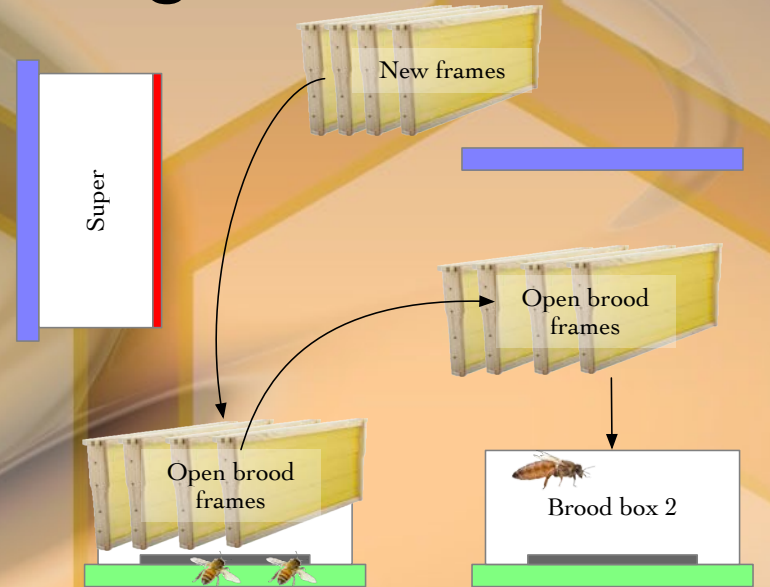
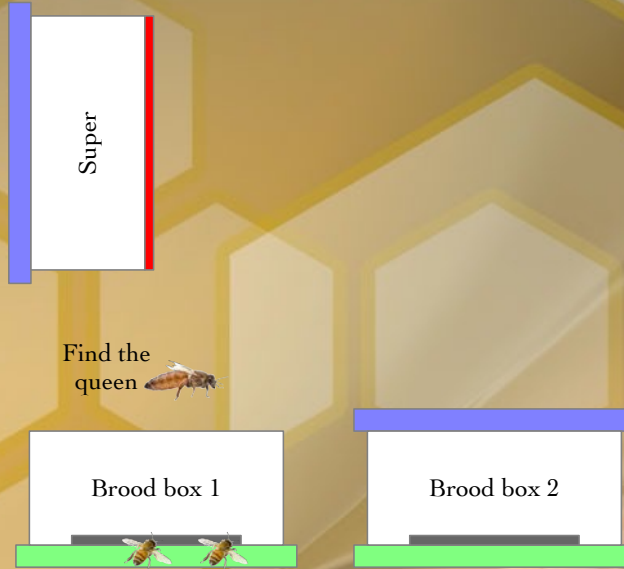
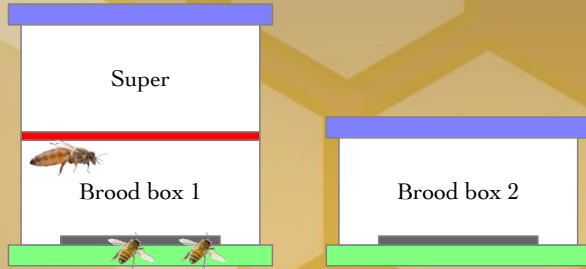
Timing is critical here. It has to be done before a nectar flow.

- Inspect your hive and find the queen.
- Remove any swarm cell you can find.
- Remove all open brood frame and put them with the queen in another hive, at least a few meters away from the first hive.
- Replace with new foundation frames and keep the brood chamber compact.
- With no queen, and no open brood, workers will privilege foraging of nectar therefore increase honey production.
- After the main nectar flow, harvest, check for emergency cells and destroy them, then combine the queenless hive with the queenright one by swapping the frame.
- Harvest the frames you removed to combine the two hives.



Ways to prevent swarming

Cutdown split/combine



What to check after a swarm occurred?

- Don't panic! Try to catch it if you can.
- Check the population of the hive: reduce if needed
- Assess the brood quantity opened or capped
- Check for queen cells opened or closed
- If opened queen cells: look for a queen (could be a virgin)
- Whether you found a queen, remove all queen cells (depending also of the time, weather, population, you can keep only one queen cell, well identified)
- If empty frames: time to change frames: right in the middle
- Be aware of SHB: lesser bees more SHB



Be prepared to collect a swarm

Part of a beekeeper responsibility BUT only do it if you deem it safe for you and for the public.
(seek help or advice)

Ask the good questions :

- How long is the swarm has been there?
- Where is it?
- How high?
- Accessible?
- Public or private area?
- Any hazards or obstacles?
- Size of the swarm?
- Any aggressivity?
- Any known beekeepers around?



Established colony in a shed (2 sides)

What do you need ?

- PPE
- Smoker
- Bucket
- Hive with frames or nucleus hive or box
- Ladder
- Painting pole and swarm bag
- Sheet
- Brush
- Something to scoop
- Secateurs
- Queen pheromone
- ...



How to proceed?

- Access the situation first : is it safe for you (all PPE on) and others?
- Remove all obstacles around.
- Have your smoker lit.
- Open your collecting box/nuc/hive and remove a few frames to make room for the bees
- Depending on the swarm position, try to shake or brush the swarm into the nuc, then close the lid but let the entrance opened.
- Try to get as many bees as possible for the first try: There is a good chance that you also have the queen.
- Let the cluster of bees reform and shake/brush them into a bucket and quickly put all the bees collected into the box.
- Have a look at the entrance of the nuc/hive and watch for bee "calling" others : they have their bottom up fanning the calling pheromone produced by the Nasonov glands. You can smell a lemony/jasmine scent.
- If the bees are rushing into the hive, put the remaining frames back inside and you are done, if not observe and retry.



If the queen is in the box : the marching bees. Job done!



Before shaking



After shaking

If the queen is in the box : the marching bees. Job done!



Filmed and edited by Leonardo Ortega
Music by Clone Me Twice

Hive/nuc collection

- Come back at night with a red light: you can see the bees, but they can't see you!
- Make sure the bees are all in the box. If not, spray them with water (have a spray bottle ready): they will rush inside.
- Close the entrance.
- Strap the box.
- Take the box with you.

Now, you have a new colony.
Monitor for any disease before including this new colony to your apiary.
Depending on the size of the swarm, relocate them in a bigger box.



Invest in a red light

Thank you!

You have help a bee colony and done your part as a beekeeper

A few links:

Visit the Sydney Bee Club website: <https://sydneybeeclub.org.au/bee-swarms/>

ABA: <https://www.beekeepers.asn.au/swarms>

Swarm Patrol: <http://www.swarmpatrol.com/>

You can register as a swarm catcher in your area when you renew your ABA membership.

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