

Caring For Bees

Bee Nutrition

Bees require:

- a) Nectar, which is their carbohydrate source.
- b) Pollen, which is their protein source as well as fats, vitamins and minerals. Proteins are made up of “building blocks” called amino acids. Many pollens do not contain the full complement of the required amino acids. Also, bees require about 24% protein in their pollen. Various pollens contain more but often substantially less than this. A variety of pollens are required to satisfy the bee’s needs in these respects.
- c) Water - required for all life including bees.

Bees suffering from inadequate nutrition are more liable to suffer from secondary health issues. Ideally, sufficient reserves should always be left for bees to get through times of potential shortage. About 8 frames of honey are left in the hive in cold areas, less in warmer areas.

Inspecting a Hive

A quick test is to lift the back of the hive to ascertain its' weight. This may be all the information that you need to decide to feed or not.

If you open the hive, observe the stores of honey and pollen. Look for 3 colours of pollen.

If the bees are starving, adult bees may have removed and eaten brood. Emerging bees may be found half out, dead, or bees may be found head first in cells, dead.

Supplement Feeding

There are numerous methods by which bees may be fed. Frames of honey can be placed back, but be aware of the potential to spread disease. Freezing the frames before sealing and storing will help in the control of beetles and wax moth which will live in the stored material.

Dry white sugar can be placed on the hive mat, under the lid.

Frame feeders, bottle feeders, clip lock bags, and front feeders can be used to deliver sugar syrup. Dissolve 2 parts white sugar in 1 part hot water to make the syrup. These systems suit smaller beekeepers. Larger apiaries may use tub feeders placed amongst the hives.

Irradiated pollen which can be purchased or pollen that you have collected can be fed to bees as required.

Pollen substitutes may be bought or made. These are often based on soya meal and can be delivered as a powder, patty or sausage that can be cut off. These can be fed

under the lid, or the pollen and powders can be brushed into empty brood cells. Unfortunately, beetles and wax moth also like these supplements. Commercially, apiarists often transport their hives to different locations to not only obtain production but to also satisfy bee nutrition requirements.

Conducting a Hive Inspection

1. Light a smoker
2. Put on PPE- a veil at least is recommended
3. Approach and inspect the outside of the hive.
 - Is the activity similar in all hives? Quieter hives may need attention. Incoming Pollen?
 - Are there any bees crawling around in front of the hive, or are there dead bees? (this may indicate a pest or pathogen problem)
 - Are there robber bees- fighting at the entrance or bees trying to enter hive through areas that are not the entrance
 - Is there enough food? (lift with one hand from back to check weight)
4. Smoke the hive entrance and under hive lid.
5. Work from beside the hive with feet locked firmly in place. Stay in the same spot and keep all movements fluid. No jerky movements. When you see bee masters working a hive the bees hardly seem to notice them.
6. Remove the hive lid- place it upside down on the ground near the hive.
7. Remove uppermost super (if any), and place it perpendicular to and on top of the hive lid. Look at the supers last.
8. Remove other supers and stack them perpendicularly to supers already removed from the hive.
9. Remove, inspect and rest the queen excluder on the ground in front of the hive. Check for the queen. The excluder can be rested against the hive entrance allowing the bees to return to the hive.
10. Remove the frame in the second position, inspect it for the queen and place it outside the hive. Keep track of frame number for replacement.
11. Outer frames most likely are the most difficult to remove. Check each frame for the queen, if present return that frame to the hive before proceeding.
12. Remove the 1st frame, inspect and replace it in the same position. Then do the same to frame 3, replacing it where frame 2 was. Frame 4 goes where frame 3 was and so on, right through to the 10th frame (or 8th in an eight frame box) and return this to the same spot it was. Frame 2 can then be replaced in the gap where frame 9 was (frame 9 now in frame 8 position.)
13. All frames are inspected:
 - How do the larvae look? (discoloured or twisted, or healthy: plump, glistening, white and lying back in the cell in the shape of the letter C?)

- How does the capped brood look? (not sunken and perforated)
 - How is the brood pattern? (solid or spotty: a spotty pattern can indicate a failing queen, disease or even pesticide residue)
 - Are the bees aborting brood-diseased or parasitised brood, or not enough food (honey and pollen)?
 - How do adult bees appear? (fully formed wings, covered in hair- if not, possible disease or virus)
 - Are there queen cells on the comb? (where are they: the face of the comb=supersedure; periphery= swarming)
 - Any queen cells opened at the tip? (new queen, opened from the side- suggesting a virgin queen is running around killing her sisters)
 - Are drones present?
14. Does the hive contain the right amount of bees for the time of year? (Do you see any SHB, wax moths, Varroa, - signs of chalkbrood, Nosema, or the foulbroods?)
 15. Return the last frame to the hive after inspecting it and all other frames.
 16. Smoke the bees to move them from the edge of the hive – to minimise the number of bees crushed.
 17. Inspect and replace excluder – make sure the queen is not on it.
 18. Lightly smoke and gently replace the first super.
 19. Determine if you have a reason to go into the super you just replaced. - heavy, damaged, no bees.
 20. Replace and inspect all other supers as needed.

Other inspection activities:-

- Swarm controlling strategies- removing queen cells, add supers, make splits
- Do your bees need to be fed?
- Applying pest or disease control.
- Does the hive need supering or de-supering? (Add supers early in the flow, and remove late in the flow)
- Are you splitting a colony? (ideally in early spring or late summer)
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Source: Australasian Beekeeper and the American Bee Journal.

Click here to watch a demonstration on inspecting a hive:

<https://www.youtube.com/watch?v=5h8Z5zn1Clw>