

Fumigating Comb

Why should I fumigate comb?

Fumigating comb with acetic acid is often advocated as a way of controlling certain diseases such as *Nosema spp.* It has some benefits but they must be weighed carefully.

What about brood comb?

Often recommended in textbooks as part of the control for *Nosema spp.* disease. You must look at the costs involved. In view of the low cost of new foundation it may be easier and more effective to replace any used brood comb with foundation. The existing brood comb can be rendered into wax and then used in part exchange for foundation. Professionally made foundation poses no disease risk.

What about super comb?

It is considered that fumigating super comb with acetic acid has benefits in reducing disease incidence within a colony. Current thinking is that EFB bacteria will be destroyed by fumigation with acetic acid providing that no organic matter is present. E.g. pupal cases.

Are there other ways to fumigate comb?

There are various ways. Radiation is very effective. Unfortunately it is not really practical for the average beekeeper. Equipment needs to be sealed in packs on pallets and total costs are similar to replacing the combs with new frames and foundation. The usually accepted method is fumigation with acetic acid. Heat can also be used in relation to *Nosema spp.*

PTO.

How do I fumigate using acetic acid?

You will require 80% acetic acid and absorbent pads. The acid must be treated with care; it will burn the skin off your hands and anywhere else on your body! It attacks concrete and corrodes metal hive parts. You must take proper safety precautions and suitable containers when using it.

- a) Scrape the wooden frames to clean off propolis and other excess material. Clean out the relevant brood box or super, coat any exposed metal parts with Vaseline and replace the combs in the box.
- b) Place a clean hive floor on the ground and put on it an absorbent pad containing 140 millilitres (1/4 pint) of acetic acid. It is best to do this away from the house. Acetic acid has a distinctive smell, which many find objectionable.
- c) Place a box of comb on the floor.
- d) A stack can then be built placing absorbent pads as on the floor between each brood box or two supers. The stack is then closed with a crown board and roof. Seal it up using sticky tape. Polythene tubing as used for wrapping carpets makes a very good covering effectively sealing the stack if you make each end airtight.
- e) After a week the stack can be opened and the boxes aired for at least two days before using.
- f) Acetic acid does not affect wax or stores so they are safe to return to bees.

What about heat treatment?

Heat treatment of combs and other hive equipment is a method of decontaminating a potential source of *Nosema spp.*. It involves heating combs and equipment in a room or suitable container at 49C. (120F.) for 24 hours.

Points to watch are:

- 1) The temperature needs to be accurately maintained with no hot spots.
- 2) Combs need to be upright to prevent warping or collapse.
- 3) Combs should be free of stores, pollen, etc.
- 4) Free air circulation is needed.
- 5) Combs must be slowly cooled before being moved or they may be damaged.

National Bee Unit
Food and Environment Research Agency
Sand Hutton, York. YO41 1 LZ

Telephone 01 904 462 510 e mail nbu@fera.gsi.gov.uk

April 2009

NBU Web Site: www.nationalbeeunit.com

© Crown copyright. This sheet, excluding the logo, may be reproduced free of charge provided that it is reproduced accurately and not used in a misleading way. The material must be acknowledged.