SPRING DISEASE INSPECTION

WHEN:

End April – Early May. The colony should be building up rapidly so the bees will not be fully on top of their housekeeping duties so you are more likely to see diseased brood at this time. It is also good to do a full inspection at the end of the year before the winter.

EQUIPMENT NEEDED:

Matchsticks – to investigate suspect cells (burn in smoker after use).
Blunt forceps – to pull out cell contents without piercing contents and spreading pathogens.
Bucket of washing soda solution and steel scourer – to clean tools.
Tub with lid – for waste.
Small LED torch – needed if not very sunny to view scale properly.
Disposable over gloves if using leather gauntlets – until sure no disease present.
Clean Bee suit and gloves.
Match box (large) – if you need to take a sample for nosema/acarine.

WHAT TO DO:

Preparation:

- Smoke colony.
- Remove roof, crown board, supers and queen Excluder.
- Remove dummy board and first 1 to 2 frames if no brood on them (makes space to examine the other frames without crushing or rolling the bees).

For each Frame in turn with brood on it:

- Check for Queen – if present put her somewhere safe.
- Check for Queen cells – if present do not shake the frame until you know you don't need them
- Examine the adult bees.
- Shake off as many bees as possible to expose the brood (2 or 3 short sharp shakes with the frame inside the Brood Body taking care not to crush or roll the bees or bang the frame against the sides).
- Examine all open brood – investigate the contents of any suspicious cells.
- Examine all sealed brood – investigate the contents of any suspicious cells.
- Look for scale from any EFB/AFB infection– position frame correctly for EFB (so the light hits the sides of the cells walls) and AFB (so the light hits the base of the cell walls).
- Check varroa insert and count the mite drop–a clean insert should have been in place for 7-10 days. In April, May and June no action is required for varroa if the mite drop is less than 1 mite per day, 2-6 mites per day, light control required such as drone brood removal or icing sugar, 7+ mites per day immediate treatment with varroacide is required.
- If the colony is generally weak and not building up well take a sample of 30 bees to check for Nosema or Acarine, or consider whether this could be a poor or failing queen.

WHAT TO LOOK FOR:

Adult Bees

Varroa mites on bees – likely heavy varroa count within the hive.
Stunted bodies, deformed or K wings –possibly DWV virus.
Shaking, crawling, non flying bees – possibly Acarine, CBPV or starvation.
Hairless bees with shiny/greasy bodies sometimes with bloated abdomens – possibly CBPV.

Open Brood

Multiple eggs in cells or eggs laid on cell wall – possibly laying workers.
Poor larval segmentation, yellow/brown larvae, distorted larvae not flat in cell base but up cells walls – possibly EFB.
Hard white chalky larvae – possibly Chalk brood.
Visible large larval gut, distended and creamy white in colour – possibly EFB.
Uncapped cells showing dead yellow/brown larvae with darkened head facing up (like a Chinese slipper) contents are easy to remove in one piece– possibly Sac Brood.

Sealed Brood

Brood pattern not uniform with lots of missing cells – possibly Chalk Brood, interbreeding, laying worker policing or Sac Brood.
Domed uneven capping – possibly laying workers (brood pattern not very compact) or drone laying queen (brood pattern compact).
Greasy sunken cappings with perforations –possibly AFB. Please note that in the early stages cappings will not necessarily be greasy and only slightly sunken with possible perforations. It is therefore very difficult to diagnose, seek further advice if your colony was thriving last year but does not seem to be doing so this year.
Roping of cell contents when matchstick inserted, especially on sunken/perforated capped cells – possibly AFB.

Please note heavy varroa infestations can mimic foul brood disease symptoms. Look for a combination of dead discoloured brood at **various** stages, perforated but **dry** cappings, pepperpot brood and evidence of viral disease such as DWV allied with a heavy varroa infestation. Colonies will die if effective varroa treatment is not administered immediately. Known as PMS (Parasitic Mite Syndrome).

Scale

Hard black scale, firmly attached to cell base (pupal proboscis evident) – possibly AFB.
Loose rubbery brown scale on side wall which can be removed – possibly EFB.

Other

Slow Spring build up – possibly Nosema or Acarine or just the weather and bees have not been able to relieve themselves!
Comb stained with bee faecal matter – possibly dysentery due to poor nutrition such as fermented stores or stores with high water content. An infection with Nosema doesn't cause the dysentery but will make it much worse.

WHAT TO DO:

Keep an eye on varroa levels throughout the season and implement a range of measures to reduce the population of mites. See Bee Base for the advisory leaflets on what you can do to control mite numbers. Some disease such as Chalk Brood and Sac Brood and Acarine may not be too serious if not too widespread within the hive. Often the only treatment is to re-queen at an appropriate time (some queens have a genetic predisposition to be affected by these diseases). However any suspected sign of EFB or AFB has to be treated very seriously and should be reported directly to the Regional Bee Inspector, or if you are a relatively new beekeeper to a more experienced member of the Association in the first instance. Both AFB and EFB are legally notifiable diseases. Our Bee Inspector is Ivor Flatman (ivor.flatman@apha.gsi.gov.uk)