



Scottish Government
Riaghaltas na h-Alba



SRUC

NON-NOTIFIABLE PESTS AND DISEASES

BEEKEEPING MODULES

These presentations are funded by the Scottish Government as part of Scotland's Honey Bee Health Strategy

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Aims of Module

- To provide information about non-notifiable diseases and pests



Non-notifiable diseases

- ▶ Chalkbrood
- ▶ Sacbrood
- ▶ Nosema apis and *N. ceranae*
- ▶ Chronic Bee Paralysis Virus



Non-notifiable pests

- Acarine
- Wax Moth
- Braula

Key Preventative Measures

Strong colonies

Healthy brood

Plenty of food

Good Varroa control

Fertile young queens

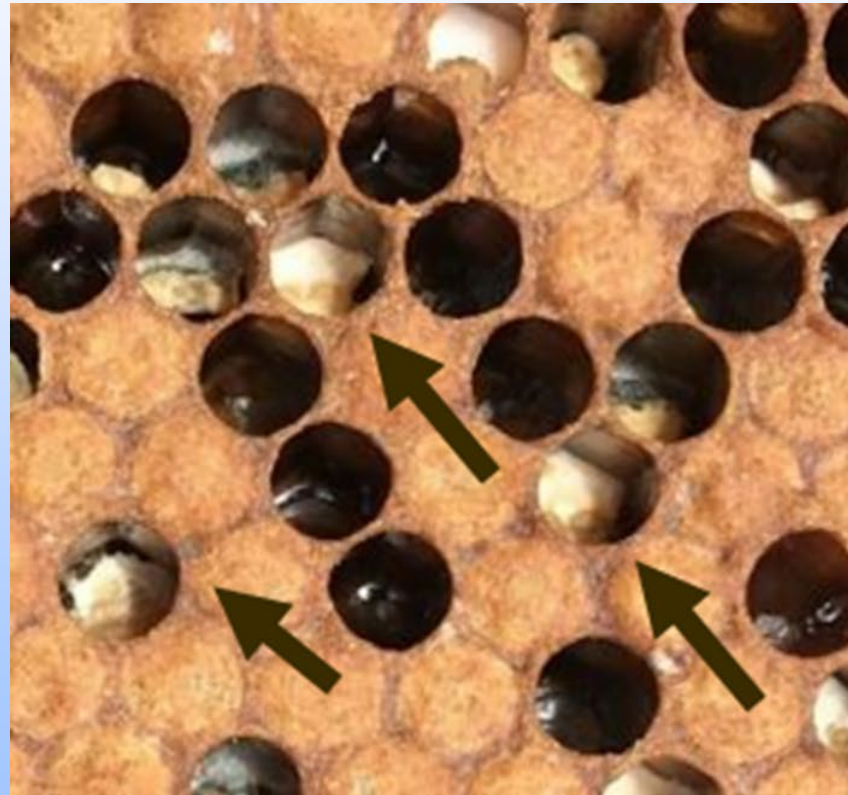
Disease checks

Plenty of space

Good biosecurity

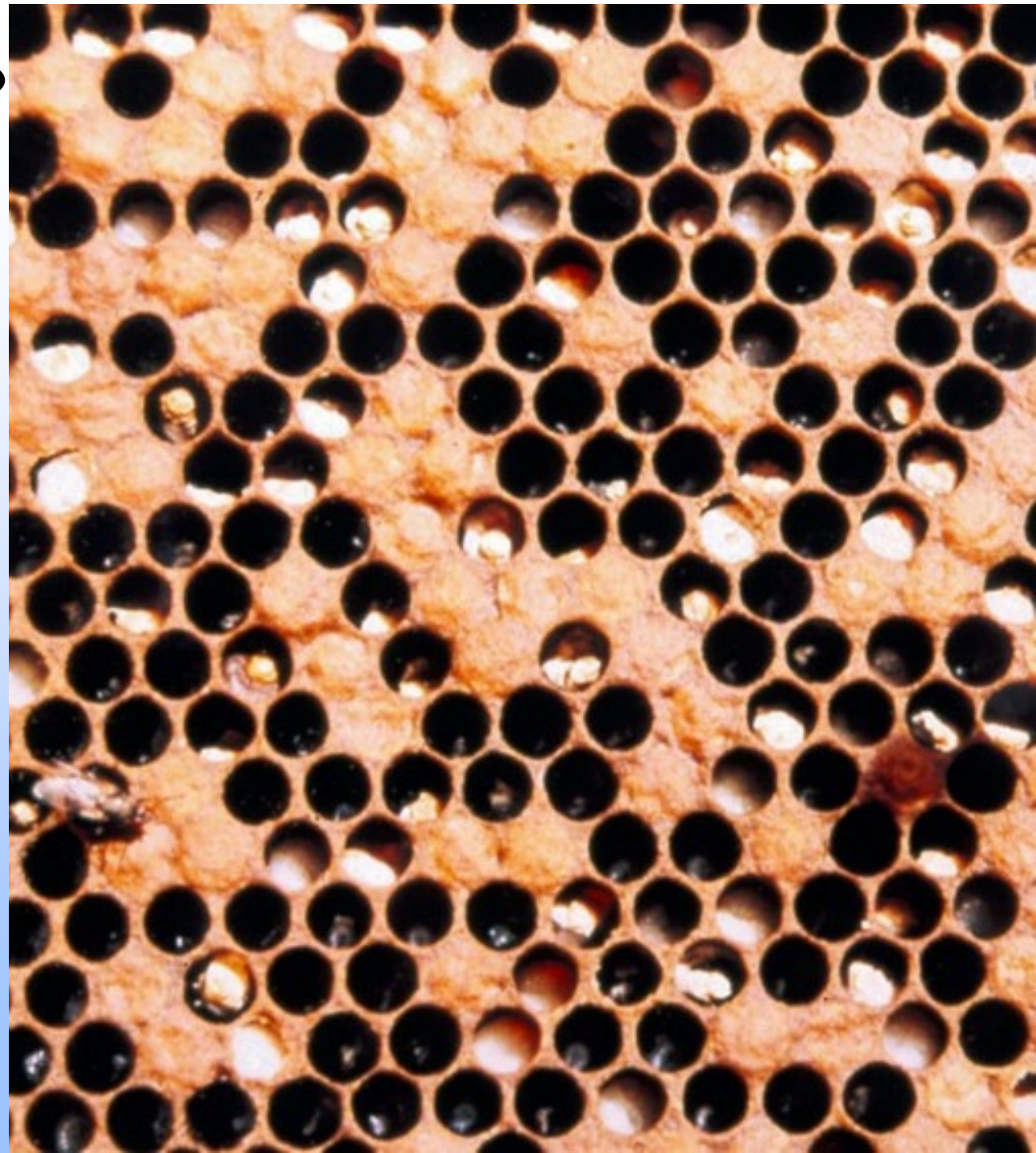
Spaced out Apiary

Chalkbrood



Chalkbrood – What Is It?

- Chalkbrood disease is caused by the fungus *Ascosphaera apis*.
- Chalkbrood disease is not usually a serious disease.
- Chalkbrood disease is common in the spring when temperatures are cooler, the brood is rapidly expanding, and the smaller honey bee workforce cannot maintain brood nest temperature.



Symptoms Of Chalkbrood



- Spores germinate in gut and absorb nutrients from larvae, causing starvation
- Spores stick to cells
- Larvae swells and hardens after a few days
- Problem for smaller colonies or those under stress (for example suffering heavy varroa infestations)

Treatment

- Colonies which are susceptible can be re-queened
- Avoid damp apiary sites
- Good ventilation
- Bailey comb exchange or shook swarm may help



Sacbrood



Sacbrood – What Is It?

- Sacbrood is a viral infection of the brood
- It is caused by the **Iflavirus** genus
- Larva fails to pupate after being sealed in its cell.
- It does not usually cause colony loss



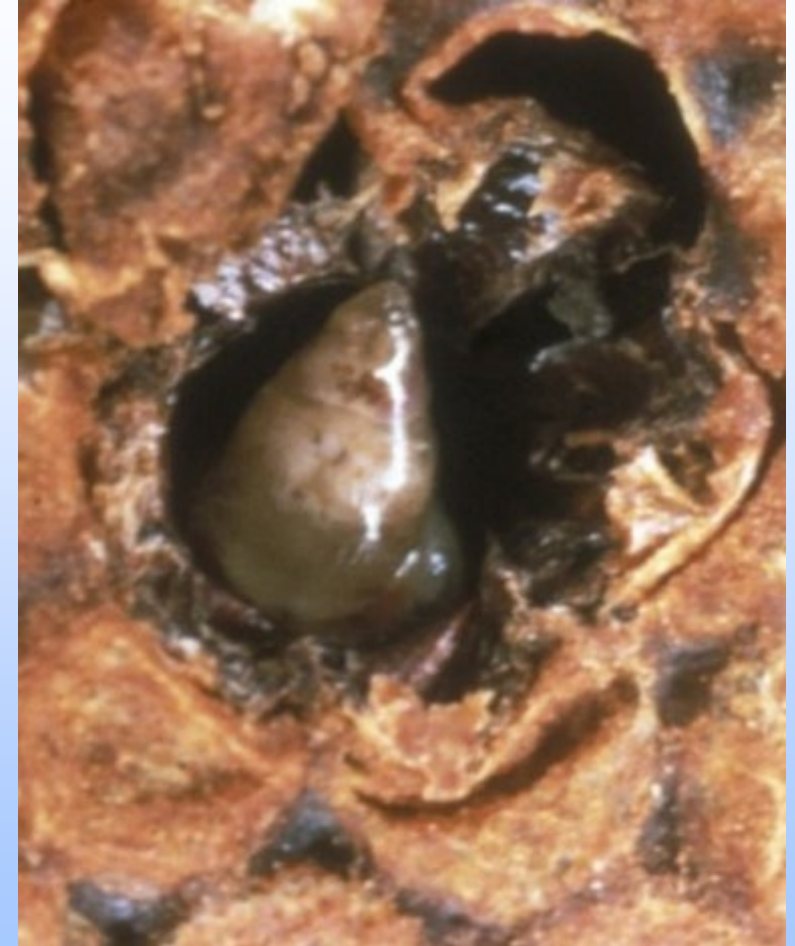
Symptoms

- The infected larva turns from its usual pearly white to a pale-yellow colour
- The larva will die and begin to dry out, turning a dark brown to black colour
- The skin of the dead larva also changes into a tough plastic-like sac, which is filled with fluid
- The workers will uncap creating an uneven brood pattern
- Discoloured, sunken or perforated cappings scattered through the brood



Spread

- *Varroa destructor* is able to vector sacbrood virus
- Intervention of the beekeeper by transferring material from infected colonies to a healthy colony.
- Feeding behaviour of nurse bees and bees robbing infected colonies.



Sacbrood Treatment

- ▶ Re-queening the colony can help to alleviate the symptoms of sacbrood
- ▶ Regular frame replacement may help
- ▶ Good biosecurity

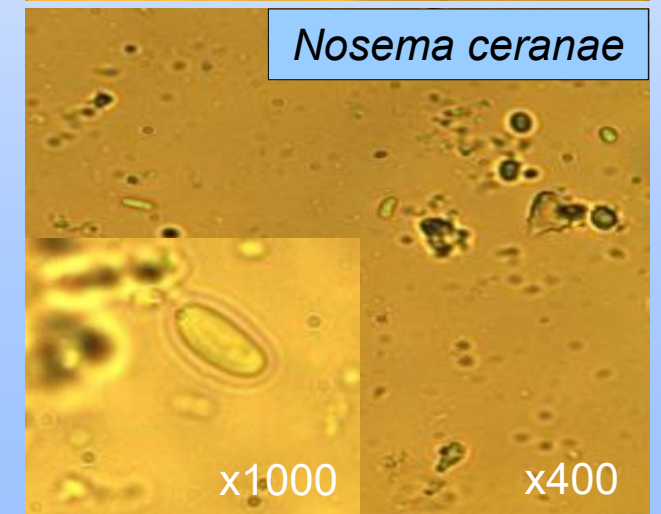
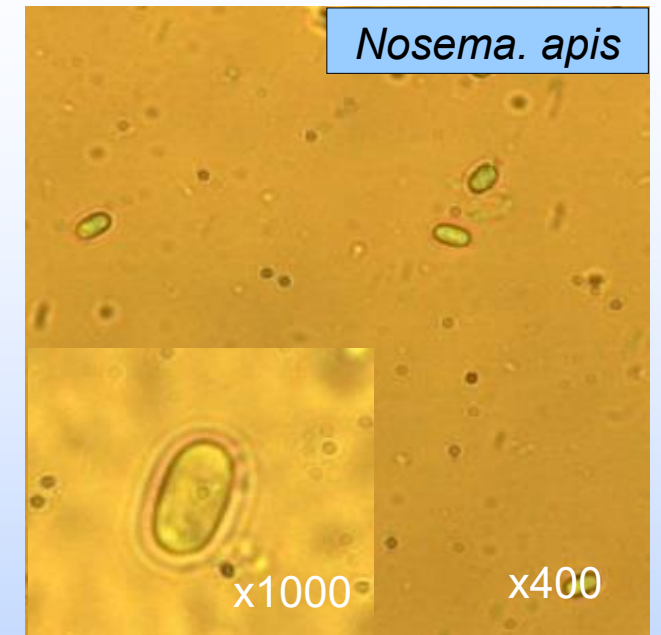


Nosema



Nosema apis and N. ceranae – what is it?

- Both Nosema species are spore forming microsporidia (fungus).
- They multiply within living cells of the gut and can weaken both individual bees and entire colonies.
- This makes them more susceptible to other pests and diseases, as well as affecting digestion, metabolism, hormone production, queen egg laying, homing and learning



Symptoms



Nosema apis

- Dysentery
- Smaller bees
- Distended abdomens

Nosema ceranae

- Smaller bees
- Distended abdomens
- Spring losses
- Weak or dwindling colony

Treatment for Nosema

GOOD FORAGE / SHOOK SWARM / BAILEY COMB EXCHANGE

Diagnosis

Microscope

PCR

Treatment

Renew
Frames

80% Acetic
acid

Control

Strong
heathy
colony's

Good
biosecurity

CHRONIC BEE PARALYSIS VIRUS



Chronic Bee Paralysis Virus – What Is It?

- RNA virus
- Affects Adult bees
- Spreads by body contact
- Affects the brain
- Single bee can have 10 billion virus particles



CBPV Symptoms

Circling
Trembling

Paralysis

Unable to fly

Crawling

Bloated
abdomens

Dead bees in
hive and at
entrance

Hairless

Dark/Black

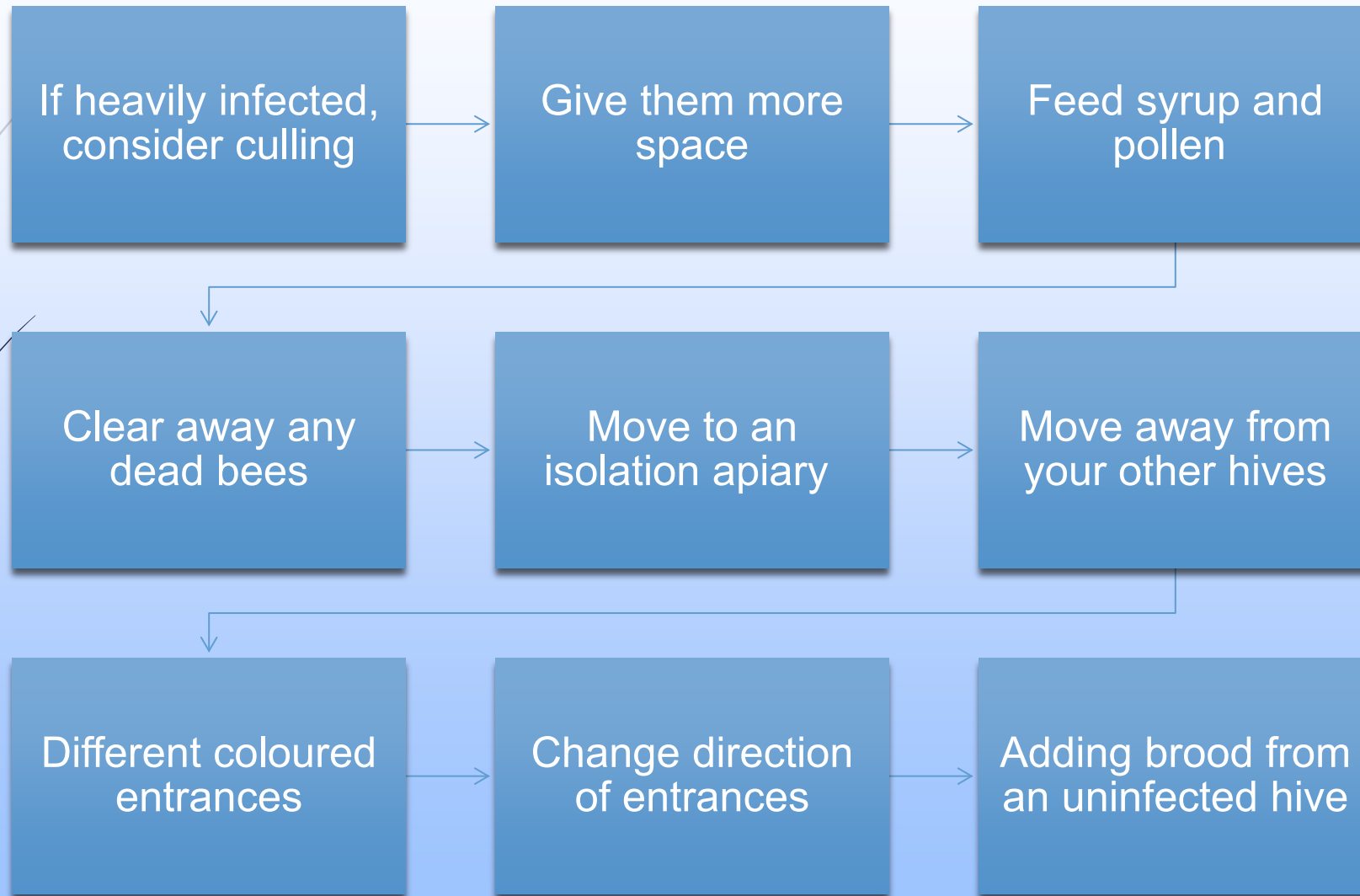
Nibbling

Ejecting from
hive

Little response
to smoke

K Wing

Managing CBPV - How To Deal With It



Poisoning Symptoms



- ▶ Lack of flying bees around the apiary
- ▶ Dead bees carrying pollen scattered on approach to hive entrance
- ▶ 'Zapped fly syndrome' (spinning on back)
- ▶ Fewer foraging bees at the entrance
- ▶ Poisoned bees denied entry to the hive
- ▶ In severe cases, dead adult bees will be found inside the hives as well and brood will die from neglect
- ▶ Most or all hives in an apiary may be affected
- ▶ Remaining bees may behave aggressively.

Common pests





Acarine Mites

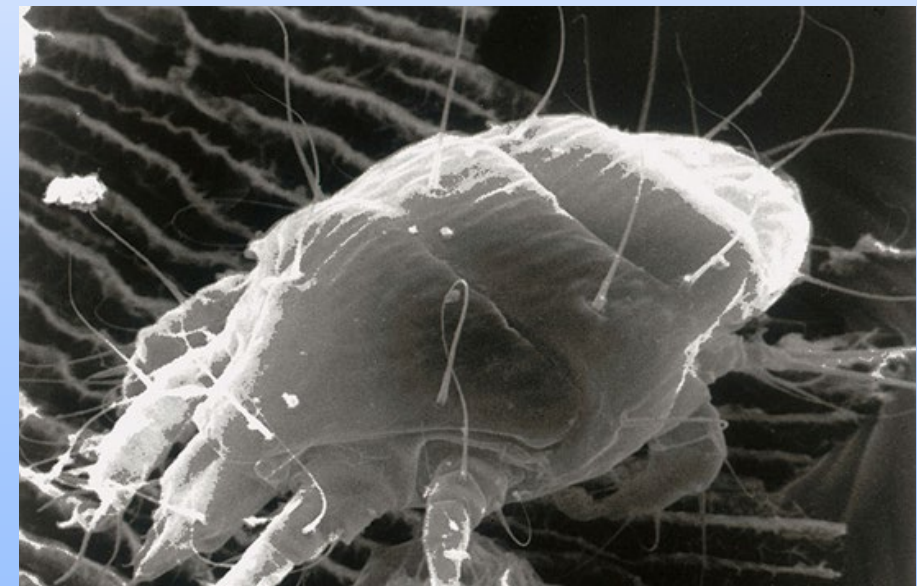


Acarine Mites

- Acarapisosis is the infestation of the breathing tubes (trachea) of the adult bee by the parasitic mite *Acarapis woodi*.
- It is in the trachea that the acarine mites reproduce and feed.
- It is not normally a serious disease

Symptoms include:

- Bees cluster in front of the hive
- Appearing confused and disorientated
- Unable to return to the hive
- Bees may also display K wing



Tracheal / Acarine disease

- Tracheal mite infection is not usually a serious disease
- There are currently no approved treatments for Acarine.
- The best method of control available to the beekeeper is to re-queen colonies that are susceptible to the disease.



Healthy



Diseased

Wax Moth



Wax Moth



Greater Wax Moth, *Galleria mellonella*

Lesser Wax moth, *Achroia grisella*

Causes

- ▶ Unhygienic practices
- ▶ Leaving comb badly stored
- ▶ Very weak colonies



Braula



Braula



- Also known as the Bee Louse is a **wingless fly**
- It can be distinguished from Varroa by its more rounded shape and its **six legs**, which are visible on both sides of its body.
- Their larvae make narrow 1mm tunnels under the wax cappings, which result in the comb appearing **cracked**.

Other pests



- Mice
- Woodpeckers
- Badgers
- Farm animals
- Pine martins

Who To Contact and When

SRUC Advisor – for general beekeeping advice and non notifiable pests & disease

Bees Mailbox – when you suspect you have notifiable pests or disease or need advice of bee inspectors

Suspected Poisoning
wiis-
scotland@sasa.gov.scot

Policy if you have a request about laws rules and plans

Sasa – diagnosing notifiable disease

SBA, Association & mentors – general everyday advice and support

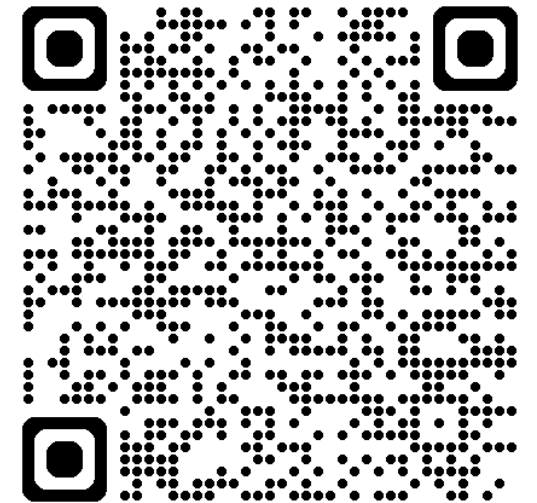
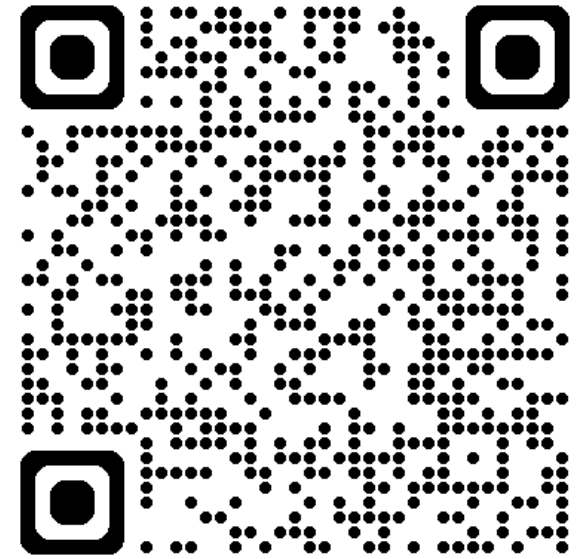
Sending a Sample to SASA for Nosema

[Adult Bee Diseases | SASA \(Science & Advice for Scottish Agriculture\)](#)

REPORTING POISONING TO WIIS

[Wildlife Incident Investigation Scheme \(WIIS\)](#)

[SASA \(Science & Advice for Scottish Agriculture\)](#)



Resources Available: Scottish Government and SRUC

Contact: Bees_Mailbox@gov.scot

[Scottish Government Honey Bee Health Strategy 2022-2032](#)

[Scottish Government Honey Bee Implementation Plan](#)

[SRUC Bee Podcasts](#)



Resources Available – Others

[BeeBase – Information for Scottish Beekeepers](#)



[Scottish Beekeepers Association](#)



[Bee Farmers Association](#)



[Foulbrood 2025](#)

