

# **Pests and Diseases**

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# Diseases

- Spread by Pathogens
  - An agent capable of carrying disease
  - They can lie dormant or remain at a low level in a hive, and only be realised as a disease when something else happens – e.g. stress
  - For example: virus, bacteria, microsporidia

# Pests

- Something large which directly harms bees
  - For example:
    - wasp, mice, woodpecker, beekeeper, vandal

# Pathogen by size

## Virus

DWV  
CBPV (type 1 and type 2)  
Sacbrood

## Bacteria

AFB  
EFB

## Large organisms

Acarine  
Varroa  
Wasp, Hornet  
Mammals

## Single celled organisms

Nosema - Microsporidia  
Chalkbrood - Fungus  
Malpighamoeba mellificae - Amoeba

## The effect on:

- Brood
- Adults

# Brood – Sacbrood (virus)



Caused by the Sacbrood virus

# Brood – American Foul Brood (bacteria)



A Notifiable Disease

Caused by the bacteria  
*Paenibacillus larvae larvae*



# Brood – European Foul Brood (bacteria)



## A Notifiable Disease

Caused by the bacteria  
*Melissococcus plutonius*



# Brood – Chalkbrood (fungus)



Caused by the *Ascosphaera apis* fungus



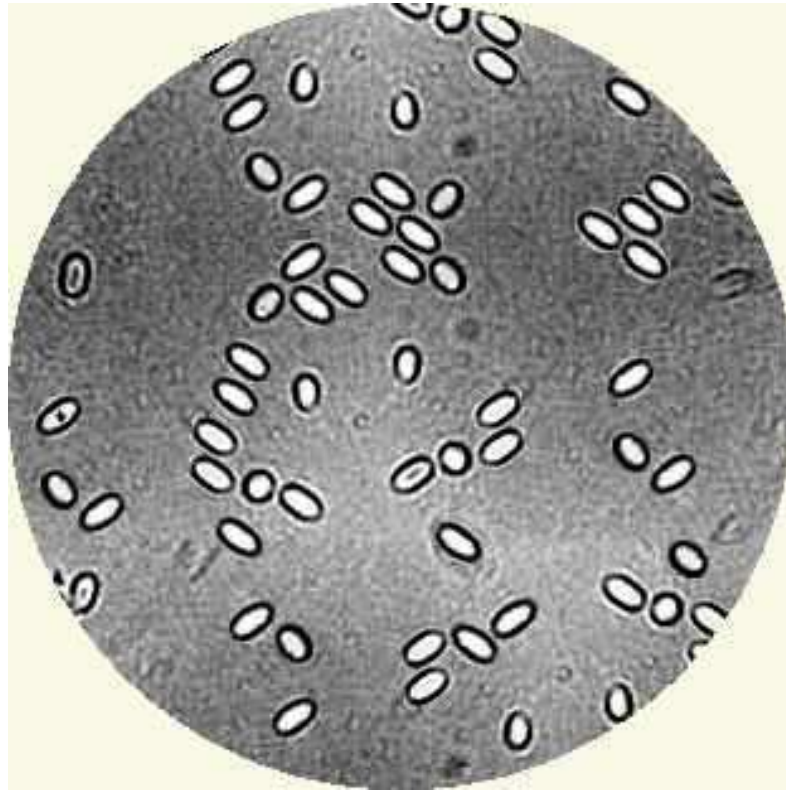
# Adult – Deformed Wing Virus



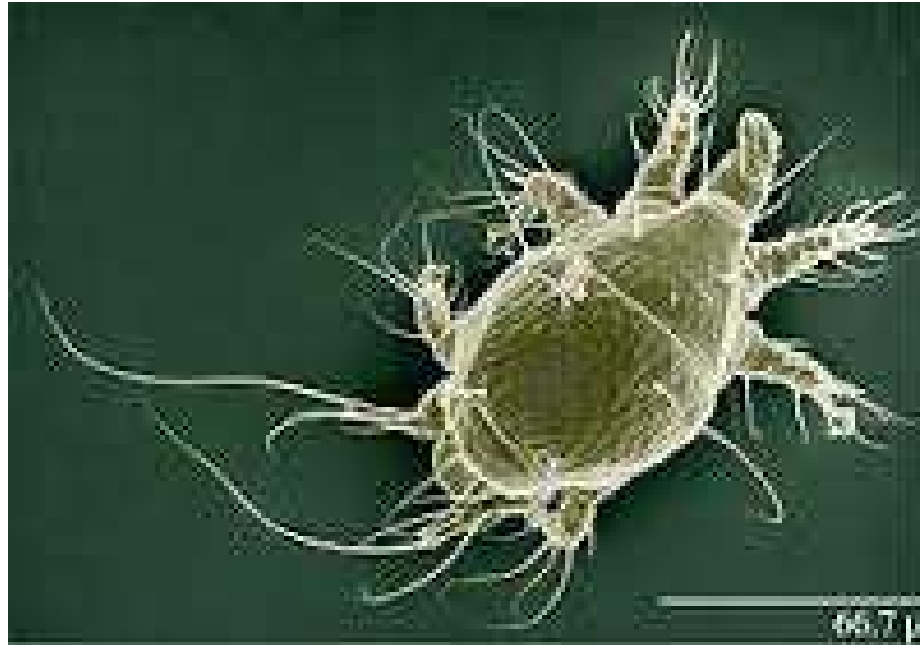
# Adult – Chronic Bee Paralysis Virus



# Adult – Nosema (microsporidia)



# Adult – Acarine (tracheal mite)



*Acarapis Woodi*

## Adult – Varroa (mite)



Varroa Destructor