

## The Food and Environment Research Agency National Bee Unit

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Commercial and Diagnostics Manager



# The Food and Environment Research Agency -Fera

- Government research agency
- Agricultural, food & environmental research
- Partners with research institutes & commerce
- Home of the National Bee Unit

#### **National Bee Unit**

UK Universities

Institutes overseas



Research

Defra, VMD



### Field

inspections

Statutory Notifiable – EFB, AFB
Diagnosis/Treatment Exotic threats SHB, Tropilaelaps



Policy Team, Beekeepers, Veterinary Medicines Directorate, Commission, Scotland NI, OIE/OGA/Overseas

NBU

Diagnostics

Commercial

Efficacy and safety evaluation Veterinary Medicines Plant Protection Products (GLP)

Training

Imports/Exports

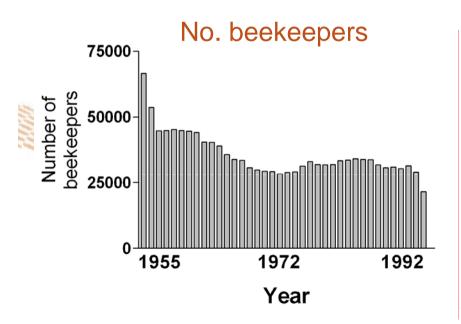
EU/Third Country
Health Checks, Certification

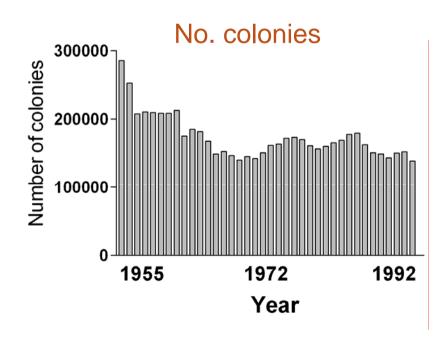
Consultancy



## Beekeeping and Losses in the UK

- 275,000 colonies
- Approx. 35,000 beekeepers
- 300 professionals: 40-50,000+ colonies
- Honey crop approx 6000 tonnes



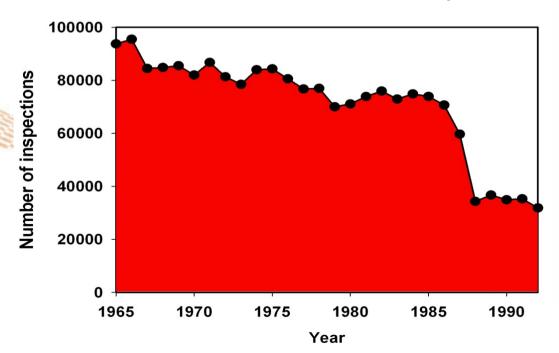


## Historic inspection data



#### Data is based on inspection programme

- April to October
- Different from over winter losses
- Data consistent 1965-92
- 30,000-100,000 colonies inspected

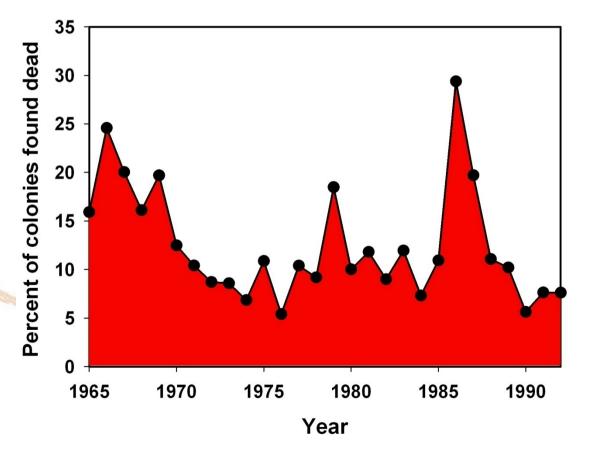






## Historic inspection data

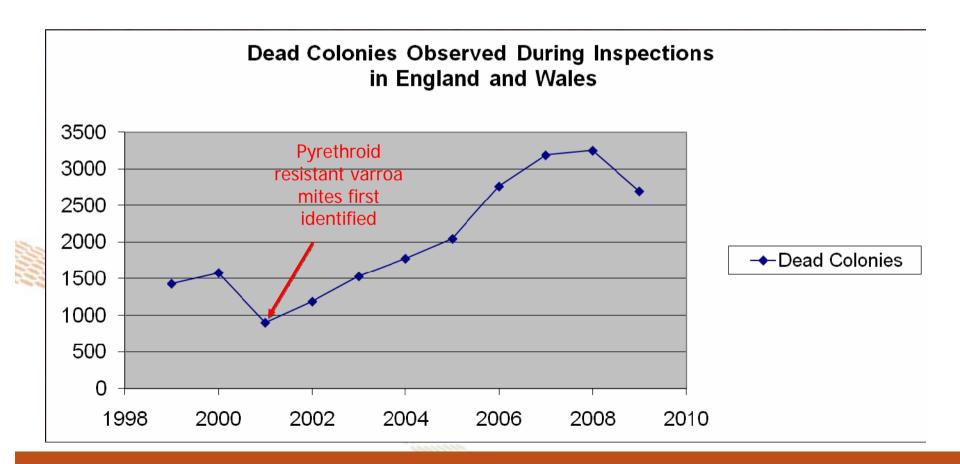
- Colonies found dead/total colonies inspected
- Varied in season losses from 5-30%

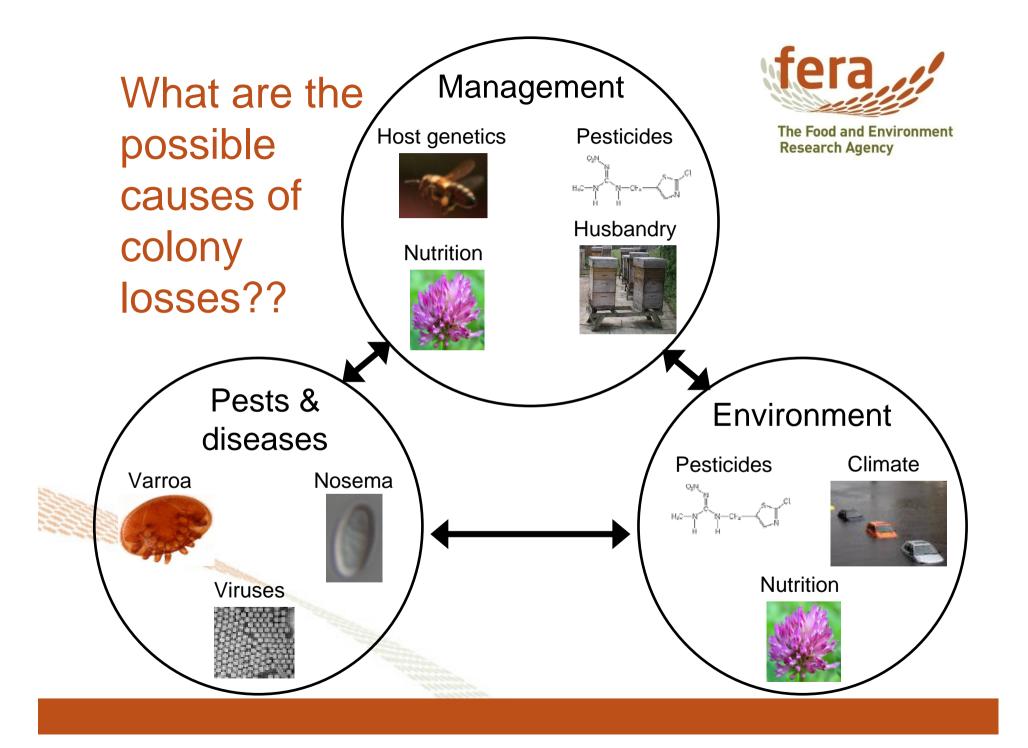






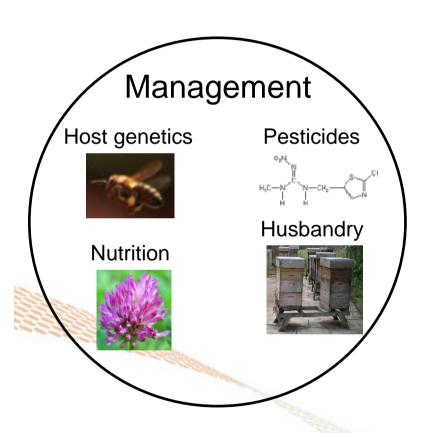
- Steady rise in colony losses from 2001
- Suggested link to pyrethroid resistant mites



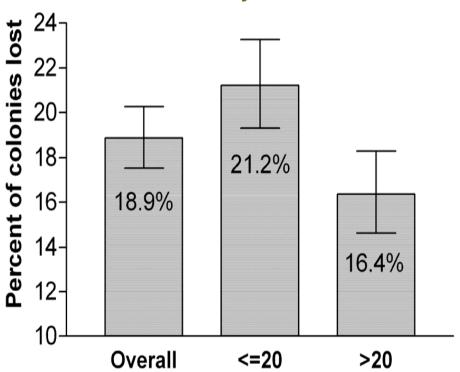


## Anonymous husbandry survey 2008-2009





#### **Preliminary Results**





## Colony loss project 2007-2009

- Genetic material extracted
- 'One stop shop' using real-time PCR (TaqMan)
- Tested for: 8 viruses (KBV, DWV, BQCV, SBV, CBPV, ABPV, AIV, IAPV), both Nosema spp., Tracheal mite, Mp (EFB)

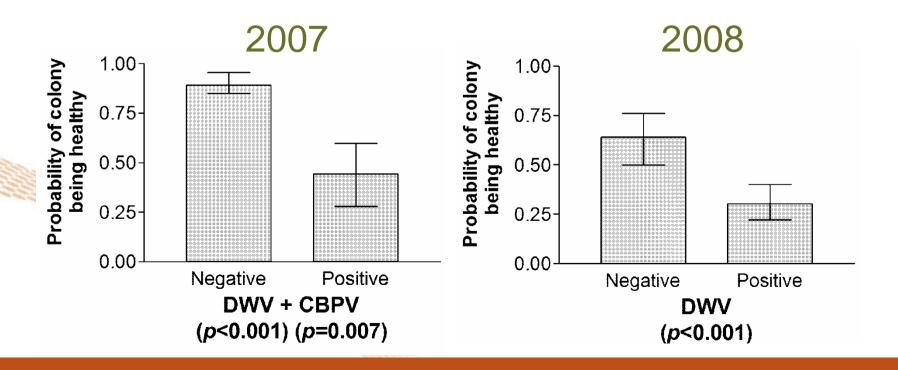






## Parasites as predictors of health

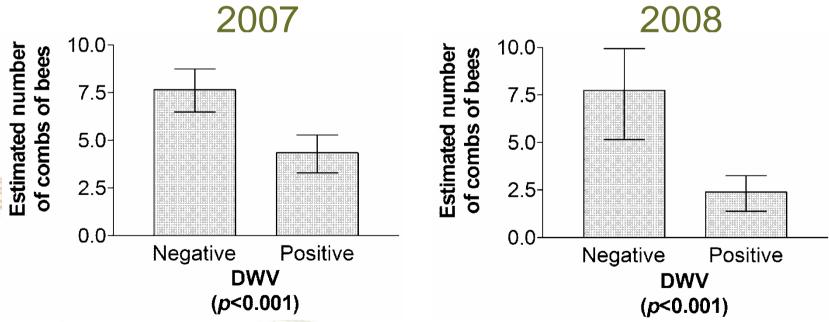
 Multiple logistic regression completed to investigate which pathogens may influence colony health





## Parasites as predictors of health

 Multiple <u>linear</u> regression completed to investigate which pathogens may influence colony health without forced groups



Correlation does not equal causation!



## Colony loss project 2008

- DWV the ONLY significant risk indicator of weak/lost colonies - DWV half the size
- DWV Close association with Varroa
- Biggest problem for BK in England and Wales
   Varroa destructor and its management
  - Resistance to Pyrethroid treatments
  - Few alternative treatments that are as easy to use or as effective
- Possible future issue Nosema spp



#### **National Bee Unit**

## **Contacts Head of Unit**

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Further Information - (BeeBase)

Nationalbeeunit.com