

Diagnosis of Nosemosis in a Portuguese Reference Bee Pathology Laboratory



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Introduction

In recent times, Nosemosis was thought to be caused by the specific protozoan *Nosema apis*, and is widespread in European countries including Portugal. Since then, in most cases there are no clear symptoms. Therefore, the diagnosis of this disease can only be confirmed in the laboratory. The Bee Pathology Laboratory from the Agrarian Superior School of Bragança (ESAB) is located in Trás-os-Montes e Alto Douro province, formed in collaboration with the Apicultural Association of Montesinho Natural Park (AAPNM). It was certified by the Portuguese Veterinary Authority in the 2006.

Results

From the diagnostic records of bee samples received between January 2007 and April 2008 we can show that the majority of samples submitted to this Laboratory (Figure 1) are positive samples. The results also suggest that the Nosemosis is the most prevalent disease (66.3 and 53.3% in each of year) (Figure 2) with clinical positive cases in almost all months of the year (Figure 3).

Conclusions

A related *Nosema* species from Asia, *Nosema ceranae*, has recently been identified as causing Nosema disease in European honeybees. However, both disease species cannot be differentiated using the present routine microscopic examination in our laboratory. The question of whether colony losses in Portugal, can probably be attributed to *Nosema ceranae* is intended to be cleared up in the future with the implementation of more recent diagnostic techniques.



Fig 1. Location and general view of the Bee Pathology Laboratory

Materials and methods

In the laboratory, samples are preserved by freezing them, if there is no possibility of being processed soon. The diagnoses of bee diseases are carried out according to the routine methodologies used by the National Reference Laboratory (LNIV). In order to diagnose protozoan (*Nosema*) diseases a routine examination of a droplet of liquid from the macerated abdomen of bees is taken and prepared to be examined under the microscope.

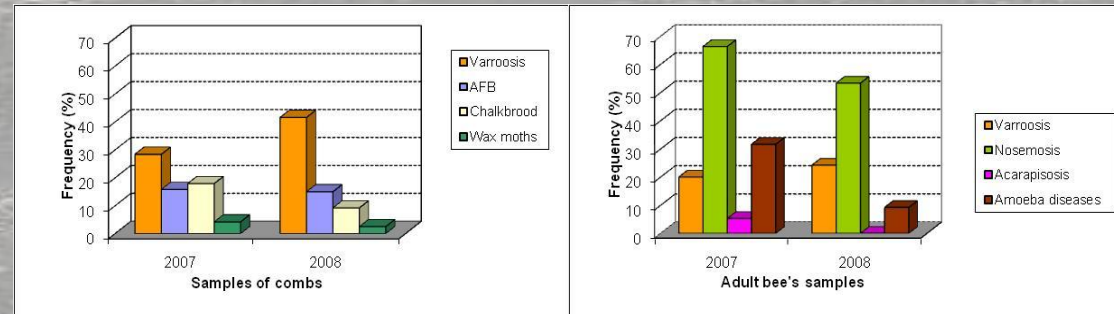


Fig. 2 Diagnosis of bee samples

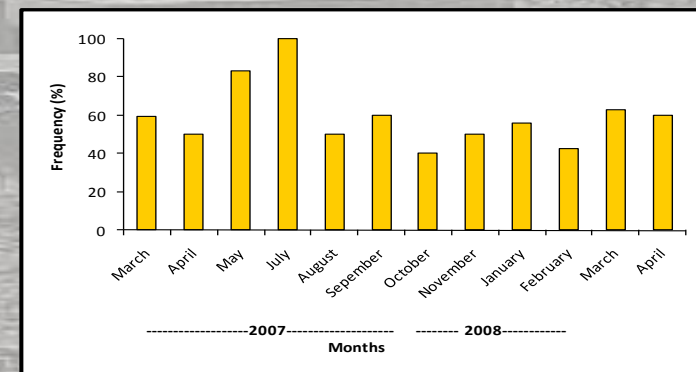


Fig. 3 Relative frequency of positive samples to Nosemosis