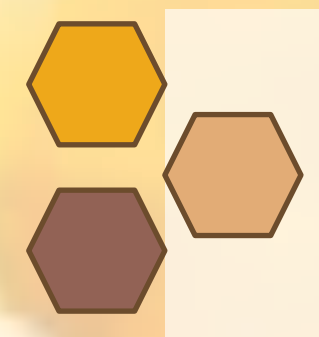


Implication of infectious agents and parasites in the Colony Collapse Disorder of the bee *Apis mellifera*

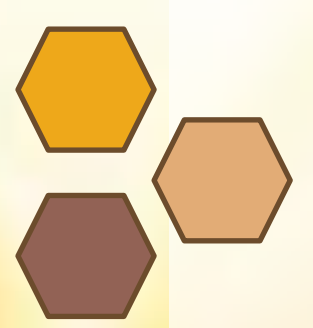


INTRODUCTION

The *Apis mellifera* bee is a pollinator with a very important role and it is indispensable for the growth of the productivity of some agricultural crops.

In the last years there is the worry for the increasing loss of mellifera bee colonies all over the world.

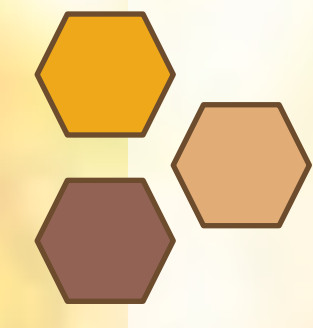
The CCD (Colony Collapse Disorder) is a sudden death of bee colonies and, in many cases, swarm abandonment.



OBJECTIVES

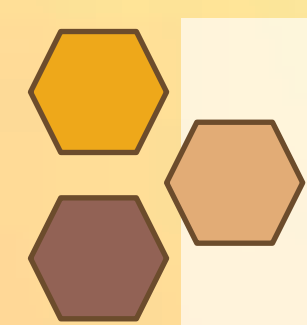
To make a bibliographical research and determine the causing agents associated to CCD.

To know the actual situation in Spain



METHODOLOGY

A bibliographical revision has been made with the subsequent synthesis of information. In the end, the most important concepts have been developed.



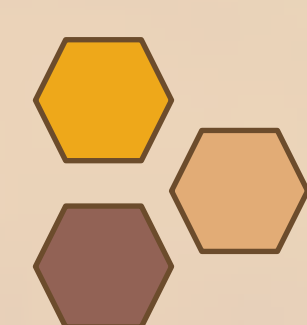
RESULTS

The more evident causing agents regarding a relation with CCD are: *V. destructor*, *N. ceranae*, *N. apis*, *A. woodi* and the neonicotinoids.

In Spain, the prevalence of the *Nosema ceranae* mite has grown, transforming itself in one of the most implicated facts regarding the swarms depopulation.

Varroa destructor is also directly implicated with this syndrome, having a high prevalence of the korean haplotype in our country.

N. apis and *A. woodi*, being also contributive to the colony loss, don't have such a relevant role as the previous ones.



CONCLUSIONS

Nowadays there are no unified conclusions about what exactly causes the decrease of mellifera bee population.

There are evidences of some causes that are directly implicated with this syndrome, but couldn't have been concluded as a unique or indispensable causing agent.

The world phenomenon of massive bee colony loss is, probably, caused by different factors that produce similar symptoms through synergistic actions between different agents.