

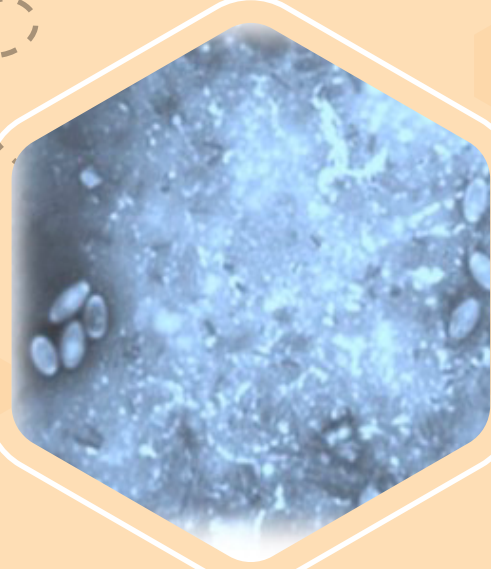
BIOSECURITY MEASURES IN BEEKEEPING | NOSEMOSIS

Detection of Nosemosis

Identify nosemosis clinical symptoms

Differentiating *Nosema apis* (Type A: fecal spots, crawling bees, winter weakness) from *N. ceranae* (Type C: subtle population decline, no dysentery, year-round vigor loss) is crucial. Lab diagnosis focuses on % infected bees (>50% interior bees can predict colony death).

Early detection ensures overwinter survival and productivity through targeted management.



step 1

It is essential to clearly differentiate between type A nosemosis (*Nosema apis*) and type C nosemosis (*Nosema ceranae*), as they present distinct clinical signs and disease progression.



step 2

Infection with *N. apis* typically causes visible fecal spotting on the hive entrance and combs, along with trembling, crawling bees and post-winter colony weakening.

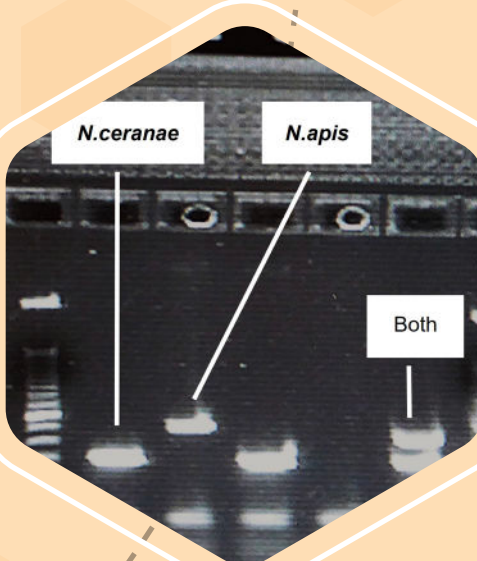
In milder cases of *N. apis*, the only noticeable sign may be a reduction in honey production without other obvious symptoms.



step 3

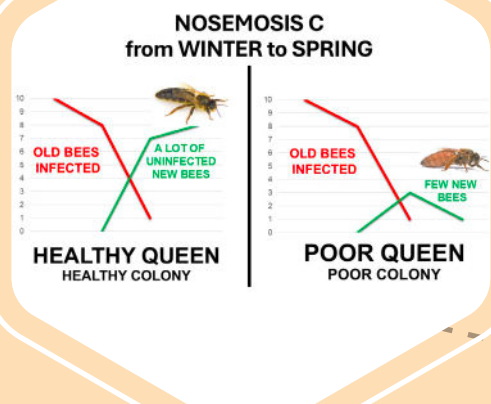
In contrast, *N. ceranae* is characterised by progressive depopulation, reduced productivity, and a marked lack of colony vigor even under good flowering conditions.

A key difference is that *N. ceranae* infections do not show fecal spotting or the presence of dead, trembling, or crawling bees at the hive entrance.



step 4

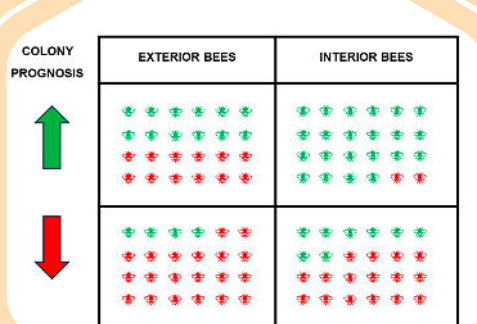
When nosemosis is suspected, diagnosis must be confirmed through laboratory analysis to know the species present and the percentage of infected bees both interior bees and foragers.



step 5

In winter, older bees tend to be highly contaminated, but if there are many uninfected young bees, the colony can survive.

In spring, a strong queen produces many young bees that reduce infection and compensate for losses.



step 6

The percentage of infected bees, rather than the number of spores, is the most reliable indicator of health status.

A low percentage of infected interior bees is a good prognosis.



Our Consortium

