The longhorn beetle(*Cerambyx cerdo* L.), vulnerable or pest?

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Approach

Introduction

- Is a saproxylic species associated with dead wood and old trees with bad physiological state[2]
- Is a vulnerable species by Berne Convention, Council Directive 97/62/EC and IUCN Red List of Threatened Species
- Is considered secondary pest [4]
- Distribution: *(Figure 1. and 2)*

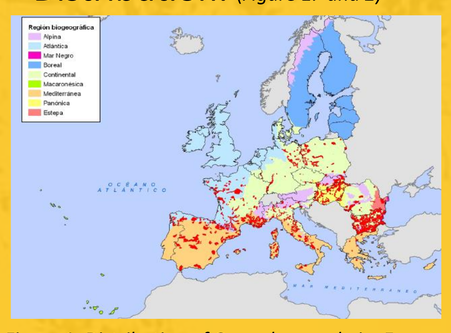


Figure 1. Distribution of Cerambyx cerdo in Europe. (Source: H EU Wildlife Sustaintable Farming project, 2009)

Figure 2. Distribution of Cerambyx cerdo in Spain. (Source: EU Wildlife Sustaintable Farming project, 2009)

Biological cycle

Figure 3. Pupa. Source: http://www.naturefoto2000.com

In 15 days the adults have to mate → 3-5 years to complete the cycle → The eggs hatch out in 10 days → Larvae feed on the xylem → Adults stay in the tree until there are favorable condition

Objective

Analyze the situation of *Cerambyx cerdo* in different countries of Europe because on determinate areas this species are decreasing (North Europe); while in other areas, like the Mediterranean Region, are in high population density. Here we studied this situation and try to give a control method in those areas of Southern Europe. In addition, a forestry technical card is created to distribute to sector experts.

Symptomatology and damage

Resistance Mechanisms by the tree

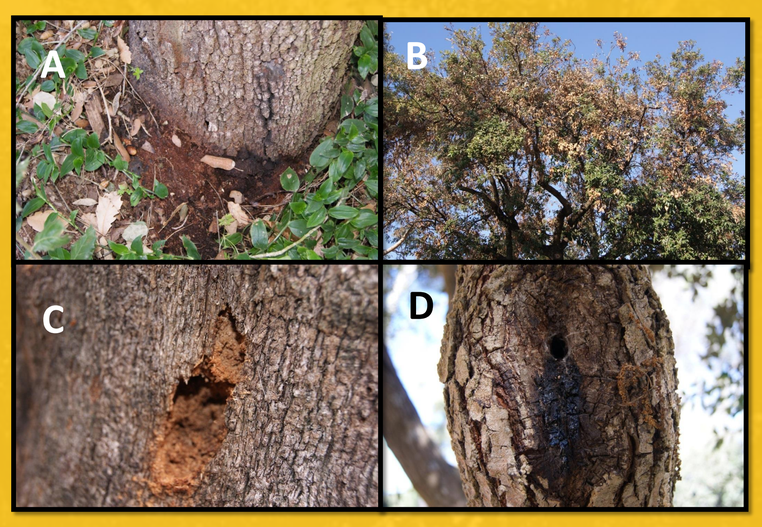
Primary disease/pest

- ↓ turgidity→ wilting →↓ defensive capacity →↑ susceptibility to *C. cerdo*[4]

Secondary disease/pest

- Compartmentalization of host tissues
  - Lignification of cell walls
  - Internal impervious tissue
- Necrophylactic periderm
- Callus formation in the cambial zone if the injury is quite deep[4]

Damage



A. Sawdust accumulation in trunk base
B. Dry branches and fallen leave
C. Reddish
D. Elliptic exit holes (20mm)

Controversy

Like a pest?

South Europe → Control Strategies →

- Preventive strategies→ Silviculture[5]
- Active strategies
  - Physical measure
  - Chemical measure[1]
    - Repellent and inhibitor insecticide of natural origin (Botanical and Bacterial)
    - Inorganic insecticide (minerals)
    - Chemical synthesis formulation
  - Biological control
  - Biorational measure→ attractive and massive capture[5]

Like vulnerable?

North Europe → Conservation Strategies →

- Keep or restore it like "favorable conservation state"
- Designed areas under Nature 2000
- Maximize microhabitat diversity by forestry strategies
- Keep natural or seminatural forest, increase dry wood and flock[3]

Conclusion

- Change the protected state for *Cerambyx cerdo*
  → serious problem in Mallorca
- Determinate the specific volatile organic compounds that attract the insect
- In South Europe→ Pest→ Silviculture
- In North Europe→ Vulnerable→ measures to promote the development of the species
- Alteration of biotic and abiotic factor will affect *C. cerdo*

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