NOVEL ECOLOGICAL AND SELECTIVE REPELLENT AGAINST RED PALM WEEVIL (RHYNCHOPHORUS FERRUGINEUS)

PATENTED TECHNOLOGY

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ABSTRACT

The Phytopathology research group of the University of Alicante has discovered two volatile organic compounds (VOC1 and VOC2) that act as repellents of the red palm weevil (*Rhynchophorus ferrugineus*) in a selective, specific and highly effective way. By incorporating these compounds into any formulation, biological control of the pest is achieved in a sustainable and environmentally friendly way.

Among the different sources for obtaining VOC1 and VOC2 are the entomopathogenic fungus *Beauveria bassiana*, as well as chemical synthesis, which allows a very economical production cost of VOC1 and VOC2. These compounds can be integrated in fast or slow release devices, and they have applications in agrobiotechnology, agriculture and horticulture, both for the biological control of adult red palm weevil insects, and to prevent infections in palm orchards or gardens with palm trees as ornamental species. Companies interested in acquiring this technology for its commercial exploitation are sought.

TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

ADVANTAGES OF THE TECHNOLOGY

- Novel **selective** and **specific** treatment against the adult pest of the **red palm weevil** (*Rhynchophorus ferrugineus*).
- **Effective** and **efficient** compounds against this pest as a **repellent**.
- These are **natural compounds** for the **biological control** of the red palm weevil.
- A formulation can be developed that allows **effective** and **sustainable control** of the pest.
- One of the sources for obtaining the active ingredients (VOC1 and VOC2) corresponds to the **entomopathogenic fungus *Beauveria bassiana***, so it is an **environmentally friendly technology.**
- Another source of the active ingredients (VOC1 and VOC2) is chemical synthesis, so the **production cost** of these repellent compounds is **very low**.
- The composition **prevents the invasion** of the red palm weevil **in palm species** (palm orchards or other palm groves that are World Heritage Sites, and public or private gardens).
- Allows **large-scale application** and **dosage**.

INNOVATIVE ASPECTS OF THE TECHNOLOGY

A **novel red palm weevil repellent composition** has been developed based on volatile organic compounds detected in the entomopathogenic fungus *Beauveria bassiana*.

This invention is characterised by the fact that *it is not necessary to use the microorganism* in its entirety, but **simply two of its metabolites** (VOC1 and VOC2), which **simplifies the production process of the formulation**, since they can be obtained by chemical synthesis at a **very low cost**.

Moreover, it is an **environmentally friendly biological control** strategy **specific** to the pest *Rhynchophorus ferrugineus*.

MARKET APPLICATIONS

This technology is framed in the field of **agrobiotechnology**, **agriculture** and **horticulture**. In particular, it concerns a novel composition containing volatile organic compounds as **repellents** of the **red palm weevil** (*Rhynchophorus ferrugineus*).

This invention finds its **application** in:

- **Biological control** of adult insects of the red palm weevil.
- **Prevention** of infections of red palm weevil in palm orchards or gardens.

COLLABORATION SOUGHT

It is looking for companies interested in acquiring this technology for **commercial exploitation** through **patent license agreement**.