List of scientific publications on Vibration Communication in Cicadellids


Interesting links on Vibration Mating Disruption

TREMOS - The Vibration Mating Disruption to control of grape leafhoppers

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**What is TREMOS**

TREMOS is a system of emitters reproducing the communication language of each single target species and broadcasting it in the area to be protected through the crop's trellis.

Leafhoppers communicate between individuals of the same species with vibrational signals that they perceive through the plants on which they live. Frequencies and vibrational sequences are specific to both sexes and species, this uniqueness allows them to recognize and locate each other, and to mate and reproduce.

**How does TREMOS work**

The extensive research done by entomologists of the E. Mach Foundation in S. Michele all'Adige and others (see list of scientific publications) allowed to decode various vibrational communication languages of insects belonging to the family of Cicadellids.

This fundamental research led to identify those key portions of the language that can be effectively reproduced to disturb the most vital part of their communication: the one required to mate for the reproduction of the species.

Each TREMOS emitter plays and broadcast species-specific signals, which interfere with the communication between sexes and thus prevent or considerably delay their mating. This strategy is similar to Pheromones Mating Disruption already widely applied for Lepidoptera.

**How to apply TREMOS**

Each emitter is securely anchored to the poles or wires of the target vineyard and broadcast its signals through the trellis to the plants.

Currently each emitter can broadcast vibrational interference signals over a distance of approx. 50 m along the same row.

**Applications in the field of TREMOS in progress**

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**Applications in the field of TREMOS in progress**

- **San Michele all'Adige**
  - 1.5 hectares (Solar energy)
  - 3 rows (Phenological monitoring)
  - 0.5 hectares (Electrical energy)

- **Dogliani**
  - 1 hectar (Solar energy)