

## Superior combination for Codling moth mating disruption

The University of Neuchâtel, Switzerland, proposes the following technology for licensing

### Keywords

- Pheromones
- Codlemone
- Limonene
- Codling moth (*Cydia pomonella*)
- Orchard pest
- Mating disruption

### Patent status

**“Limonene-containing mating disruptant and mating disruption method using the same”**

- Priority filing CH 01491/11
- Filed 09 Sept. 2011
- Applicant: University of Neuchâtel

## Description of the Invention

### Background

Codling moth (*Cydia pomonella*) is a major worldwide agricultural pest that has become resistant to most insecticides. Mating disruption (MD) is an insecticide-free pest management system: controlled-release of synthetic species-specific pheromones in infested orchards prevents mate-finding and decreases infestation. The identification of codlemone, the main codling moth pheromone product, enabled specific MD protocols. However, their limits in efficacy, especially at high pest population densities, calls for new MD combinations.

### Technology

- Use of a combination of the sex pheromone, E8,E10-dodecadien-1-ol (codlemone), and limonene in MD protocols for combating codling moth infestation in orchard and field crops;
- Limonene is a constituent in essential oils, available commercially and widely used for flavor and fragrance.

### Development status

Performance of a combination of codlemone with limonene tested in a wind tunnel with codling moth males compared to calling codling moth females and to other codlemone combinations used in control protocols.

### Main advantages / innovative features

- Superior efficacy of codlemone + limonene combination compared to codling moth females and to other codlemone plant volatile combinations tested as attractants for codling moth males
- No selection factors for induction of insect resistance
- Low cost, safety and commercial availability of limonene
- Ease of use of the codlemone + limonene combination (adaptable to field infestation conditions)

### Potential applications

- ✓ Mating disruption protocols to combat codling moth infestation of orchard and field crops
- ✓ Mass trapping and monitoring of codling moth populations
- ✓ Development of a dispenser to release the codlemone + limonene combination

### Reference

D. Schmera and P. M. Guerin . Plant volatile compounds shorten reaction time and enhance attraction of the codling moth (*Cydia pomonella*) to codlemone. Pest Management Science, published online October 2011.

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