



## NATURAL BIOCIDES FOR THE CONTROL OF DISEASES IN APICULTURE

100% natural compound without adverse side-effects

*The American foulbrood (*Paenibacillus larvae*) is one of the most severe diseases affecting honey bees. In fact, it's the second plague to generate most economic losses in apiculture and it's distributed globally. It's lethal when attacking larvae and usually generates devastating effects to bee colonies in apiaries. To the date, the only treatment for this disease is incineration.*

### THE TECHNOLOGY

The technology consists in the development of a natural biocide to prevent and treat bacterial infections in honey bee population, such as the ones caused by *Paenibacillus larvae* (American foulbrood), one of the most spread and destructive diseases in the apiculture industry. The product can be easily applied and safe to both the beekeeper and the hives. It has a high yield and doesn't generate bacterial resistance in the long term. It has demonstrated to be effective against *Nosema sp.* And *Melissococcus plutominus* as well.

### DEVELOPMENT LEVEL

The biocide has been validated through lab and field tests, which took place in national apiaries.

### LEAD RESEARCHER

Jessica Martínez, PhD.

### INTELLECTUAL PROPERTY

Patent pending.

### MAIN BENEFITS AND ADVANTAGES

The use of the compound doesn't generate resistance (as it occurs when using antibiotics); doesn't leave toxic residues on the honey; is safe and easy to use by the beekeeper; prevents the germination of *P. larvae* spores, delaying the growth of pathogenic microorganisms; is selective and doesn't generate adverse side-effects in bees and their larvae throughout all of their development stages.

### APPLICATIONS / USES

Developed to be used in the apiculture industry both for the control and the prevention of diseases caused by *Paenibacillus larvae* (American foulbrood).

### TECHNOLOGICAL OFFER

- Licenced technology, available for sublicensing.

### CONTACT

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