INDUSTRIAL PRODUCTION OF A PREDATOR FOR BIOLOGICAL PEST CONTROL OF APHIDS

TECNOLOGÍA PATENTADA

LICENCIADA EN EXCLUSIVA

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RESUMEN

A Spanish research group has developed an optimized protocol of breeding for a predator insect, *Sphaerophoria rueppellii*, for biological control of aphids pest, its natural enemy.

It is especially efficient in Mediterranean climates, where other predators cannot resist more than 25 °C.

This technique avoids using pesticides, and it is indicated for agricultural, urban and garden use.

The research group is looking for companies interested in licensing this technology.



DESCRIPCIÓN TÉCNICA

The only known species of sirphid that is industrially produced is *Episyrphus balteatus* (Eba, from now on). However, this procedure cannot be applied in the breeding of other similar species. It is necessary to develop a specific method to produce another of these species in industrial scale.

A Spanish research group has developed a procedure for artificially breeding individuals of different generations of *Sphaerophoria rueppellii* (Sru, from now on) for biological control of aphids pest, its natural enemy. This methodology include from the egg, passing through three larval stages and physiological processes of pupation and metamorphosis to adult. To achieve this, they have optimized all conditions and diet for each phase of their life cycle (larval growth, adult maturation, reproduction and oviposition), including:

- Diet of the larvae and adults.

- Optimum temperature, moisture and brightness ranges.





Sphaerophoria rueppellii larvae y Sphaerophoria rueppellii adult, respectivamente.

By using this particular procedure of artificial breeding on an industrial scale, optimum efficiency has been achieved, considering

the limited space. It is characterized by:

- Reduction of the duration of the life cycle, while achieving the greatest number of generations in the shortest possible time.

- Optimization of the fecundity and fertility.

VENTAJAS Y ASPECTOS INNOVADORES

ADVANTAGES:

- Reduction of the pesticides amount used in pest control of aphids, both vegetable crops and in gardens, and in urban areas where pesticide use is increasingly restricted by law.

- Species Sru is adapted to conditions of the Mediterranean area, including greenhouse, and its effectiveness in the media has been proved.

- Quality Control (under the rules of the International Organisation for Biological and Integrated Control), to ensure the viability and product quality may be applied.

INNOVATIVE ASPECTS:

- Eba does not effectively control aphid pests in Mediterranean climates. Sru has proved to have the greatest potential for control.

- First time this predator species is breeded in a laboratory.

ESTADO ACTUAL

This technology is available for demonstration – field tested.

APLICACIONES DE LA OFERTA

The larvae of the species *Sphaerophoria rueppellii* (Sru) is predator of more than 40 species of aphids. This wide range of predation, with the specific nature of their diet (aphids only), make this species the ideal candidate for biological control of aphids in the Mediterranean.

Detailed Market Application:

- Agriculture.

- Forestry.

- Fishing.

- Animal husbandry.

- Related products.

COLABORACIÓN BUSCADA

The group is looking for companies interested in acquiring the technology for commercial exploitation.

DERECHOS DE PROPIEDAD INTELECTUAL

This technology is protected by patent:

- Application number: P200802497.

- Application date: 27/08/2008.

SECTORES DE APLICACIÓN (3)

Agri-food and Fisheries
Biodiversity and Landscape
Pollution and Environmental Impact