

# NEW FORMULATION FOR BIOLOGICAL CONTROL OF PESTS AND/OR DISEASES IN AGRICULTURAL CROPS

**P** PATENTED TECHNOLOGY



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## ABSTRACT

The Phytopathology research group of the University of Alicante has developed a new simple method for the production of formulations for use in agriculture and veterinary medicine.

The key to this formulation is the method used to obtain coacervates, which involves the encapsulation of spores (conidia and/or chlamyospores) of a fungus used for biological control in agriculture in chitosan.

The formulation can be used as a biofertiliser, biostimulant and/or as an inducer of defence mechanisms in agricultural crops.

This technology is developed at laboratory level and is protected by a patent application. The research group is looking for companies with the capacity to commercially exploit the technology.

## TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

### MAIN ADVANTAGES OF THE TECHNOLOGY

This technology has the following advantages:

- It makes use of chitosan as the main component, a natural biopolymer, thus avoiding the use of chemically synthesised nematicides, many of them being toxic and some even banned;
- This is a simple process, thus avoiding more complex and costly encapsulation processes;
- If the fungus colonises the root of the plants, it prevents other phytopathogenic fungi from doing so;
- Chitosan added to the soil favours the growth of the fungus *Pochonia chlamydosporia* and also causes the plant to activate its defence systems which joins the action of the biological control agent;
- Chitosan promotes crop growth at low doses;
- The addition of chitosan in the form of coacervates results in a slow release of chitosan and higher doses of concentration can be applied which would not be harmful to plants as is the case when added in liquid form.

### INNOVATIVE ASPECTS

The main innovative aspect of the technology is the method used for the formation of chitosan coacervates and fungal spores and their use:

- In agriculture, as a tool for the control of pests and/or diseases in agricultural crops caused by nematodes and/or insects, and;
- In veterinary medicine, for the treatment of intestinal nematodes in animals.

## MARKET APPLICATIONS

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The present invention falls within the field of **agrobiotechnology** and, in particular, refers to the production of coacervates from a polymer for practical application against pests and diseases in plants.

The coacervates produced by the method described above have application in **agriculture**, more specifically, in the control of pests and/or diseases in agricultural crops caused by nematodes, insects and combinations of the above.

Additionally, the coacervates described above can be used as **biofertilisers**, **biostimulants** and/or as **inducers of defence mechanisms in agricultural crops**.

Finally, these coacervates could also be used in veterinary medicine, more specifically, for use in the treatment of intestinal nematodes in animals.

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#### COLLABORATION SOUGHT

The research group is looking for companies interested in acquiring this technology for **commercial exploitation** through:

- Patent license agreements.
- Technical cooperation (R&D projects) to adapt the technology to the needs of the company.
- Proof of concept projects
- Etc.

**Company profile searched:**

- Biofertiliser manufacturers.
  - Manufacturers of bio-stimulants.
  - Manufacturers of anti-parasitic medicines for animals.
  - Companies in the biological pest control sector.
  - Companies in the agrobiotechnology sector.
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