Biological control of plant pathogens affecting crops

VNIVERSITAT DE VALÈNCIA

I+D RESULT

Patent

Knowledge area

- Agriculture
- Microbiology
- Biotechnology
- Environment

Collaboration

- Technology available to licensing
- Other collaborations may be considered

Ref. OTRI
201250R-González, E.

Procedure for biological control of bacterial wilt caused by *Ralstonia solanacearum* by the use of specific bacteriophages.

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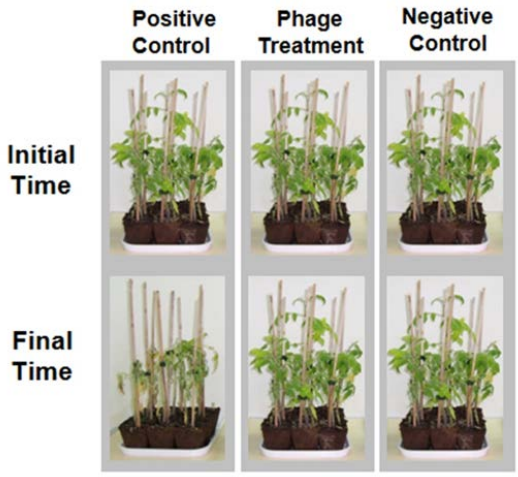
Background:
The bacterial species *Ralstonia solanacearum* causes bacterial wilt worldwide in numerous plant species, many of them of agronomic interest such as potatoes and tomatoes, producing serious economic losses in the agricultural sector. Therefore, this bacterium is considered a quarantine organism in the European Union, where it is subjected to strict measures regulated by European Directives. *R. solanacearum* control by chemical or physical treatments is usually not effective, expensive and with severe environmental impact. For this reason, new biological control methods which are effective and environmentally friendly are especially needed, such as the use of specific lytic bacteriophages against *R. solanacearum*.

The invention:
Researchers of the University of Valencia and the Valencian Institute of Agricultural Science Research have isolated and patented new specific lytic bacteriophages against *R. solanacearum*, as well as the procedure associated with their use in the biological control of bacterial wilt. By way of this method, it becomes possible to control *R. solanacearum* populations, reducing bacterial wilt in crops through an effective and environmentally friendly biological treatment.

Applications:
The main application of this invention is in the field of Agriculture, particularly in the biological control of plant pathogens in plant species of agronomic interest.

Advantages: The main advantages provided by this technology are

- Biological treatment for control of bacterial wilt caused by *R. solanacearum*, as an alternative to ineffective chemical or physical treatments.
- High specific bacteriophages against *R. solanacearum*.
- Bacteriophages harmless to other organisms, including beneficial microbiota of crops to be protected.
- Easy applicability, through irrigation water.
- Less significant environmental impact than chemicals, for which many pathogens have developed resistance.
- Minor legal restrictions for use and applicability where control with chemicals is prohibited.



Example of biological control of bacterial wilt caused by *Ralstonia solanacearum* in tomato plants treated or not with new patented specific lytic bacteriophages against this pathogen.

OTRI oficina de transferència de resultats d'investigació

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