

PSEUDOMONA SAVASTANOI PV. SAVASTANOI

# TUBERCULOSIS IN OLIVE GROVES



Specialists in wood disease control



**BACTERIAL CONTROL IN  
OLIVE GROVES**

ADVANCED AGRICULTURAL TECHNOLOGIES

# Causal agent

*Pseudomonas savastanoi* pv. *Savastanoi*.

Current research in different centres indicates that some of the strains of *Ps.syringae savastanoi* contain a plasmid (extrachromosomal genetic material) which is able to introduce the virulence characteristic into the plant, and therefore it is these strains which cause the dreaded olive tuberculosis (Research at the University of Malaga).

# Extent of the disease

What is commonly known as ``olive tuberculosis`` is one of the most important diseases of this crop worldwide, causing great losses both in production and in the quality of olive oil.



# Its serious evolution in intensive and super-intensive environments.

In order to be more competitive and profitable, olive cultivation is undergoing conversion and growth to intensive and super-intensive frames, which allow the farmer to save on production costs. The question concerning olive tuberculosis is that mainly varieties sensitive to the development of this disease are being used, due to the planting frame itself, there is less aeration in the plantation and the work itself in these frames generates a greater number of wounds that are entry routes for the pathogen, so all this makes this one of the main diseases to combat in relation to the evolution that the olive sector is undergoing.



# EPIDEMOLOGY

This disease produces an alteration of the vascular tissues of the plant leading to the formation of nodes or galls that prevent the transfer of substances through these conduits, producing a progressive wilting of the plant as well as a reduction in vigour, affecting the size of the stems as well as alterations in the fruit.

The bacteria penetrates the plant through wounds produced normally during pruning, thinning, frost, etc., and its propagation increases during wet periods due to rain. This bacterium can be found on the surface of the leaves, in the nodes or galls and colonise the internal tissues from these places through the wounds.

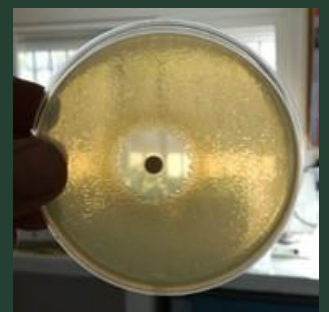
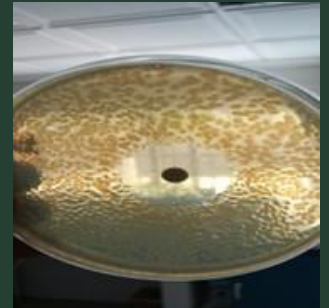
# Tavan programme against pseudomonas bacteria

Due to the increased requirements of the EEC regarding the levels of copper in the products to be marketed, the University of Chile (Faculty of Agronomic Sciences) promoted an investigation to reduce the levels of copper by testing TAVAN products as an alternative for bacterial control.

The results were that TAVAN biotech products had a positive effect on the reduction of this type of infection in woody plants by bacteria of the *Ps.syringae* family because they produced the following reactions in the plant:

- \* Increase in the plant's defences, by activation of the immune system conditioned by specific genes.
- \*Increased rigidity of the cell wall.
- \*Decrease in oxidative stress
- \*Synthesis of secondary metabolites
- \*Competition for physical space against the pathogen
- Competition for nutrient environment against the pathogen
- \*Siderophore effect
- \*Siderophore effect (uptake of iron) preventing its use by the pathogen.
- \*Strengthening of plant structures, increased development due to an increase in substances such as auxins and gibberellins.
- \*Synthesis of lipopeptide complexes such as surfactins, phengicins, bacitracins, etc. with inhibitory activity against the pathogen.
- \*Synthesis of substances such as amylases, lipases.

All these actions are demonstrated both in the laboratory and in the field.



## Bactofus® application

The ideal time to apply it is whenever there is a wound on the plant, which would correspond to post-harvest, after pruning work and mainly in the event of frost, since, as we mentioned earlier, this pathogen takes advantage of any wound to propagate and colonise the plantation.



From Tavan we urge to prevent and act in time and shape against this type of disease, that is why we are always supporting the farmer to avoid overcosts and production losses, all supported by a range of products that are the result of continuous research and innovation.