



Fungicide activity of Bestcure® against *Botrytis* in tomato crops

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Introduction

Botrytis cinerea, also known as grey mould, is a polyphagous fungus of economic importance that affects many agricultural crops, among them, tomato crops. The affected parts of the plant show characteristic white-greyish velvet on the surface, corresponding to its fruiting bodies and spores.

The optimal germination conditions of the spores is around 15-20°C with 4-6 hours or more of constant wetting. The mycelium requires a humid and moderately cold climate (18 to 23°C) to grow and expand the infection. The infection usually enters through senescent plant material, such as fallen petals, or by wounds in the plant, whether produced naturally or by cuts due to pruning.

In tomato crop, the incidence is more often in greenhouses, on fields with ventilation problems or in humid climates.

Botrytis cinerea in tomato has a weakness for flowers and fruits. Petals are particularly susceptible, being the origin of the fruit infection. Fruits show halos or vitreous rings, and it can produce a soft rotting covering the upper half of mature fruits.

The chemical control of these diseases usually consists of repeated applications alternating Fludioxonil, Ciprodonil, Clorotalonil, Captan and Fenhexamid. The new regulations for the use of chemical products and the growing demand for residue-free products require effective and sustainable alternatives such as crop rotation and fallow, but these are not effective for *Botrytis sp.* The use of products based on natural source substances, such as plant extracts, has become an effective tool to reduce the damage caused by some phytopathogenic fungi.

BESTCURE® is a stabilized extract from citrus fruit that has demonstrated a high biocidal capacity against phytopathogenic fungi and bacteria such as *Plasmopara viticola*, *Xanthomonas spp.*, *Alternaria sp.*, *Pseudomonas syringae* amongst other. BESTCURE® is also certified for its use in organic farming (BCS ÖKO, CAAE) and it respects natural enemies and pollinators.

Materials and Methods

For the evaluation of the fungicidal activity of Bestcure® against *Botrytis cinerea* in tomato, three doses of the product (1L/ha, 1.5L/ha, 2.0L/ha) were tested in open field and it was evaluated the phytotoxicity at a dose twice the maximum recommended (4L/ha). The trials were located in Fomeque and Caqueza, Cundimarca, Colombia.

Two applications were made at the onset of symptoms, and 8 days later. At 4, 8 and 12 days after the second application, the number of leaves and flowers (total and affected by *Botrytis sp.*) were counted. For the evaluation of phytotoxicity a visual evaluation was made according to the EWRC toxicity scale, from 0 to 5.

Results and Discussion

In both tests, Bestcure® showed a high fungicidal activity against *Botrytis cinerea* observing at the doses from 1,5L/ha to 2L/h a significantly lower leaf incidence compared to the control without application. The significantly lower incidence in flowers treated with 1,5L/ha and 2L/h of Bestcure® is relevant, since it can be the origin of fruit infection, causing direct damages and serious economic losses in the harvest.



Fig. 1. Tomato leaves infected by *B. cinerea*.



Fig. 2. Tomato fruits affected by *B. cinerea*.



Bestcure® is a product with microbicidal effect against *Botrytis cinerea* and other phytopathogenic fungi and bacteria, formulated with citric extract. It is also a natural plant defense activator of plants. Thanks to these trials, on September of 2016, this product was registered in Colombia with the brand *RutaStar®*



For more information about these trials please contact

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For more information about Bestcure®:

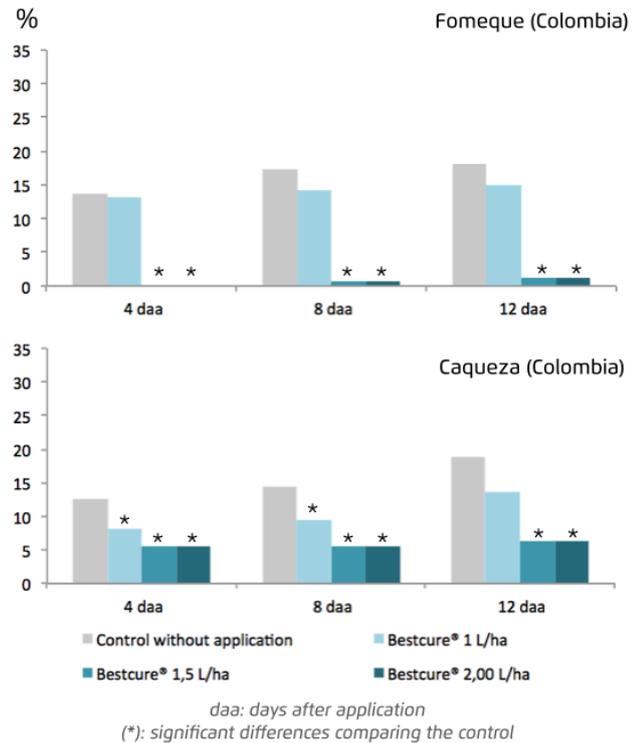
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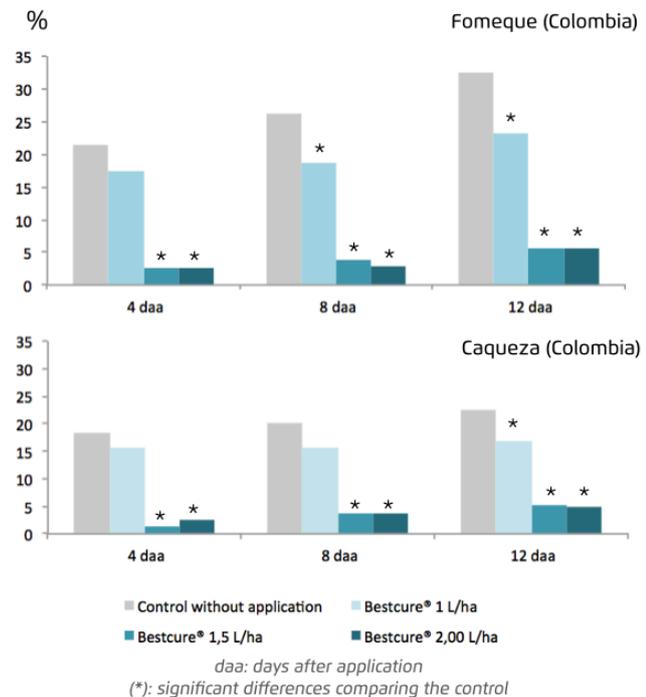
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Graph 1. Percentage (%) of *Botrytis* incidence in FLOWERS.



Graph 2. Percentage (%) *Botrytis* incidence in LEAVES.



Conclusions

- **BESTCURE®** has a high fungicidal activity against the fungus *Botrytis cinerea* in tomato.
- Plants of tomato treated with 1,5L/ha and 2L/ha dose of **BESTCURE®** presented very low values of flower incidence of disease in both trials, showing a curative effect.
- No phytotoxic symptoms were observed in tomato plants treated at a double dose of the maximum recommended (EWRC = 0).