

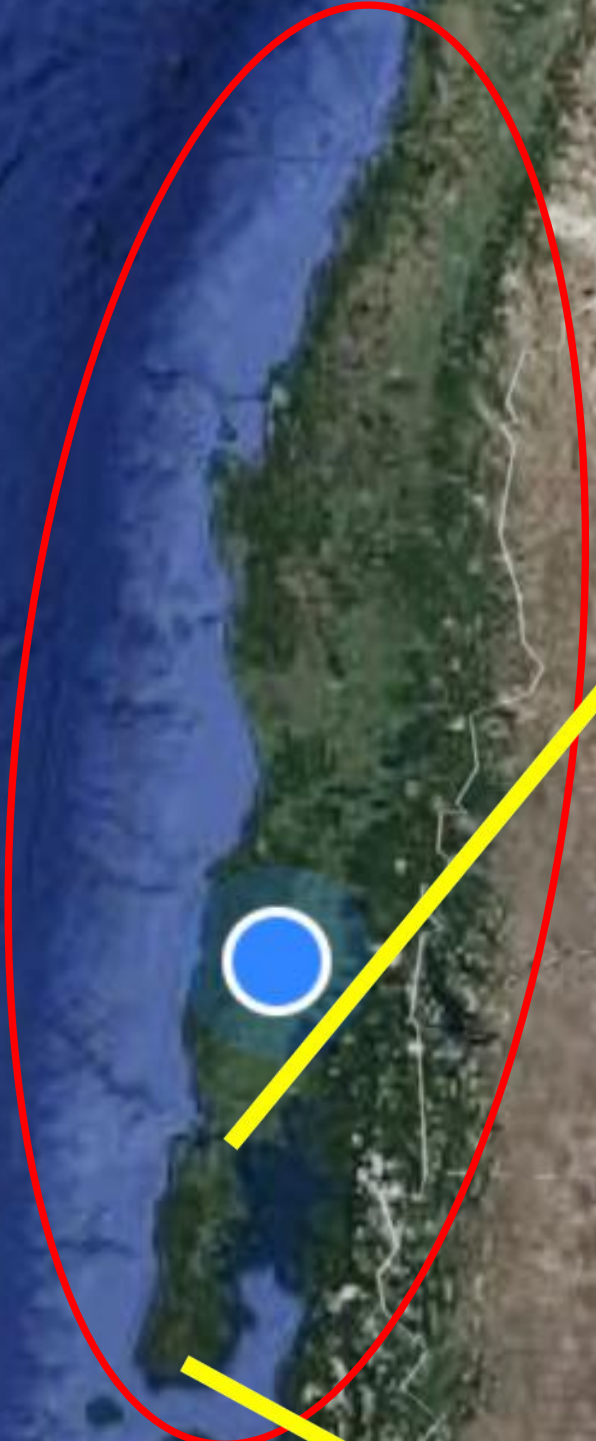
“Evaluation of susceptibility of *Solanum tuberosum* Chilotanum landraces to late blight as part of an IPM strategy in Chiloe Island, Chile.



**I. Acuña, L. Barra, A. Bermúdez, S. Mancilla, C. Sandoval**  
**INIA Chile**



Chile



Ancud

Chiloé

Castro

Isla Grande de Chiloé

Quellón

Chaiten

Parque Nacional Corcovado

Futaleufu

El Bolsón

Lago Puelo

Trevelin





# Late blight *Phytophthora infestans*



- ✓ It is the most important disease in Chiloé.
- ✓ Chiloé is a center of origin of *Solanum tuberosum sp tuberosum* (Chilotanum group)
- ✓ Very favorable conditions for the disease development.
- ✓ Small farming, mainly women.
- ✓ Organic production???
- ✓ Work related to FONTAGRO Project



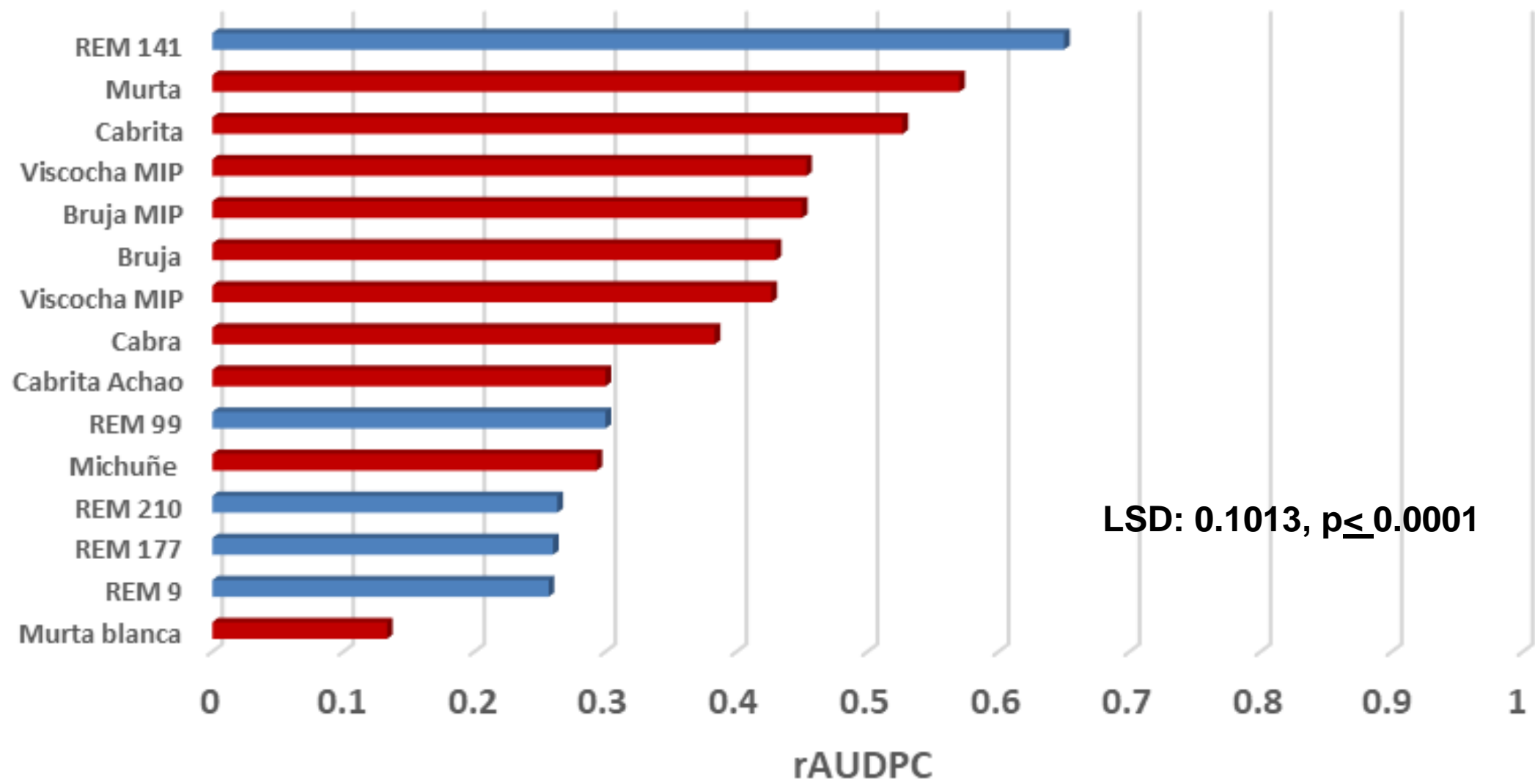
# Methodology

- **Variety susceptibility**
- **Detach leaf test**
- **Chemical control**
- **Alternative products and biocontrol**

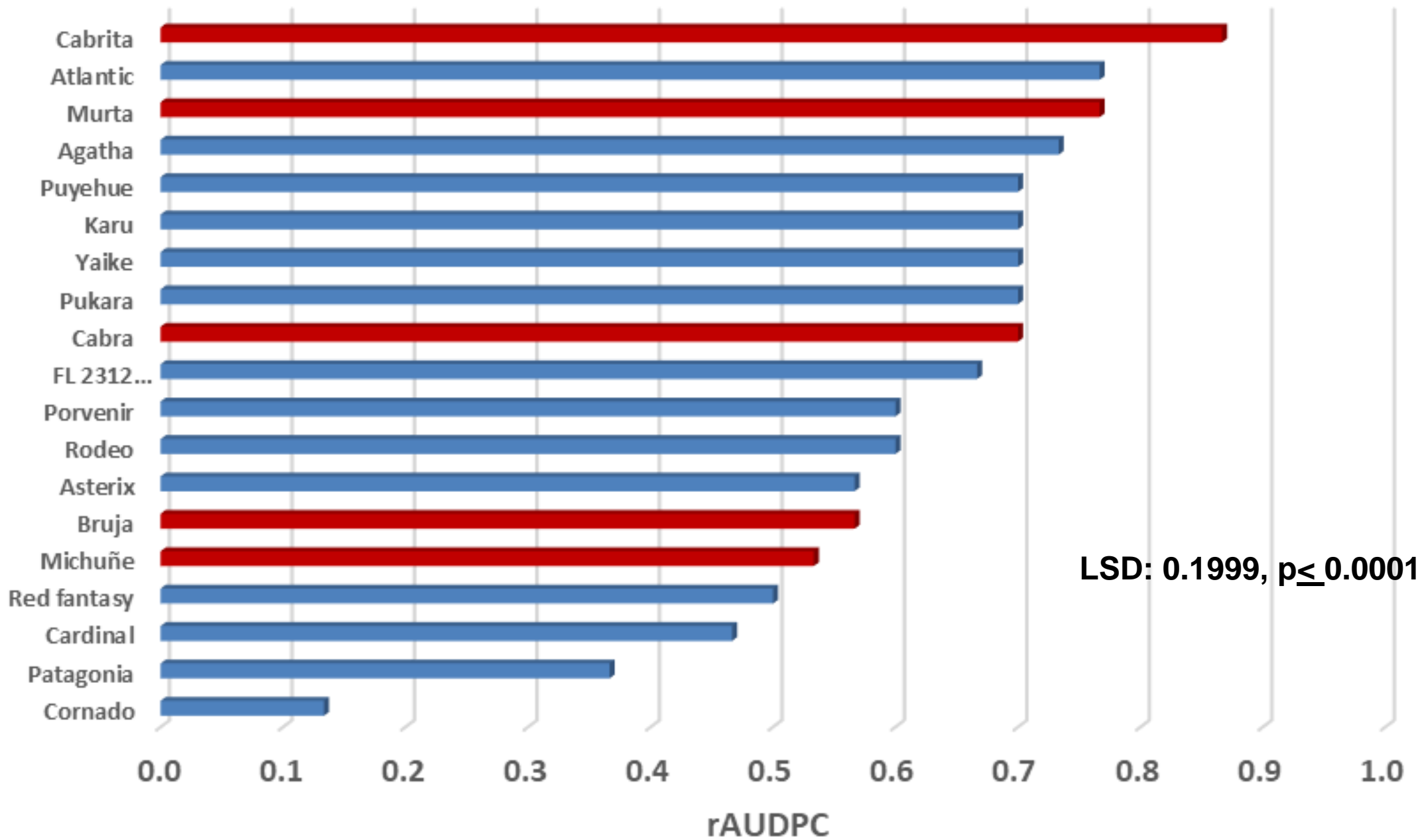




## Variety resistance evaluation, INIA Chiloé 2019-20



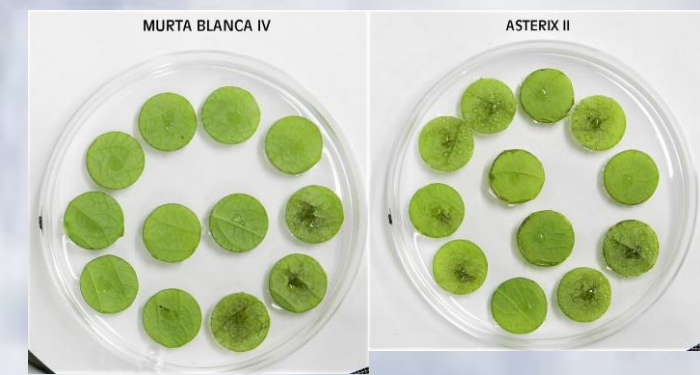
## Variety resistance evaluation, INIA Remehue, 2020-21



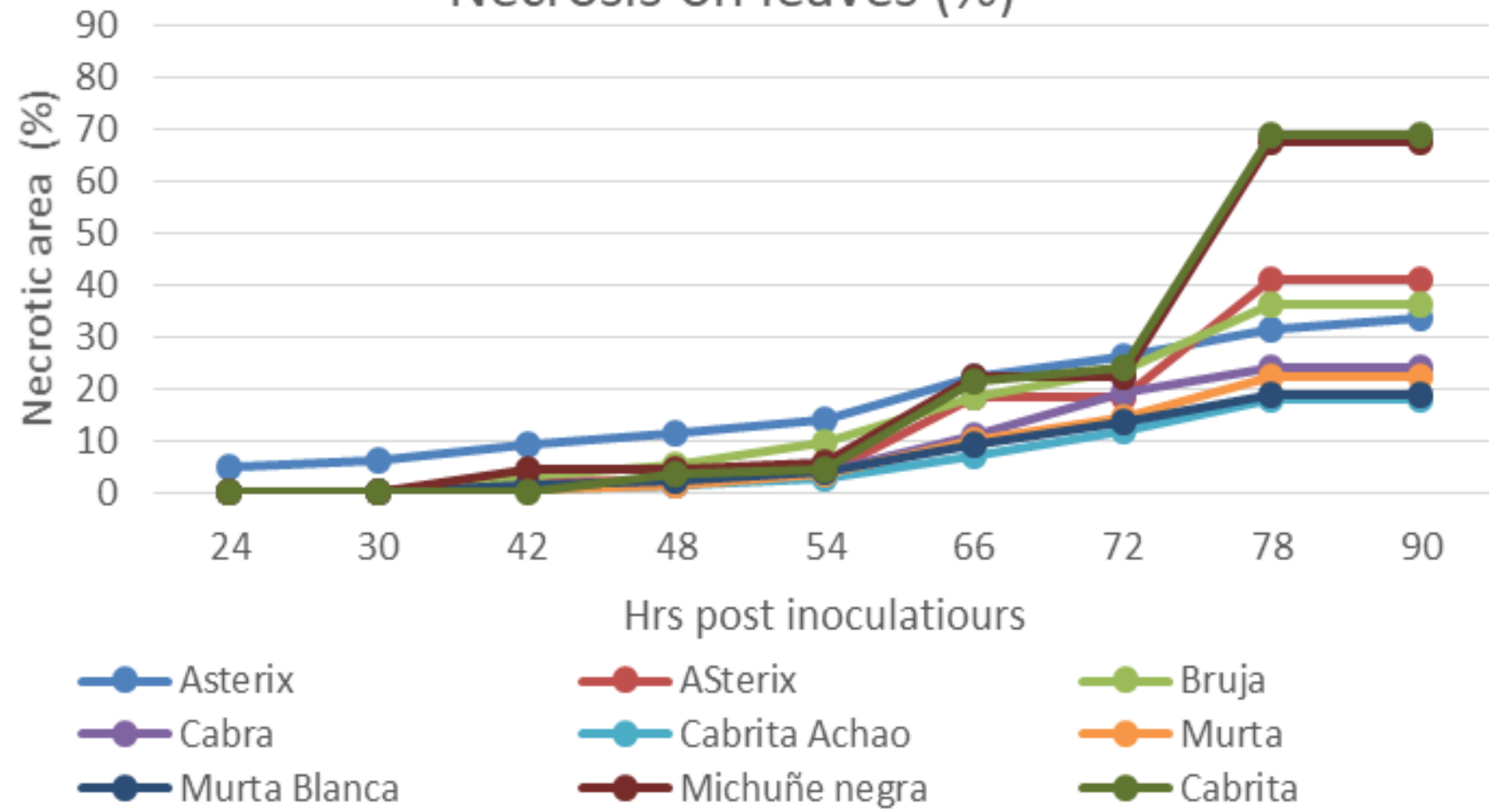




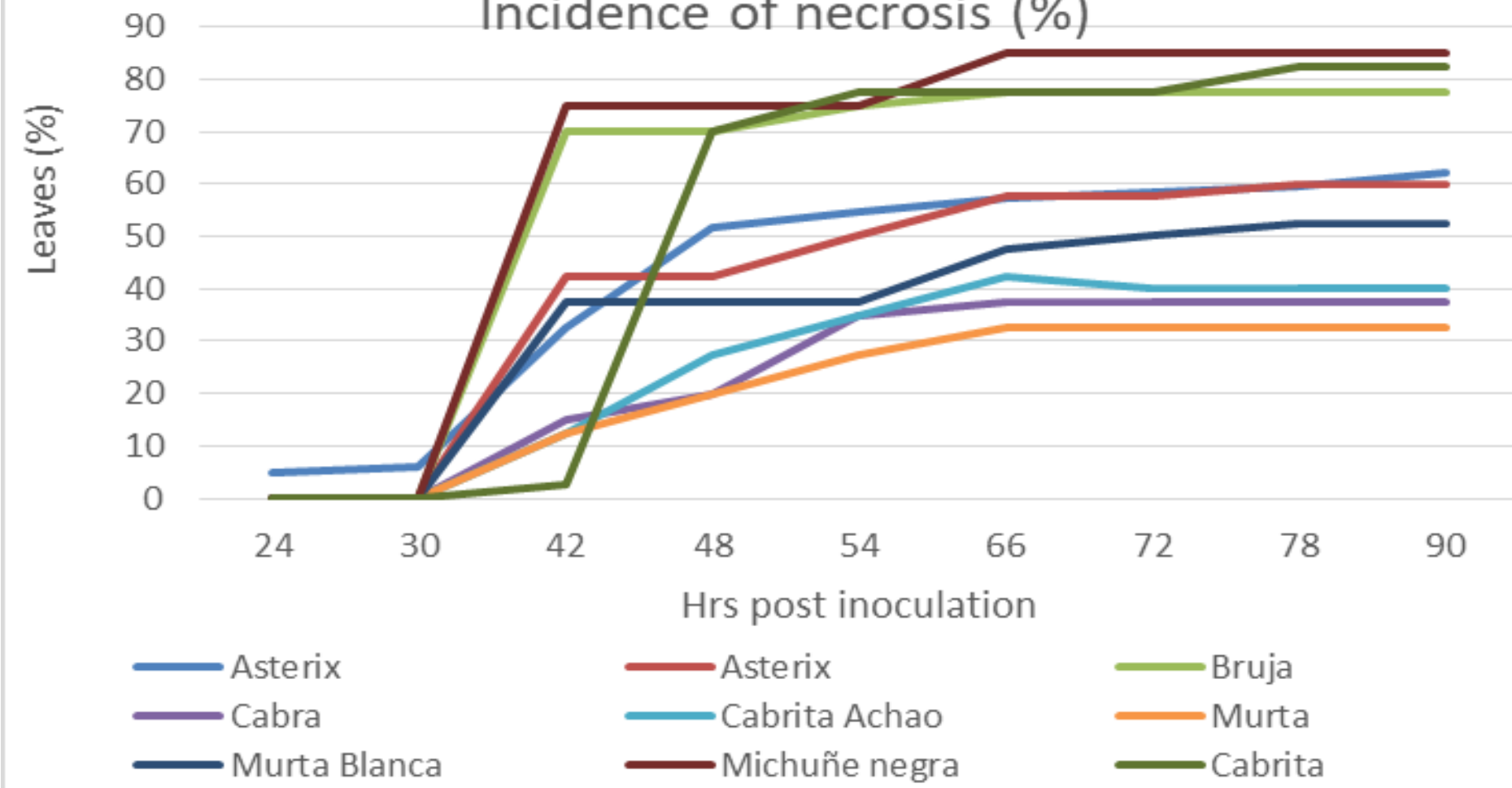
# Detach leaf test



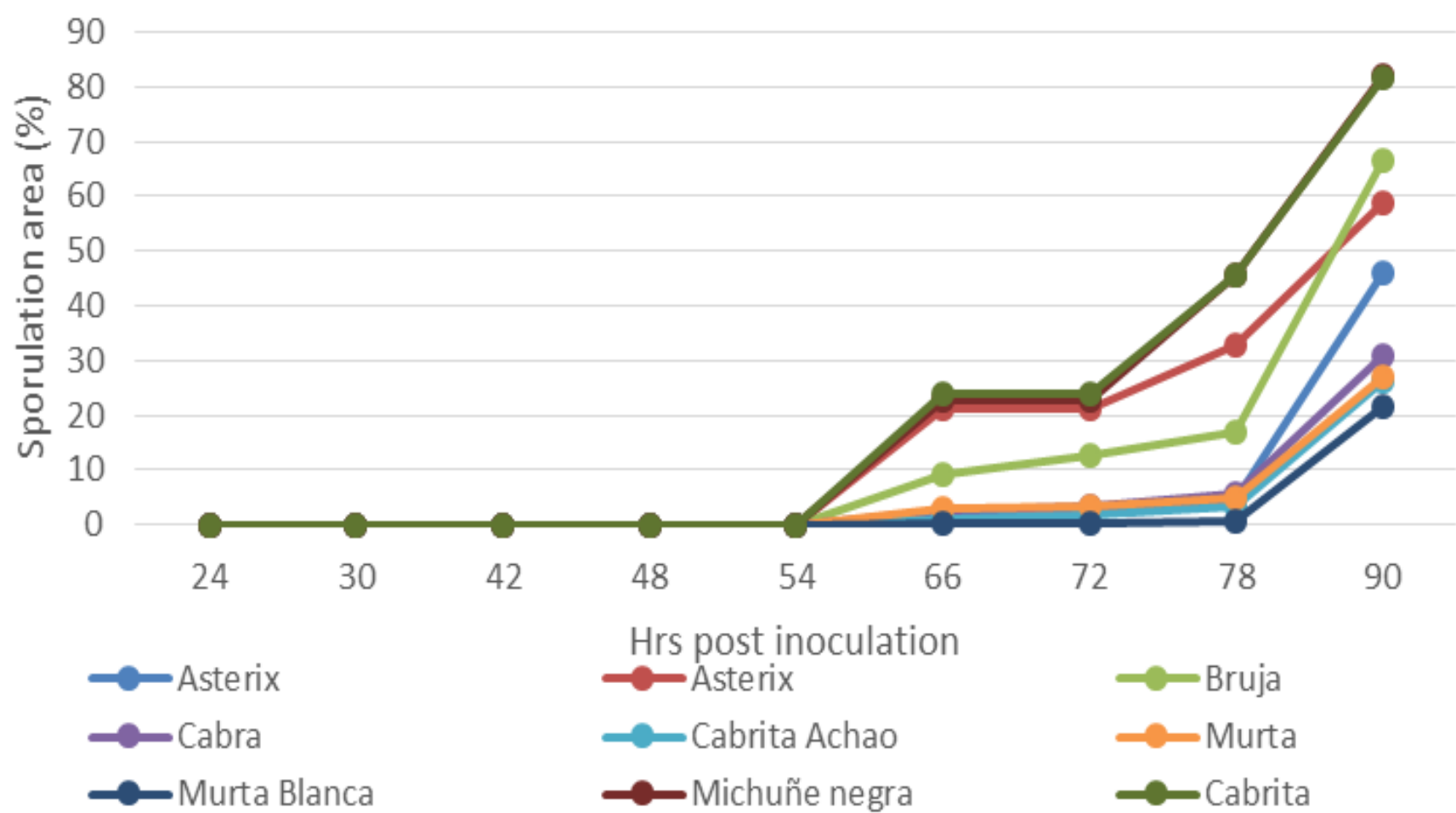
Necrosis on leaves (%)



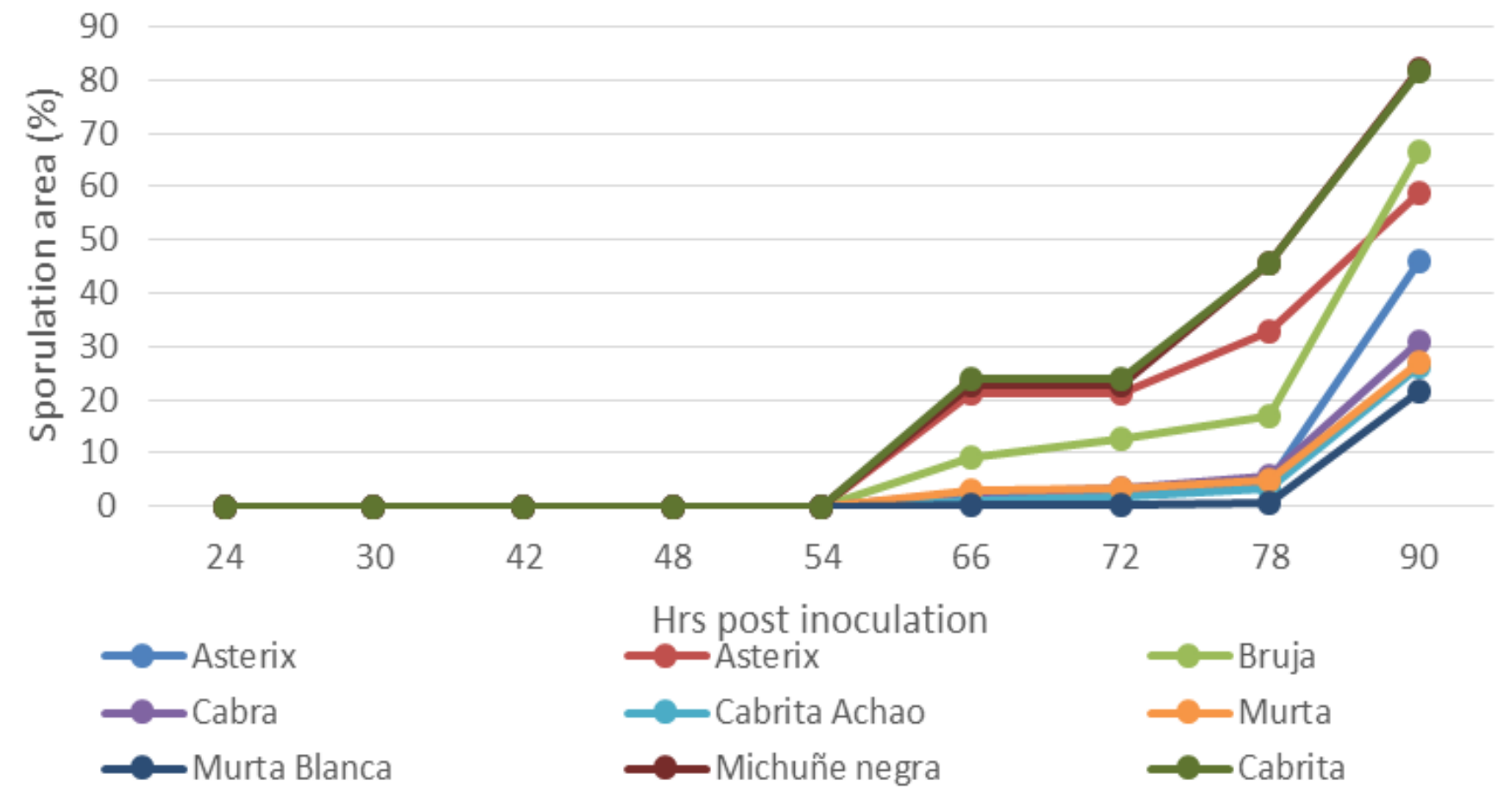
Incidence of necrosis (%)



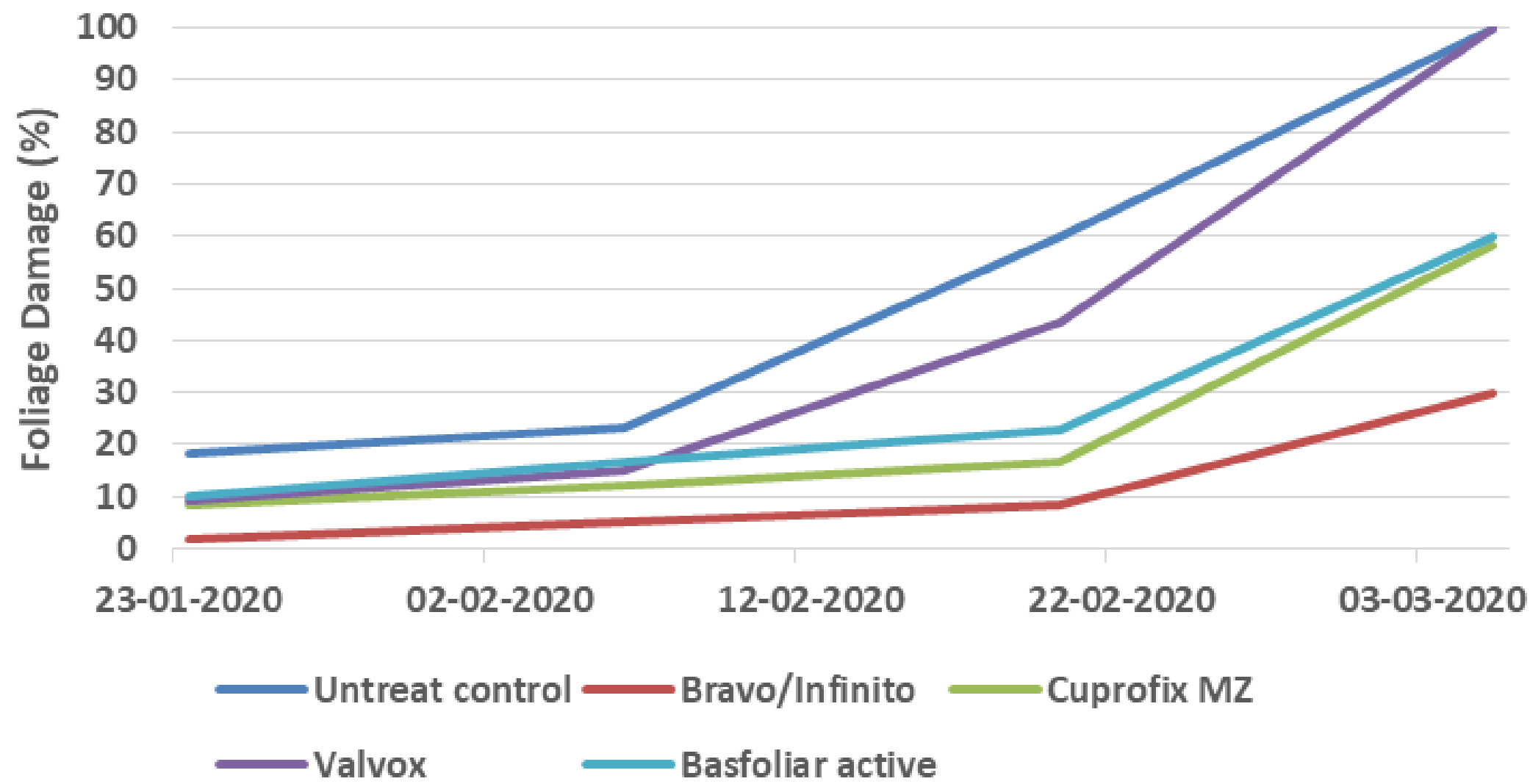
Sporulation on leaves (%)



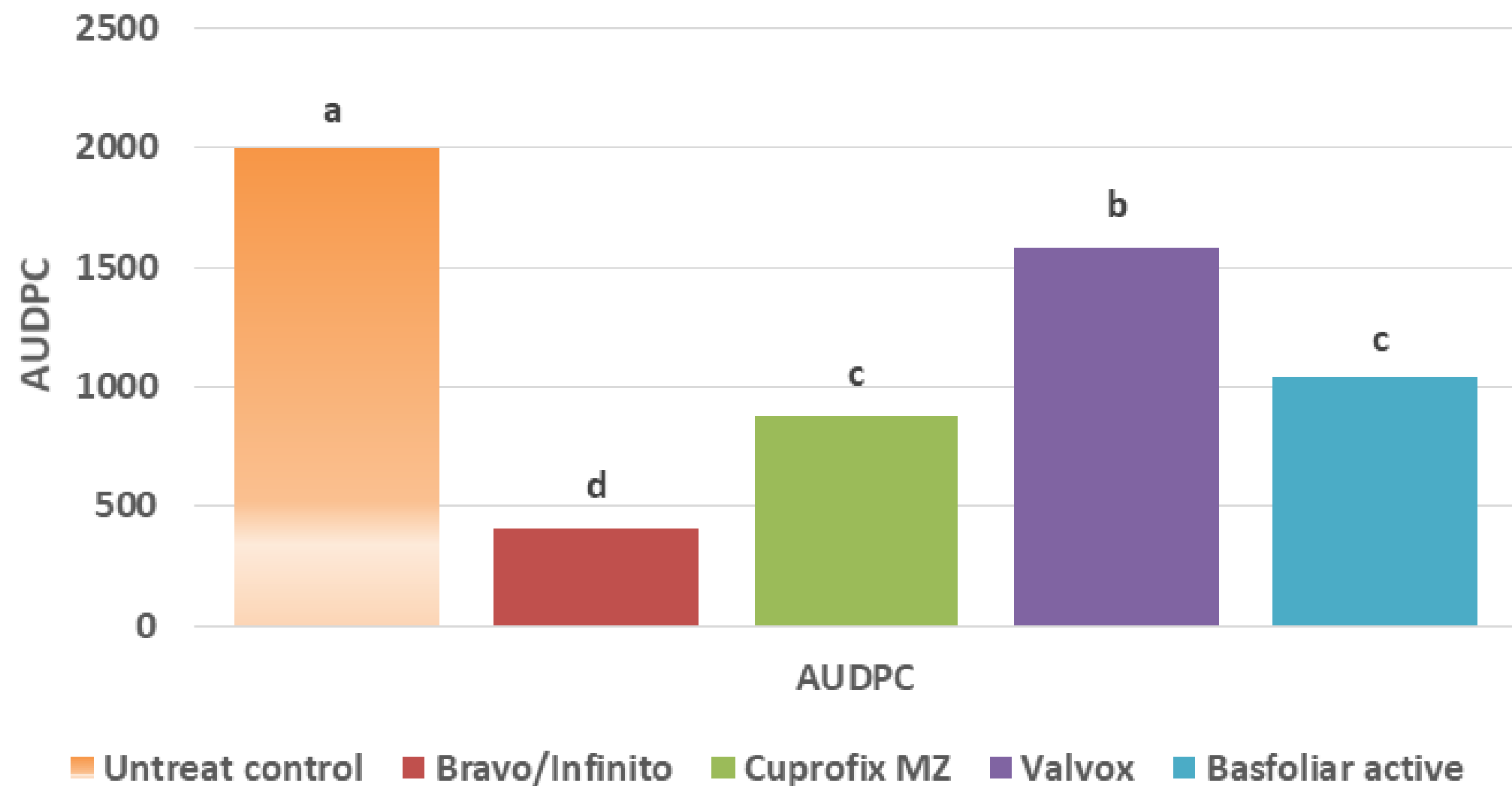
Sporulation on leaves (%)



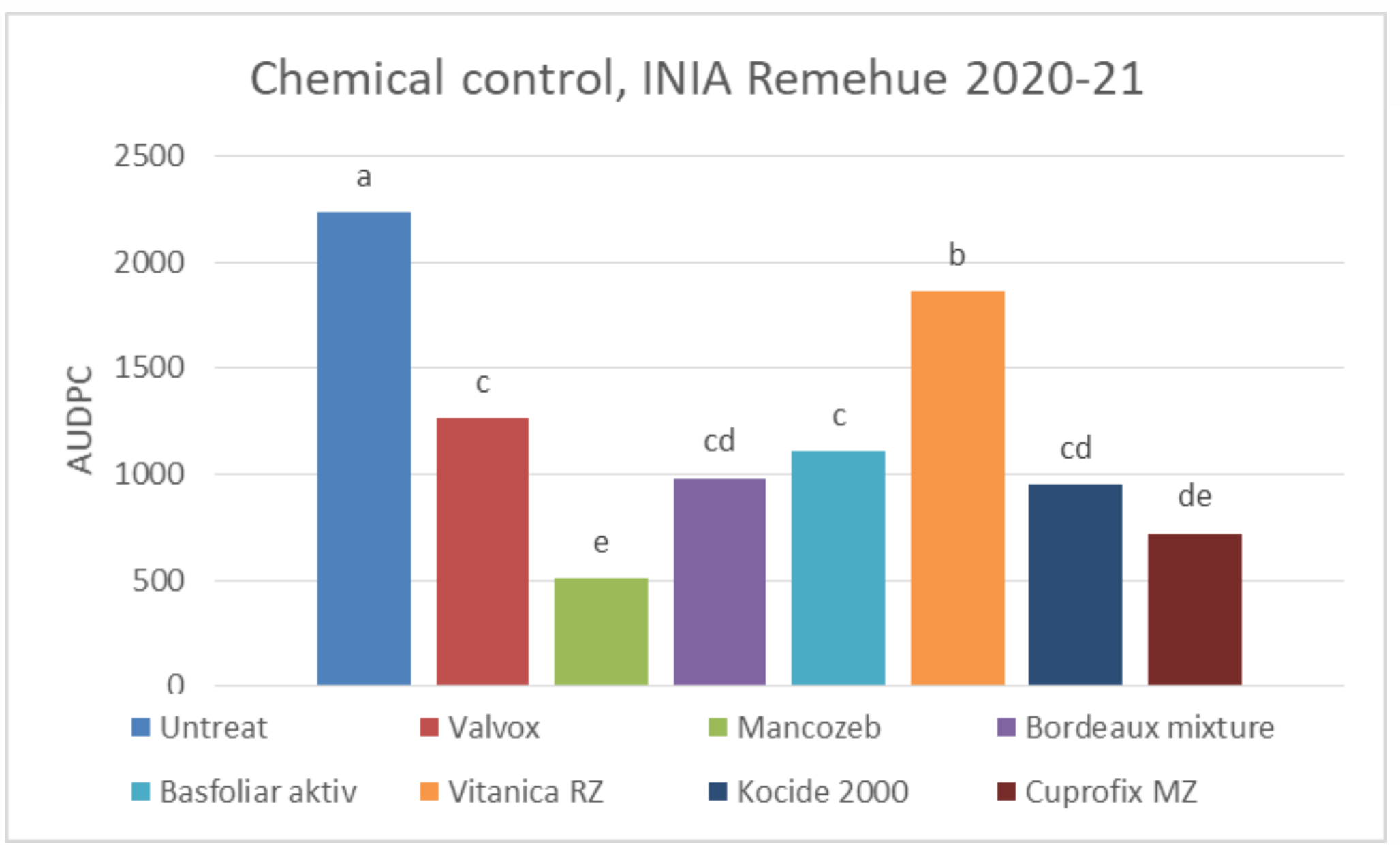
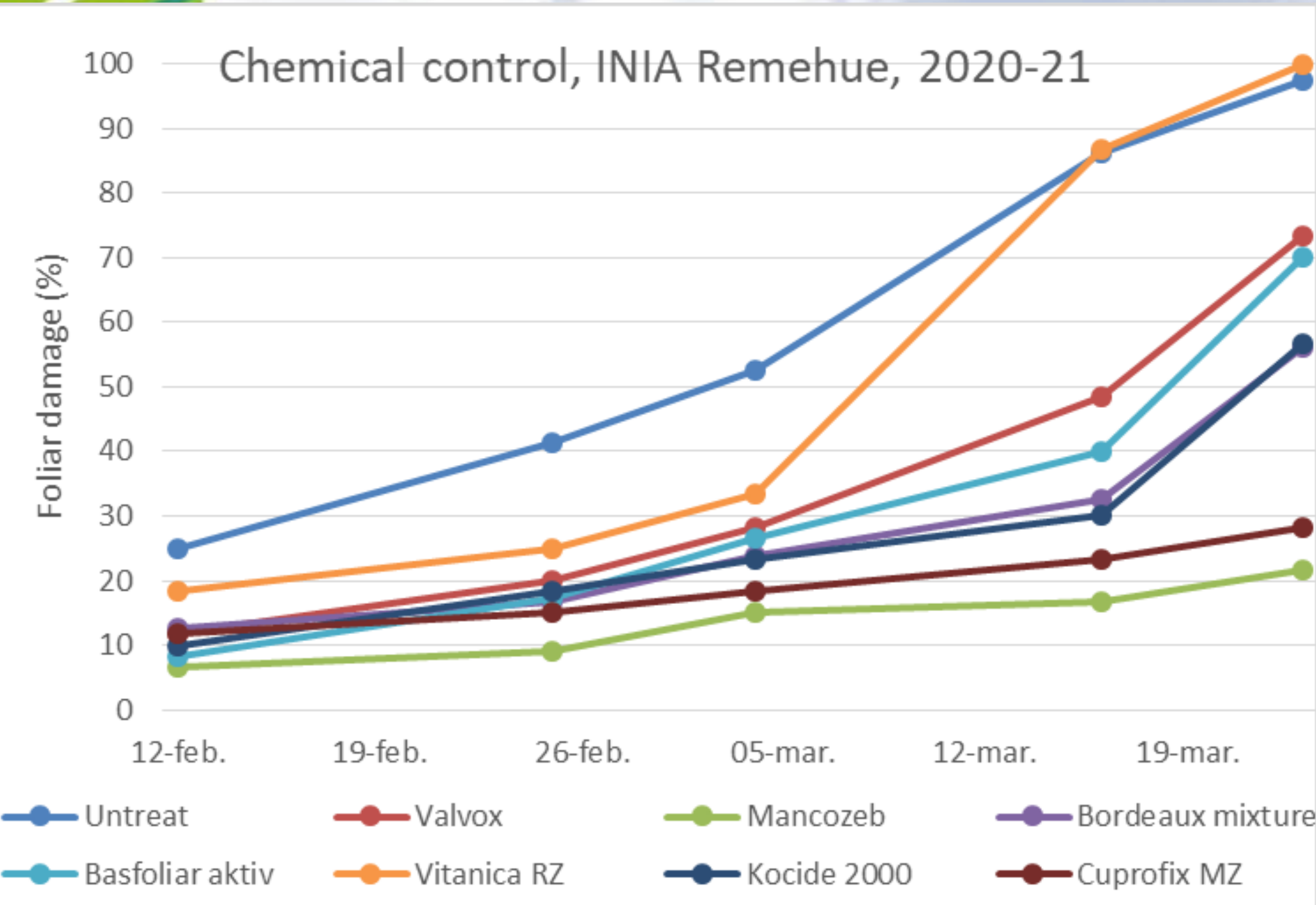
### Chemical control, INIA Chiloé, 2019-20



### Chemical Control, INIA Chiloé, 2019-20









150 isolates evaluated from genera: *Beauveria*, *Metarhizium*, *Trichoderma*, *Clonostachys*, *Paecilomyces*.

103 isolates are endophytic on tomato: 21 isolates show systemic action .

8 isolates are generalistic: colonized tomato, hot pepper, pepper, cucumber, soy bean, clover, blueberry.

5 isolates are endophytic on potato: 2 sistemics and 3 localized on roots: *Beauveria* y *Trichoderma*.

Reseach on multiple actions of endophytic fungi



**insects**

Article  
***Beauveria bassiana* Multifunction as an Growth Promotion and Biologic Control *Trialeurodes vaporariorum*, (Westwood) (Hemiptera: Aleyrodidae) in Tomato**

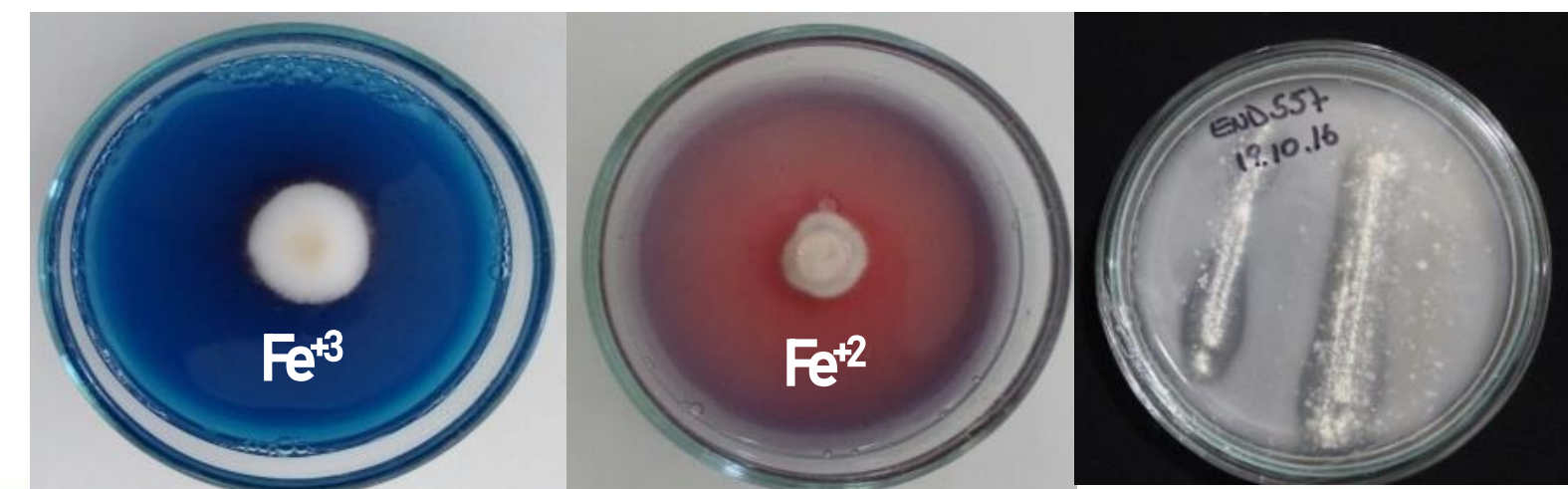
Lorena Barra-Bucarei <sup>1,2,\*</sup>, Macarena Gerding González <sup>2</sup>, Andrés France Iglesias <sup>1</sup>, Gonzalo Silva Aguayo <sup>2</sup>, Matias Guerra Peñalosa <sup>1</sup> and Pedro Vergara Vera <sup>3</sup>

**microorganisms**

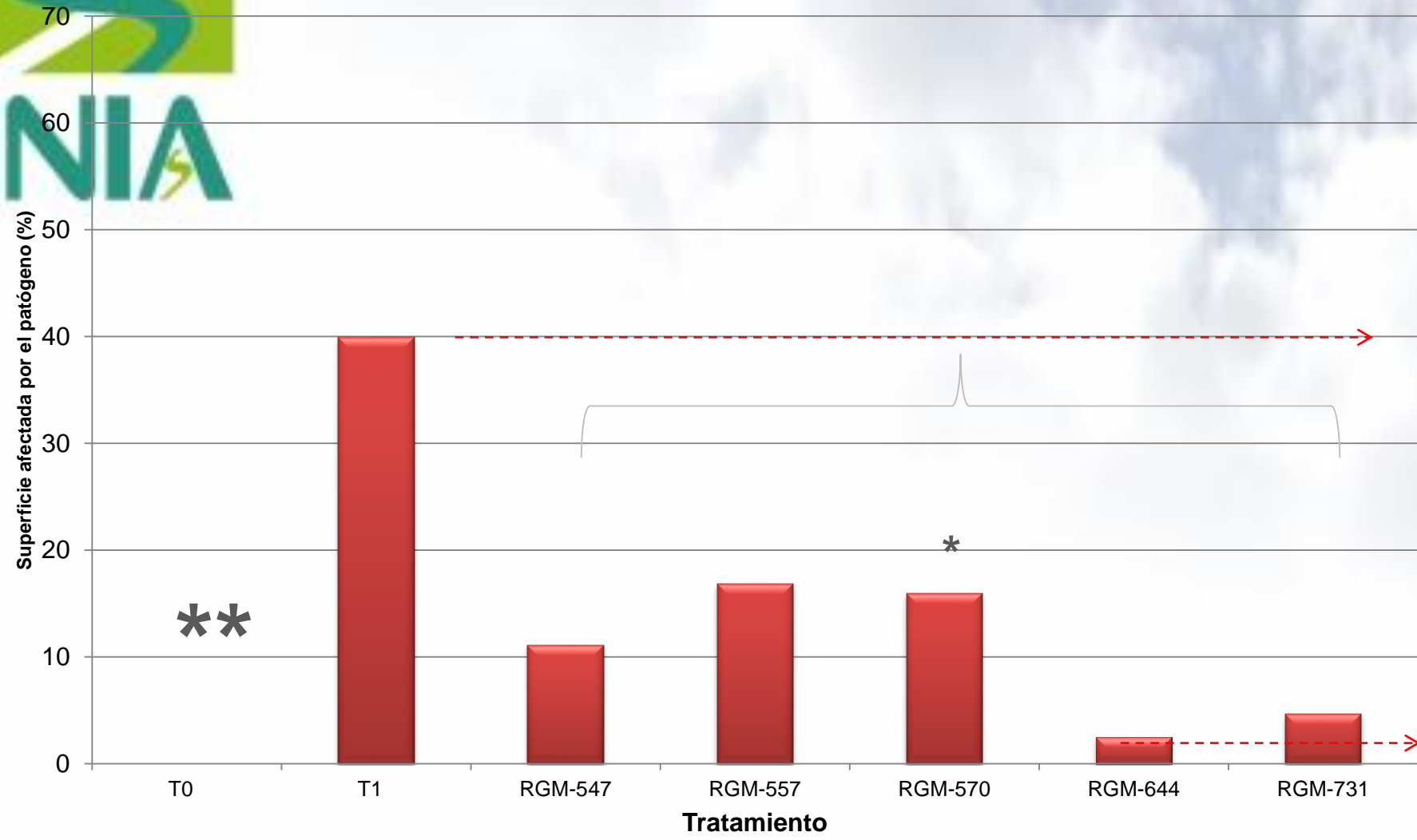
MDPI

Article  
**Antifungal Activity of *Beauveria bassiana* Endophyte against *Botrytis cinerea* in Two Solanaceae Crops**

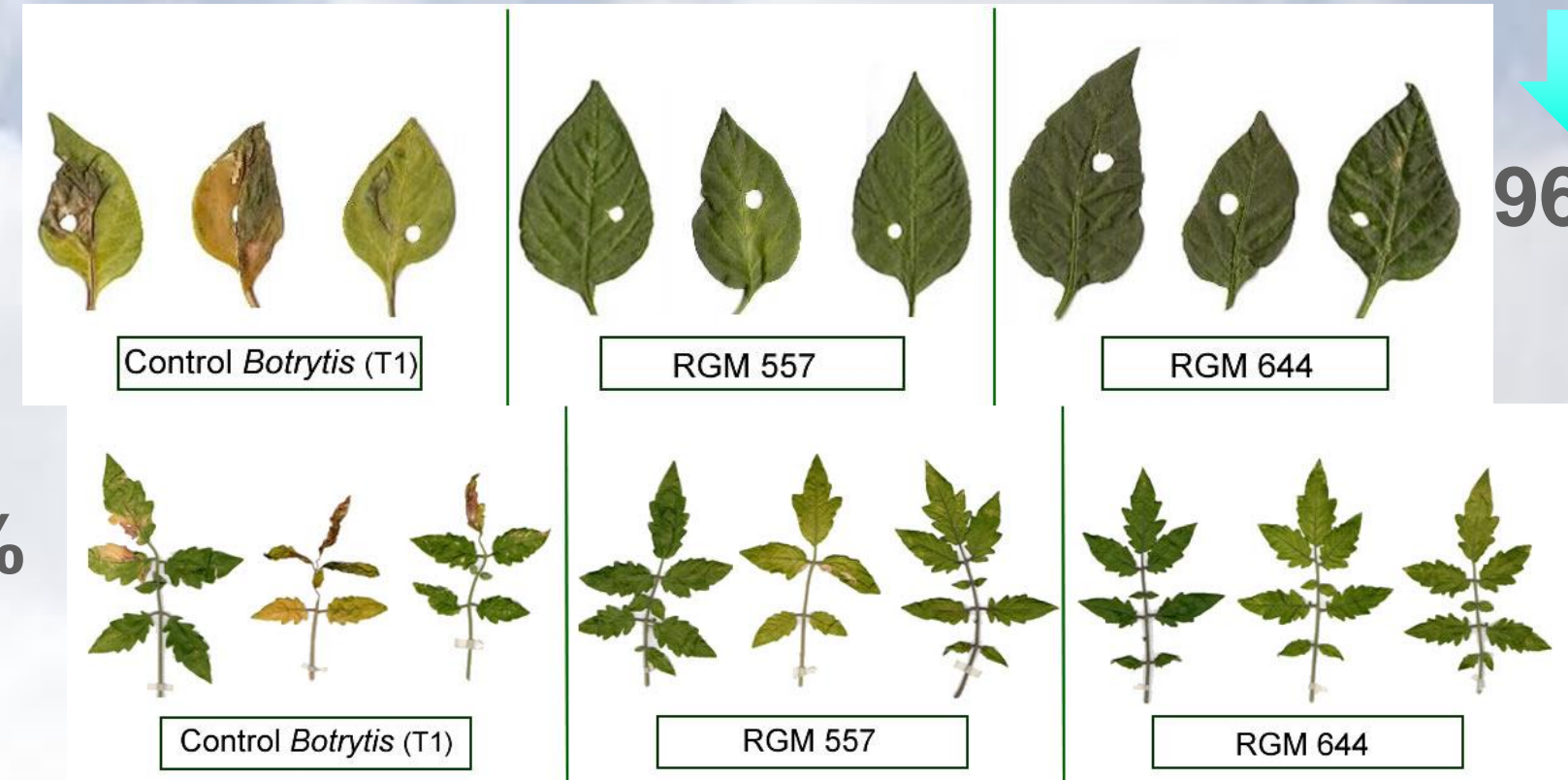
Lorena Barra-Bucarei <sup>1,2,\*</sup>, Andrés France Iglesias <sup>1</sup>, Macarena Gerding González <sup>2</sup>, Gonzalo Silva Aguayo <sup>2</sup>, Jorge Carrasco-Fernández <sup>1</sup>, Jean Franco Castro <sup>1</sup> and Javiera Ortiz Campos <sup>1,2</sup>







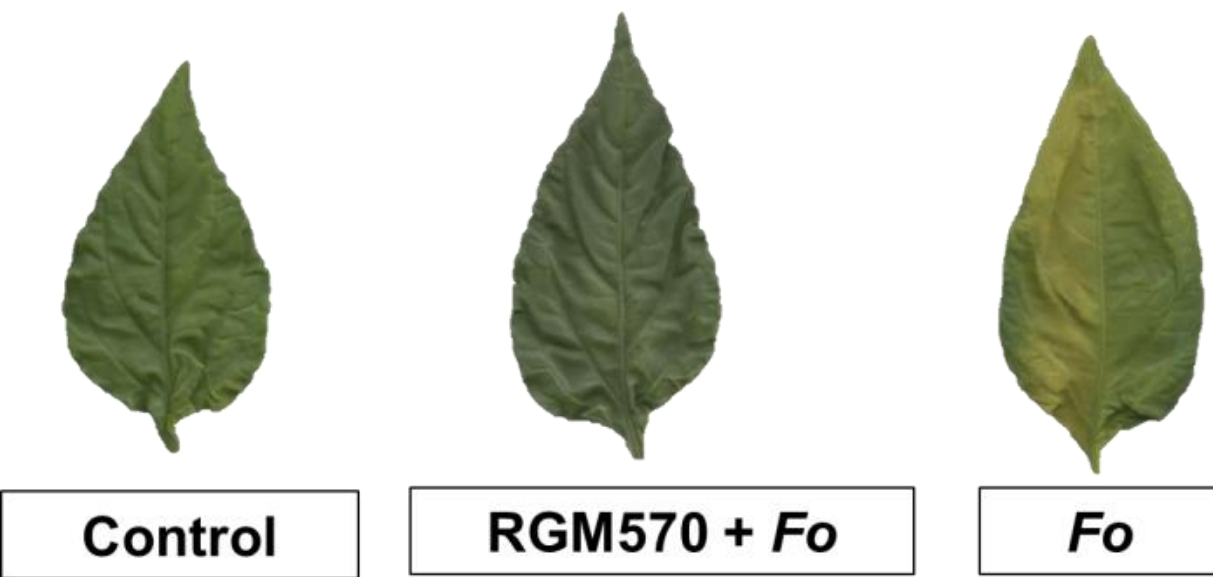
\* sobre las barras presentan diferencias significativas ( $P > 0,05$ ) Prueba de diferencia mínima significativa de Fisher (F-LSD)



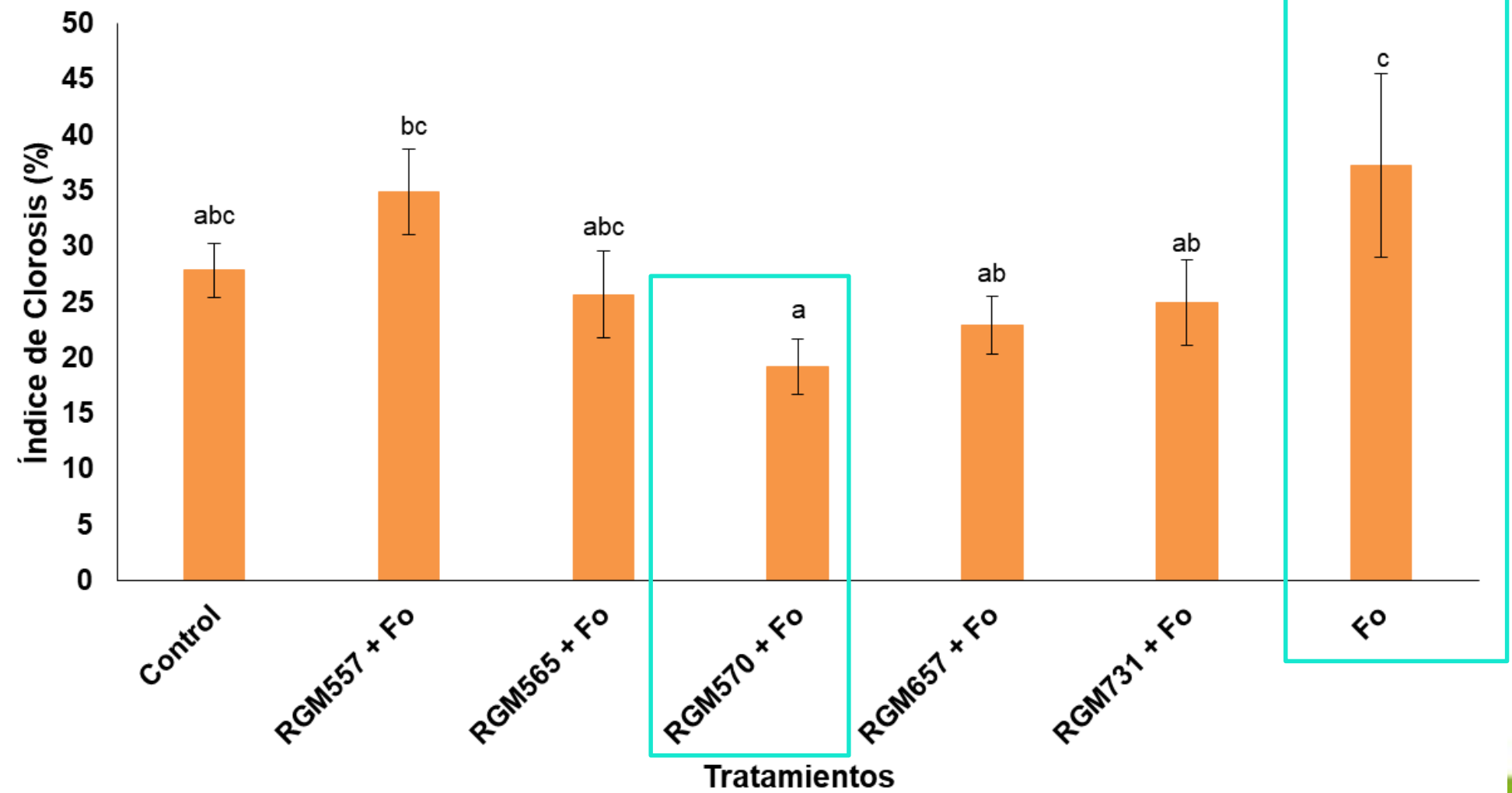
96,8%

95%

# Biocontrol activity on *Fusarium oxysporum* on tomato and hot pepper



48,6 %





# Problems and challenges

- Most of the landraces show high susceptibility to late blight.
- Market alternatives are related to organic production.
- Management focus on cultural practices, alternative products and biocontrol?





A close-up photograph of two purple flowers with bright yellow centers, set against a background of green leaves. The flowers are in various stages of bloom, with one being more open than the other. The text '!!! Thank you!!!' is overlaid in the center of the image.

**!!! Thank you!!!**

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