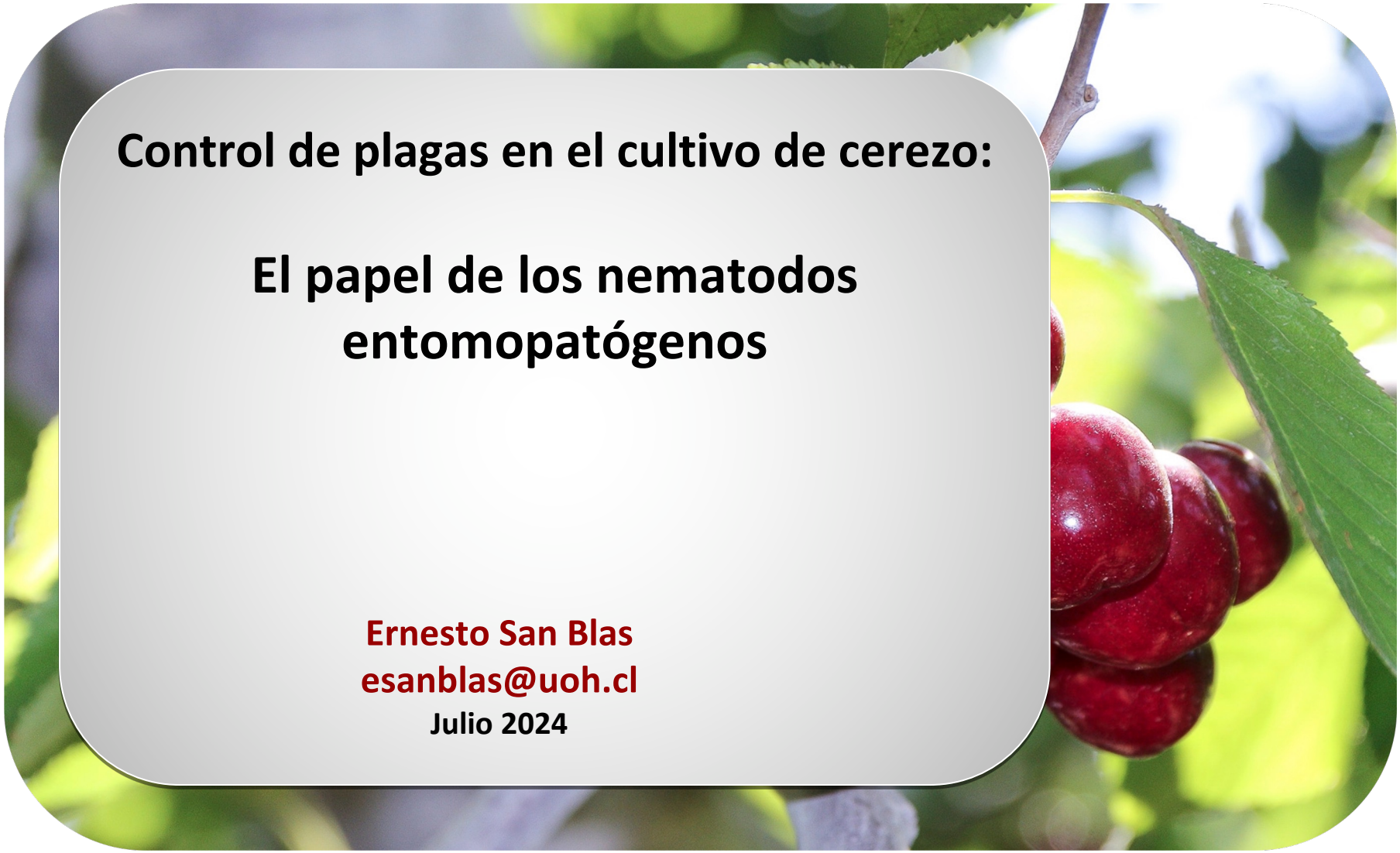
Universidad de O'Higgins



Control de plagas en el cultivo de cerezo:

El papel de los nematodos entomopatógenos

Ernesto San Blas
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Julio 2024

Contenido

- ¿Qué son NEPs?
- Importancia de los NEP para el CB
- Potencial de los NEP en cerezos
- Futuro del MIP en cerezos

¿Qué son NEPs?

- Viven en el suelo

- Matan insectos de forma muy eficaz (24-96 h)

¿Qué son NEPs?

- **Compatibles con muchos agroquímicos y ACB**

- **Se aplican con equipos tradicionales sin modificaciones**

¿Qué son NEPs?

Seguros para el ambiente y otros organismos

Se pueden reproducir en masa de forma industrial

Potencial de los NEP en cerezos

Burritos
(*Naupactus* spp.)

Polillas
(*Grapholita, Cydias* spp.)

Mosca de alas manchadas
(*Drosophila suzukii*.)

Thrips
(*Frankliniella occidentalis*)

Potencial de los NEP en cerezos

Journal of Nematology 38(1):168–171. 2(
© The Society of Nematologists 2(

Control of the Oriental Fruit Moth, *Grapholita molesta,* Using Entomopathogenic Nematodes in Laboratory and Fruit Bin Assays

E. Riga,[1] L. A. Lacey,[2] N. Guerra,[1] H. L. Headrick[2]

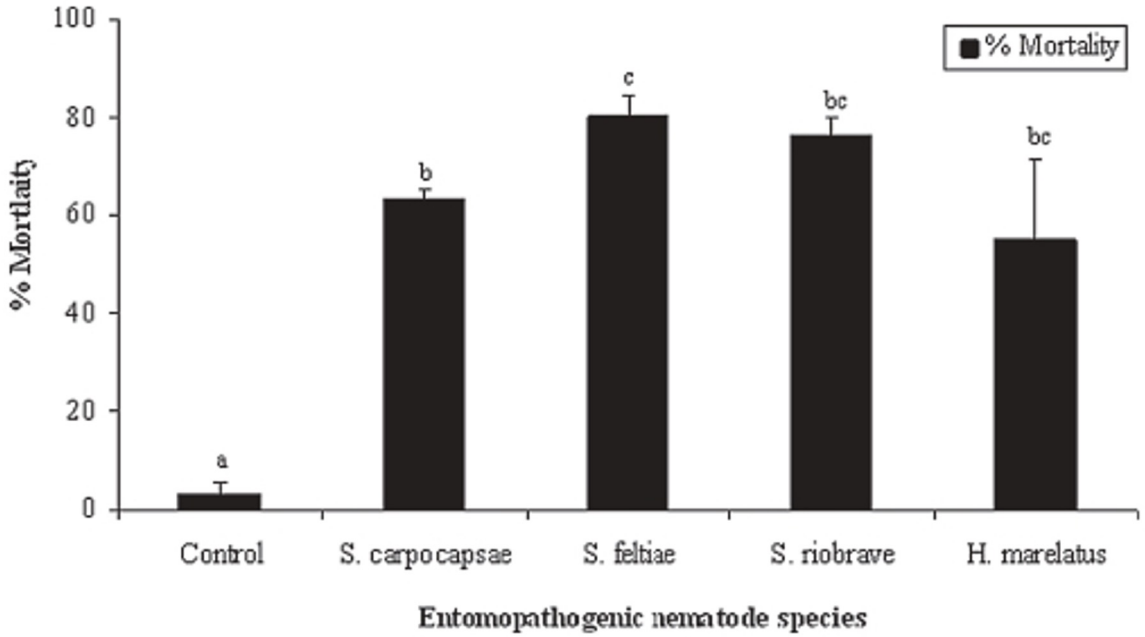


Fig. 1. Mortality in cocooned *Grapholita molesta* diapausing larvae

Potencial de los NEP en cerezos

Experimental Parasitology 135 (2013) 466–470

Control of *Grapholita molesta* (Busck, 1916) (Lepidoptera: Tortricidae) with entomopathogenic nematodes (Rhabditida: Heterorhabditidae, Steinernematidae) in peach orchards

Carla Ruth de Carvalho Barbosa Negrisoli [a,1], Aldomario Santo Negrisoli Jr. [b,*], Mauro Silveira Garcia [a,1], Claudia Dolinski [c], Daniel Bernardi [a,1]

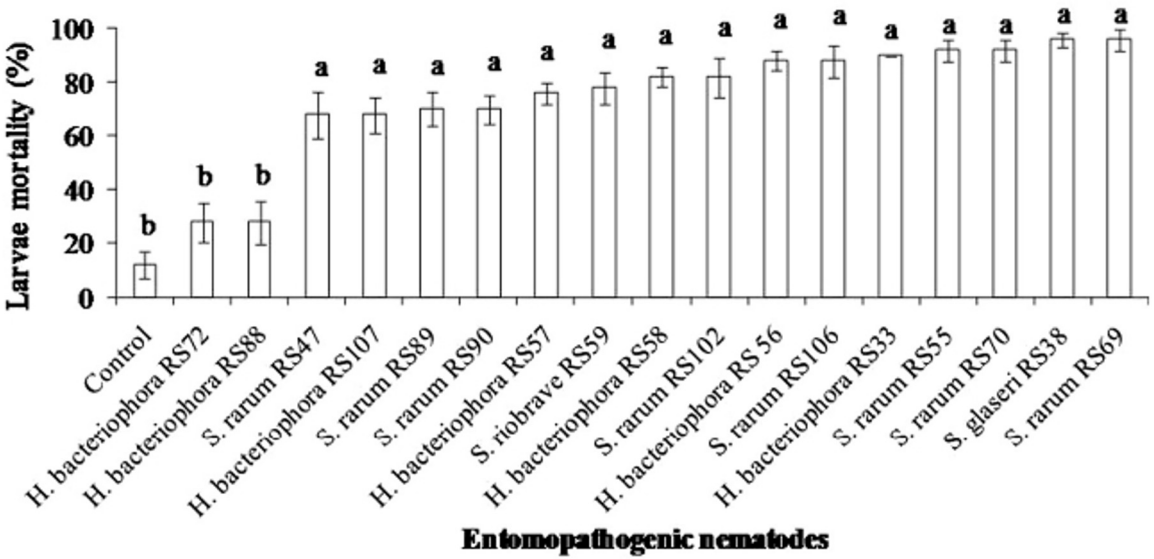
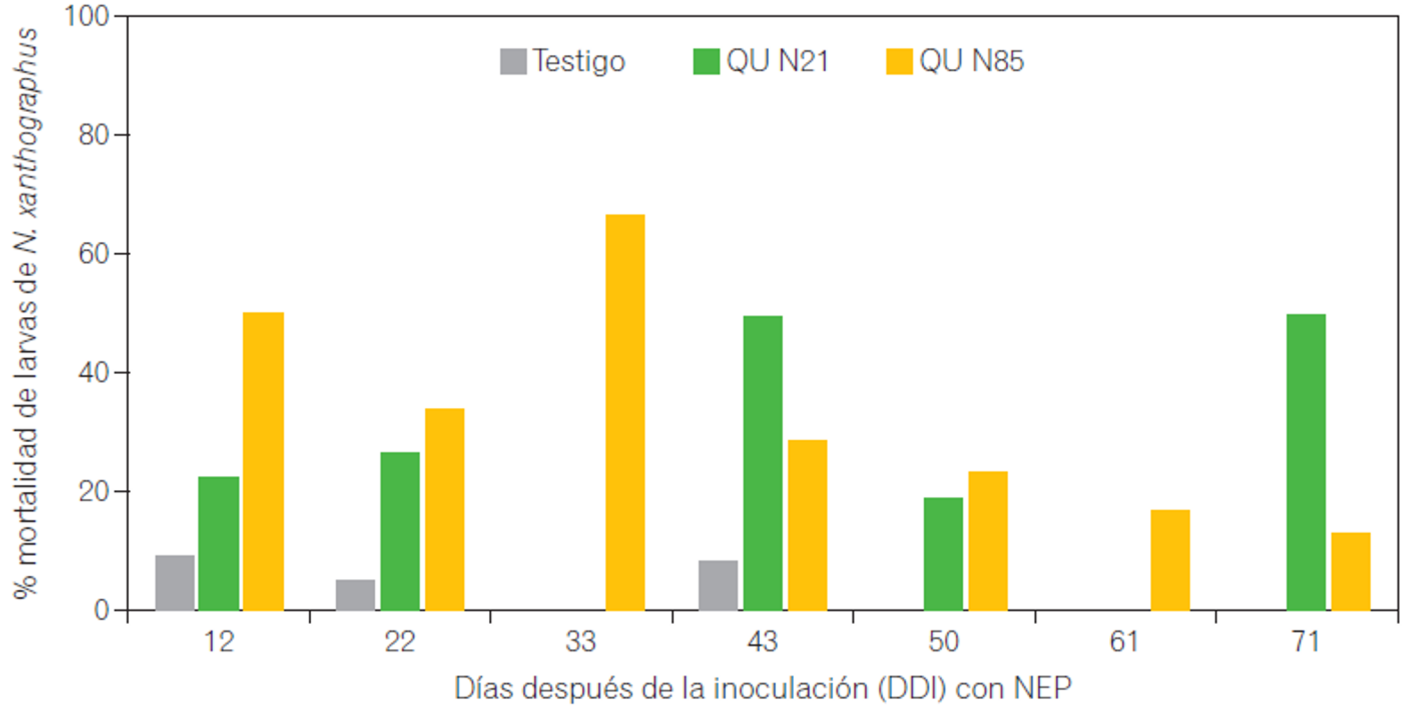


Fig. 2. Mortality (% ± standard error) of *Grapholita molesta* larvae in the fourth instar 72 h after exposure to isolates of entomopathogenic nematodes native from Rio Grande do Sul, Brazil, under laboratory conditions (Tukey, $p \leqslant 0.05$).

Potencial de los NEP en cerezos



Mortalidad de larvas de ***N. xanthographus,*** provenientes de la infestación natural, con dos aislamientos de NEP. Casablanca, 2012.

Lupichini et al (2013). http://biblioteca.inia.cl/medios/biblioteca/boletines/NR38787.pdf

Potencial de los NEP en cerezos

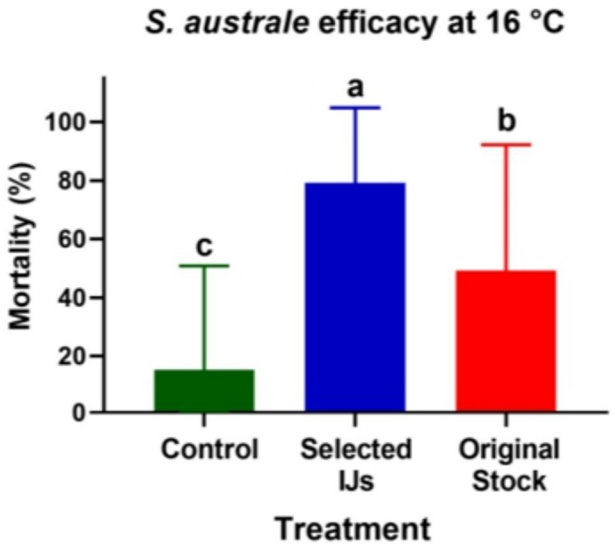
agronomy

MDPI

Article

Steinernema australe Enhanced Its Efficacy against *Aegorhinus nodipennis* (Coleoptera: Curculionidae) Larvae in Berry Orchards after an Artificial Selection Process

Patricia D. Navarro [1,*,†], Rubén Palma-Millanao [1,*,†], Ricardo Ceballos [2] and Almendra J. Monje [1]



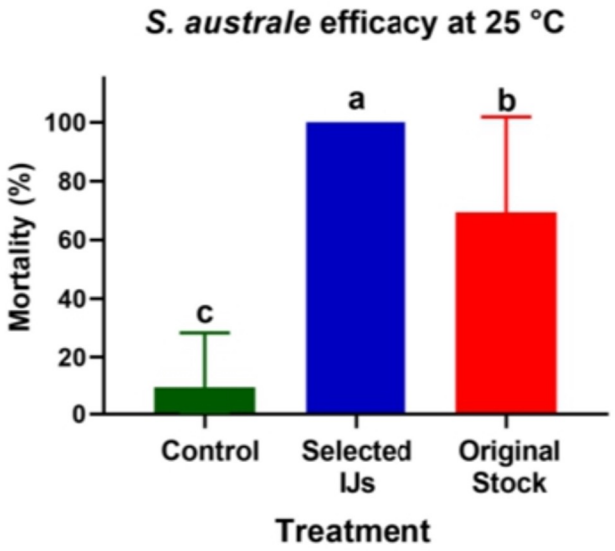


Figure 5. Efficacy (mean ± SEM) of selected *S. australe* against *A. nodipennis* larvae in 35 L pots

Potencial de los NEP en cerezos

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Available online at www.sciencedirect.com
ScienceDirect
Biological Control 39 (2006) 66–74

Biological Control
www.elsevier.com/locate/ybcon

Simultaneous application of entomopathogenic nematodes and predatory mites to control western flower thrips *Frankliniella occidentalis*

Lemma Ebssa [a,*], Christian Borgemeister [a,b], Hans-Michael Poehling [a]

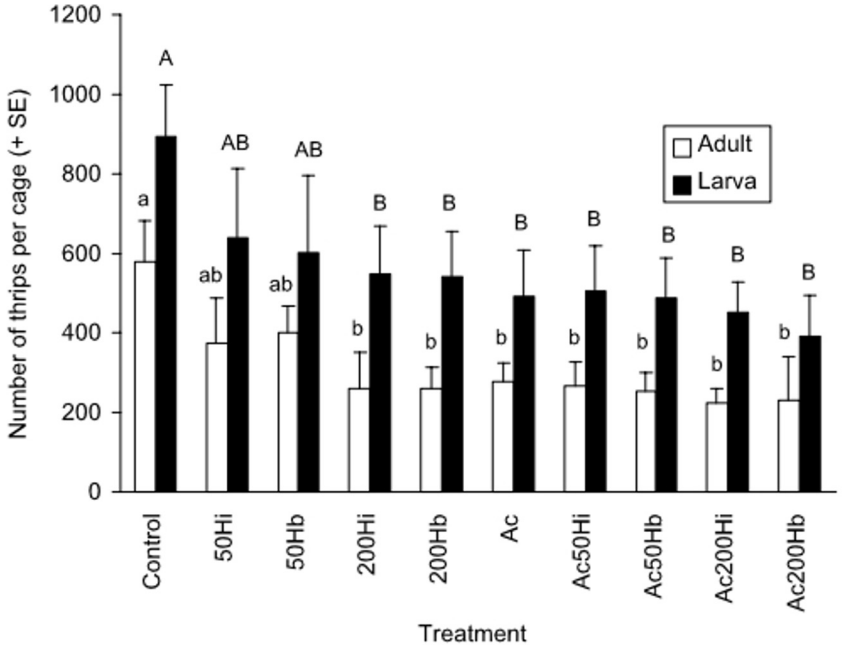

Fig. 1. Average number of larvae and adult western flower thrips recorded on bean plants in a cage in the greenhouse experiment.

Potencial de los NEP en cerezos

BioControl **48:** 529–541, 2003.

Combined releases of entomopathogenic nematodes and the predatory mite *Hypoaspis aculeifer* to control soil-dwelling stages of western flower thrips *Frankliniella occidentalis*

W.T.S.D. PREMACHANDRA[1], C. BORGEMEISTER[1]*, O. BERNDT[1], R.-U. EHLERS[2] and H.-M. POEHLING[1]

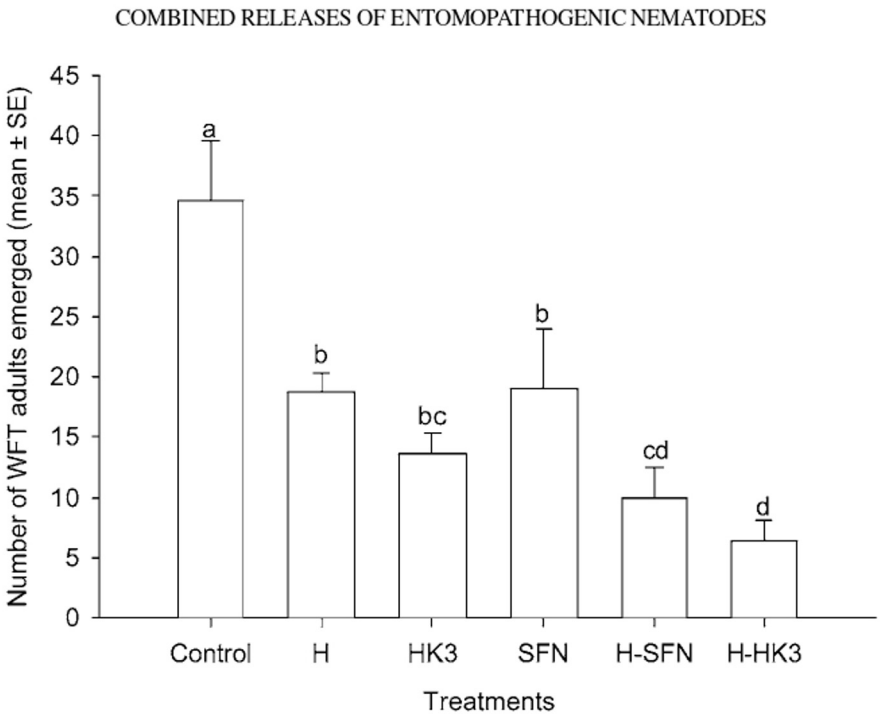

Figure 2. Effect of EPN strains and *H. aculeifer* on adult emergence of WFT

Potencial de los NEP en cerezos

BioControl
DOI 10.1007/s10526-017-9832-x

CrossMark

Effect of entomopathogenic nematodes on different developmental stages of *Drosophila suzukii* in and outside fruits

Amelie Hübner · Camilla Englert · Annette Herz

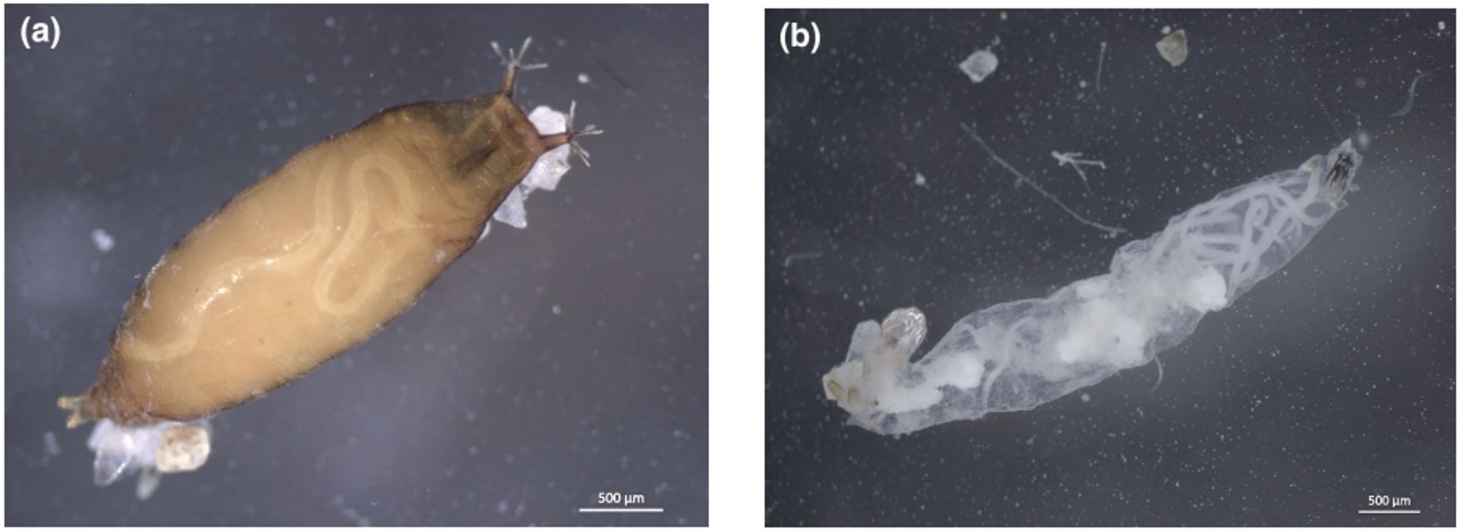

Fig. 1 **a** Closed *D. suzukii* puparium with two adult nematodes (*S. feltiae*) after successful infection of the host in the larval stage. **b** third instar larva of *D. suzukii* infected by *S. feltiae*

Potencial de los NEP en cerezos

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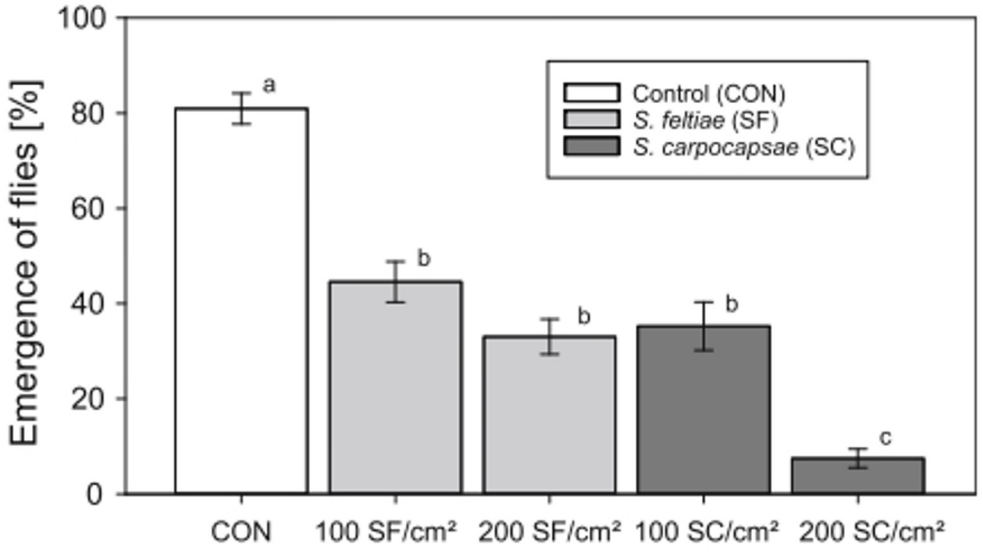

Fig. 2 Emergence of *D. suzukii* (mean percentage ± SE) after exposure of infested blueberries on a sand substrate treated with *S. feltiae* (SF) or *S. carpocapsae* (SC) at 100 or 200 EPN cm^{-2}.

Potencial de los NEP en cerezos

scientific reports

OPEN

Susceptibility of *Drosophila suzukii* larvae to the combined administration of the entomopathogens *Bacillus thuringiensis* and *Steinernema carpocapsae*

Maristella Mastore[1], Silvia Quadroni[2] & Maurizio F. Brivio[1]

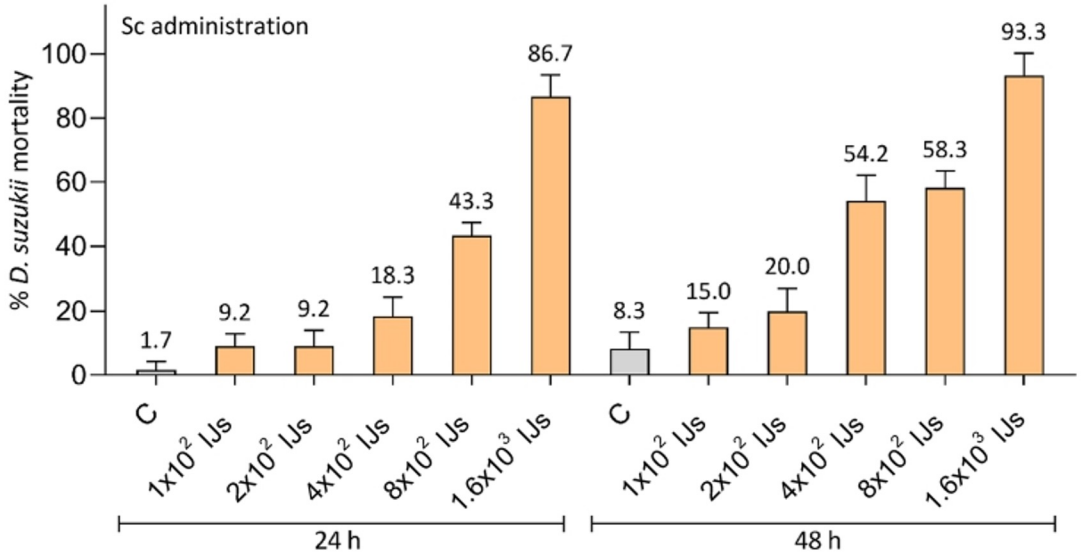

Figure 3. Effects of various amounts of *S. carpocapsae* (Sc) administered to L1 stage of *D. suzukii* larvae.

Potencial de los NEP en cerezos

scientific reports

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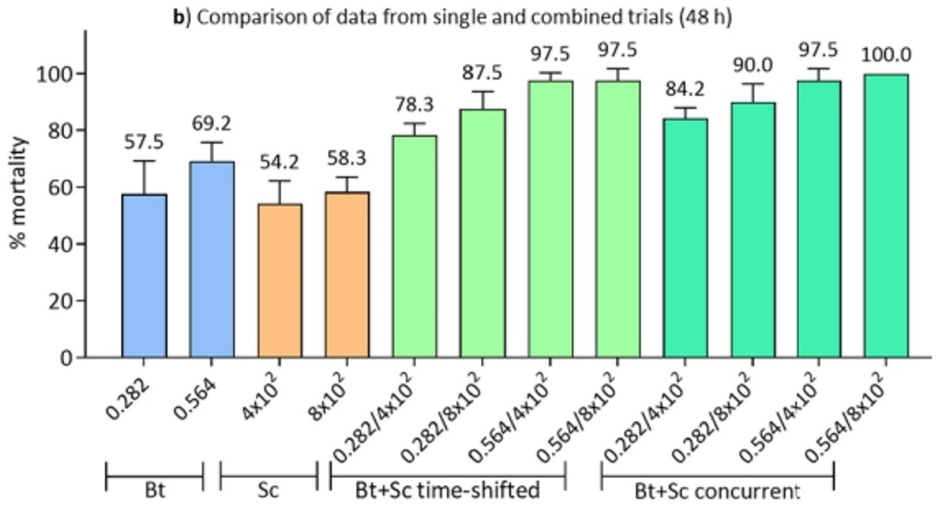
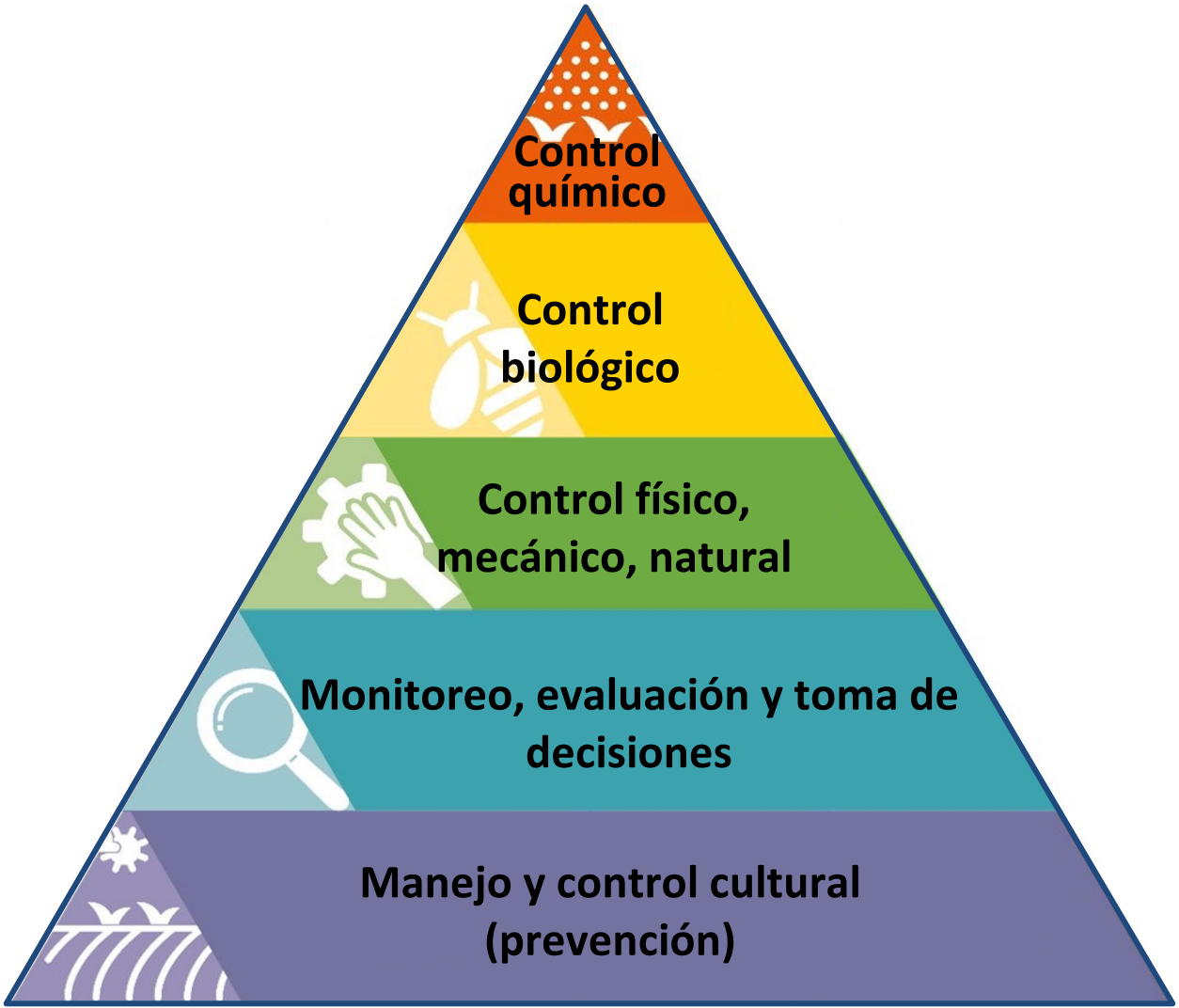


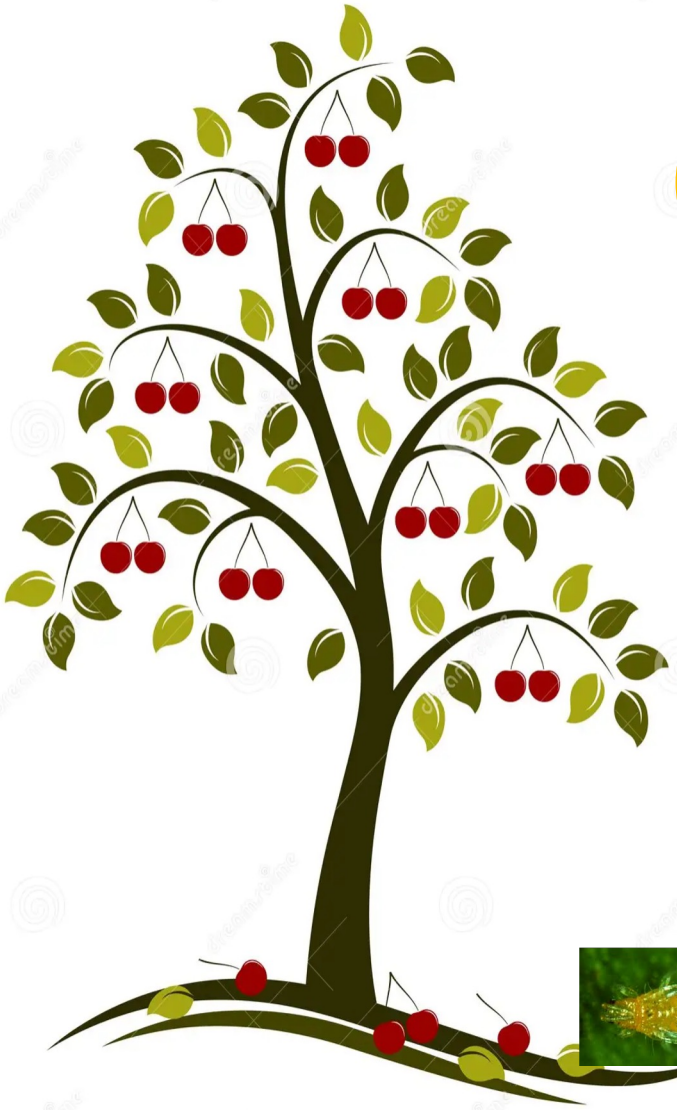
Figure 8. Cross assessment of the results obtained in single and combined administrations at 24 and 48 h.

Futuro del MIP en cerezos

Estrategias del MIPE (pirámide de manejo)

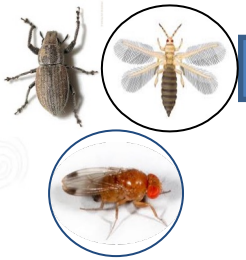


Futuro del MIP en cerezos



parasitoides

Cosila chilensis
Fidiobia sp.
Trigonospila sp



HEP y Bacterias

Beauveria sp.
Metarhizium sp.
Verticillum sp
B.t.

NEP

H. atacamensis
H. bacteriophora
S. feltiae
S. unicornum
S. australe

Futuro del MIP en cerezos

- ¿Es posible?

Claro que es posible!!!!!!

- Falta desarrollo tecnológico dirigido
- Investigación sostenida necesaria
- Fortaleciendo la sinergia de productores-academia

Futuro del MIP en cerezos

y al final valdrá la pena

¡Gracias!

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