

Accepted Manuscript

Control of cyst nematodes by *Lysobacter enzymogenes* strain C3 and the role of the antibiotic HSAF in the biological control activity

Gary Y. Yuen, Kyle C. Broderick, Charlene C. Jochum, Carl J. Chen, Edward P. Caswell-Chen

PII: S1049-9644(17)30234-7

DOI: <https://doi.org/10.1016/j.biocontrol.2017.11.007>

Reference: YBCON 3681

To appear in: *Biological Control*

Received Date: 12 May 2017

Revised Date: 1 November 2017

Accepted Date: 10 November 2017

Please cite this article as: Yuen, G.Y., Broderick, K.C., Jochum, C.C., Chen, C.J., Caswell-Chen, E.P., Control of cyst nematodes by *Lysobacter enzymogenes* strain C3 and the role of the antibiotic HSAF in the biological control activity, *Biological Control* (2017), doi: <https://doi.org/10.1016/j.biocontrol.2017.11.007>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Control of cyst nematodes by *Lysobacter enzymogenes* strain C3 and the role of the antibiotic HSAF in the biological control activity.

Gary Y. Yuen^{1*}, Kyle C. Broderick¹, Charlene C. Jochum¹, Carl J. Chen^{2,3} and Edward P. Caswell-Chen²

Affiliations

¹Dept. of Plant Pathology, University of Nebraska-Lincoln, Lincoln, NE 68583.

²Dept. of Entomology and Nematology, University of California, Davis, CA 95616.

³Present address: U.S. Environmental Protection Agency, Office of Pesticide Programs (7503P), 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

*Corresponding author. E-mail address: gyuen1@unl.edu

ABSTRACT

Lysobacter enzymogenes C3, a bacterial biocontrol agent of fungal and oomycetous plant pathogens, produces an antimicrobial secondary metabolite complex (HSAF) as a mechanism for its antifungal activity. In this study, strain C3 was investigated for its activity against various life history stages of *Heterodera schachtii*, the sugarbeet cyst nematode (SBCN), and *H. glycines*, the soybean cyst nematode (SCN), on roots. Strain C3 was applied to the roots of cabbage, sugarbeet, and soybean grown in growth pouches, sand, and a sand-soil medium, respectively, under growth chamber conditions. Cabbage and sugarbeet roots were subsequently challenged with SBCN, while soybean roots were inoculated with SCN. Treatment of sugarbeet with C3 reduced the number of SBCN nematodes in the roots compared to the no bacteria control, while treatment of cabbage roots with the bacterium reduced numbers of SBCN cysts and eggs per plant compared to the control. Similarly, application of C3 to soybean inhibited SCN egg

Download English Version:

<https://daneshyari.com/en/article/8877769>

Download Persian Version:

<https://daneshyari.com/article/8877769>

[Daneshyari.com](https://daneshyari.com)