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SEASONAL OCCURRENCE OF ENTOMOPATHOGENIC NEMATODES ASSOCIATED TO ORGANIC AND CONVENTIONAL CROPS IN LA RIOJA (NORTHERN SPAIN)

R. Campos-Herrera, M. Escuer, S. Labrador, L. Robertson and C. Gutiérrez

Departamento de Agrecología, Centro de Ciencias Medioambientales (CCMA,CSIC), c/ Serrano 115 bis, 28006 Madrid, Spain, e-mail: raquel.campos@ccma.csic.es

Natural populations of entomopathogenic nematodes (EPN) were monitored in two consecutive years in horticultural and orchard crops from organic and conventional agricultural systems in Oja-Tirón Valley, La Rioja (Northern Spain). A total of 89 soil samples from 3 natural sites and 15 crop fields located in 3 agricultural areas were seasonally evaluated for EPN occurrence and population size using the *Galleria* baiting technique. *Steinernema carpocapsae* and *S. feltiae* occurred in organic and conventional orchard crops, and *S. feltiae* was also isolated from natural areas. No nematode was recorded from conventional horticultural crops, and one unidentified EPN species was isolated from one organic horticultural crop field in the first year. Although the nematode populations from the natural and agricultural systems areas studied fluctuated over time, no significant differences in recovery frequency and abundance were observed among seasons in each year. EPNs abundance was not significantly different among sampling sites; however, the recovery frequency showed significant differences in spring, summer and autumn of the first year, and spring and winter of the second year. In general, the highest values of larval mortality percentage and EPN population density were observed in natural areas followed by organic orchard, conventional orchard and organic horticultural. The effect of the agricultural systems on the EPNs occurrence is discussed.

ENTOMOPATHOGENIC NEMATODES OF GENUS *STEINERNEMA* (RHABDITIDA: STEINERNEMATIDAE) ON LARVAE OF BIBIONIDAE (DIPTERA) ON VITOSHA MOUNTAIN

D.P. Gradinarov¹ and E.P. Petrova²

¹ Faculty of Biology, Sofia University "St. Kliment Ohridski", 8 Dragan Tzankov Blvd., 1164 Sofia, Bulgaria, e-mail: dgradinarov@abv.bg

² Entomology Department, Plant Protection Institute, Kostinbrod 2230 Sofia, Bulgaria, e-mail: angellore81@abv.bg

New data has been reported on the relationships between entomopathogenic nematodes of the genus *Steinernema* and insects of the Bibionidae family in white pine (*Pinus silvestris* L.) stands on Vitosha Mountain. In most of the parasitized larvae the species *S. kraussei* (Steiner, 1923) was detected, and in the rest – a species from the „affine” group. Parasitized pupae were not found. Most probably the bibionid flies are more resistant to nematode invasion after pupation. Obviously the species *S. kraussei* is permanently associated with the larvae of bibionid flies in mountain habitats and takes part in the regulation of their population density. Quantitative collections carried out at an experimental field above the village of Bistrizta in April, 2005, showed a relatively uniform distribution of parasitized insects. Morphological studies of the nematodes isolated showed the presence of two clearly distinguished types of spiculae of male individuals of *S. kraussei*. The presence of two distinct types of spiculae within one and the same species has been recorded in the original descriptions of *S. bicornu-*