DIVERSITY AND DISTRIBUTION OF ENTOMOPATHOGENIC NEMATODES IN CHILE

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Abstract:

A systematic programmed survey for entomopathogenic nematodes (EPN) was done in Chile between 2006 and 2008. The survey spanned the principal ecosystems of main land Chile as well as a number of islands, and covered a wide range of habitats including the Atacama Desert, Andean Altiplano, temperate rain forests and sub polar territory. Nearly 1400 soil samples were collected, of which 7% were positive for E PN. Of 101 EPN isolates obtained, 94 were Steinernema spp. and seven were Heterorhabditis spp. Of the 94 Steinerne ma isolates, 39 were identified as Steinernema feltiae, the remainder being distributed between two new species , S. unicornum (52 records) and S. australe (three records). The Heterorhabditis isolates, all designated as Heterorhabditis sp.1, are referred to here in as H. cf. safricana. Steinernema feltiae and S. unicornum w ere collected predominately in the south of Chile and were obtaine d from a range of habitats, including forests , open grass land, montage soils and coastal zones; neither species was recovered from the far north o f the country (viz., desert soils in the Norte Grande region). Steinernema australe was found in only three soil samples, all from humid, cool, coastal localities in the south. Heterorhabditis cf. safricana w as recovered from the northern regions, with most isolates found in or on the periphery of the Atacama Desert; they were not recovered from cooler, more humid regions of southern Chile. Molecular information indicated there were two subgroups of both S. unicornum and S. feltiae, with a geographical, intras pecific split of subgroups between the most southerly and the more ce ntral survey zones. All isolates wer e collected by ex situ baiting with wax moth larvae and the natural hosts are unknown.

Key words: Biological control, Entomopathogenic, nematodes