



- 52 EFFICACY OF ELICITORS OF RESISTANCE TO ROOT-KNOT NEMATODE *Meloidogyne incognita* ON TABLE GRAPE IN PERU [EFICACIA DE ELICITORES DE RESISTENCIA AL NEMÁTODO DEL NÓDULO DE LA RAÍZ, *Meloidogyne incognita* EN UVA DE MESA]. L. A. Álvarez. Department of Agronomy, Faculty of Agricultural Sciences, National University of Cañete. Cañete (Lima), Perú. lalvarez@undc.edu.pe**
- Peru is currently the world leader in table grape exports. The expansion in areas of this crop in sandy desert soils has consequently increased the damage by plant parasitic-nematodes where *Meloidogyne* is the more important species. The objective of the study was to evaluate the efficacy of products that induce plant defense against infections by *Meloidogyne incognita*, as an alternative to the use of nematicides. The trial was conducted in a commercial table grape field for 2 consecutive crop seasons. Seven treatments were evaluated: T0: control, T1: benzothiadiazole, T2: mannano oligosaccharide, T3: jasmonic acid, T4: chitosane, T5: glycine betaine and T6: oxamyl. With the exception of oxamyl, which was applied only once via the irrigation system, the other treatments were applied 3 times every 20 days via foliar spray. The evaluations were carried out every 20 days after each application. In each evaluation two parameters were evaluated: number of J2 in 100 cm³ of soil and percentage of root damage. The results obtained 60 days after the first application showed that the best treatment was oxamyl, and among the defense inducers, benzothiadiazol and mannano oligosaccharide reduced the number of J2 by 100 cm³, and jasmonic acid reduced the percentage of root damage. These products represent an alternative to the use of nematicides or a complement to these in the management of the disease.
- 53 ELUCIDATION OF THE NEMATICIDAL MODE OF ACTION OF 3-OCTANOL ON THE ROOT-LESION NEMATODE *Pratylenchus penetrans* [ELUCIDACIÓN DEL MODO DE ACCIÓN NEMATICIDA DEL 3-OCTANOL SOBRE EL NEMATODO DE LA LESIÓN RADICULAR *Pratylenchus penetrans*]. P. Barbosa(1), M. Costa(2), M. Espada(1), A.C. Figueiredo(3), M. Mota(1), C. S. L. Vicente(1). (1)Mediterranean Institute for Agriculture, Environment and Development, Instituto de Investigação e Formação Avançada, Universidade de Évora, Évora, Portugal, (2)Instituto Nacional de Investigação Agrária e Veterinária (INIAV, I.P.), Quinta do Marquês, Oeiras, Portugal, (3)Centro de Estudos do Ambiente e do Mar (CESAM Lisboa), Faculdade de Ciências da Universidade de Lisboa, Centro de Biotecnologia Vegetal, Lisboa, Portugal. cvicente@uevora.pt**
- The root-lesion nematode (RLN), *Pratylenchus penetrans*, is one of the most severe plant-parasitic nematodes (PPN), responsible for productivity losses in a significant number of plant hosts. The chemical control of these PPNs relies on fumigants and non-fumigants compounds, which offer systemic protection. Such control methods are costly and hazardous to the environment and to humans. Compounds naturally produced by plants may play an important role in nematode control. The aim of this study is to analyze the molecular response of *P. penetrans* to the nematicidal agent 3-octanol (C₈H₁₈O) using a De novo transcriptome assembly approach. Previous work showed that 3-octanol is a strong nematicide of *P. penetrans* causing 100% mortality in standard direct contact for 24h. The mode of action of this nematicide was studied at sub-lethal exposure for 30 min. Overall, the aliphatic alcohol 3-octanol induced the activation of detoxification mechanisms of *P. penetrans* with up-regulation of metabolic pathways related with metabolism of xenobiotics by CP450, steroid hormone synthesis, retinol metabolism, drug metabolism among others, while affecting ascorbate and aldarate metabolism, starch/sucrose metabolism and several signaling pathways related with cellular immune response. Understanding the defense mechanisms of *P. penetrans* against natural nematicides can lead to development of tailor-made control solutions.