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GENOME MAPPING AND CHEMICAL COMPOUNDS RESPONSE OF FOUR OLIVE CULTIVARS INFESTED WITH THREE PLANT PARASITIC NEMATODES

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Abstract

The reaction of four olive cultivars viz., Egazi, Manzanillo, Mission and Picual and their plant chemical response to inoculum relation with either *Helicotylenchus dihystera, Meloidogyne javanica* or *Rotylenchulus reniformis* was studied under greenhouse conditions during 2000 and 2001 seasons. Cultivar Mission was rated as resistant to *M. javanica, R. refniformis* and *H. dihystera* while cv. Picual was rated as resistant to both *M. javanica* and *H. dihystera* but highly susceptible to *R. reniformis.* On the other hand, Manzanillo was rated as resistant to *M. javanica*and susceptible and highly susceptible for *H. dihystera* and *R. reniformis*, respectively. Picual as well as Mission cvs gave the highest value of chlorophyll A and B in olive leaves but produced the lowest value of total Carotene. Plants inoculated with root-knot nematode, *Meloidogyne javanica* produced the lowest value of chlorophyll A and B but gave the highest value of total Carotene. The least significant average of total phenols with the highest average of total protein, DNA, RNA, total soluble sugar, reducing and non-reducing sugars in roots was observed in cvs Mission and Picual. Generally, the nematodes inoculated plants gave the highest average of total phenols, protein, DNA and RNA compared with un-inoculated checks. Plants infected with either *Meloidogyne javanica* or *Rotylenchulus reniformis*nematodes produced the highest average of phenols, total protein, total DNA and RNA. This was also confirmed at the molecular level by using RAPD analysis. One random OP 20 showed total of nine specific bands that can be used as a marker in two varieties (Mission and Picual) that have resistance to *R. reniformis* and *H. dihystera* compard with those of susceptible to *R. reniformis* and *H. dihystera* (Egazi and Manzanillo).