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EFFECT OF SOME BIOSTIMULANTS IN ROOT-KNOT NEMATODE CONTROL

By

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ABSTRACT

Biostimulants are now widely used as eco-friendly approach for biocontrol of parasitic pests, including root-knot nematodes (RKNs), instead of using chemical pesticides. Therefore, the aim of this study was to analyze the nematicidal activities of some biostimulants [e.g., neem and propolis extracts, potassium silicate (K_2SiO_3), salicylic acid (SA), and lemon juice] in comparison with oxamyl (Vydate 24% L.) against RKNs; *Meloidogyne* spp. Neem leaves and propolis material were extracted using 95% ethanol, while K_2SiO_3, SA, and lemon juice solutions were prepared using distilled water. RKN eggs were exposed to 2000, 4000, and 6000 ppm of neem and propolis extracts and K_2SiO_3 solution for 24, 48, and 72 h. The eggs were also exposed to 60, 120, and 180 ppm of SA and 25, 50, and 100% of total soluble solids (TSS) of lemon juice. In addition, juvenile nematodes (J2) were exposed to 25, 50, and 100% TSS of lemon juice for 12, 24, and 48 h. Results showed that all biostimulants caused a significant decrease in egg hatchability but to varying degrees. Lemon juice showed the most effective prevention of egg hatchability and increased juvenile mortality. There was a gradual decrease in egg hatching rate and a gradual increase in juvenile mortality rate with increasing concentration and duration of exposure.

Keywords: Biostimulants, *Meloidogyne* spp., egg hatchability, Juvenile mortality (J2), GC/MS