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Salicylic Acid Induced Resistance in *Polianthes tuberosa* against Root Knot Nematode *M. incognita*

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Abstract—*Plant parasitic nematodes particularly root knot nematode (M. incognita) contributes to a major share in world crop losses. Biological compounds like salicylic acid (SA) act as systemic acquired resistance elicitor and may contribute to the resistance of host plant against nematodes. The present work was carried out to investigate the effects of varying concentrations (2.5mM, 5mM and 10mM) of SA on tuberose inoculated with M. incognita on plant fitness and the reproduction of root knot nematode M. incognita. Different methods of treatment were carried out on tuberose prior to inoculation with M. incognita juveniles: 1) Soaking of tubersin SA solutions, 2) foliar spray using SA solution and 3) Soaking of tuber along with foliar spray. The results showed that use of 10mM SA as soak, foliar spray and both significantly reduce number of galls per plant 52%, 62% and 59%, number of egg masses per plant 68%, 70% and 71% and number of females per plant 71%, 75% and 77%as compared to control plant (inoculated with nematode only). Leaf spray with SA is the most effective treatments as they markedly reduced both root galling (40-62% that of untreated plants) and infestation (62–75% Egg mass reduction). Using the simple, quick and cost effective SA approach a 62 to 75% reduction in infestation can be obtained which is similar to 50 to 80% reduction in infection reported earlier using transgenic approach. This is the first report on use of SA to induce resistance in tuberose against the root knot nematode M. incognita. Our results indicate that SA has potential to lower root knot reproduction in tuberose and spraying is certainly a simple method to work with.*