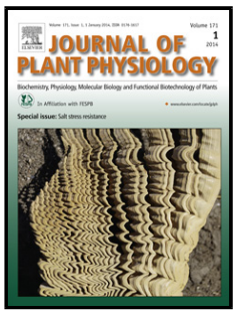

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Changes in lignin biosynthesis and monomer composition in response to benzothiadiazole and root-knot nematode *Meloidogyne incognita* infection in tomato

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Summary

Benzothiadiazole (BTH) acts as a priming agent in plant defence leading to a reduction in penetration and development of the root-knot nematode *Meloidogyne incognita* in susceptible tomato roots. Changes in lignin biosynthesis in the susceptible tomato cv. Roma following nematode infection and/or BTH treatment were investigated in comparison to the resistant cv. Rossol. Both untreated and BTH-treated susceptible infected roots (galls) showed an increased level of expression of lignin synthesis-related genes (*PAL, C4H, HCT* and *F5H*) at early times during infection (2-4 days post inoculation). Peroxidase (soluble and cell-wall bound, POX) enzyme activities increased after inoculation with *M. incognita* and the priming effect of BTH treatment was evident at later stages of infection (7 days post inoculation). As expected, the induction of PAL and POXs and lignin synthesis-related genes was faster and greater in resistant roots after infection. Histochemical analysis revealed accumulation of higher lignin levels at later infection stages in