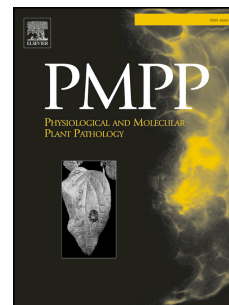


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Early responses of coffee immunity-related genes to root-knot nematode infection

Erika V. S. Albuquerque^{1,2*}, Anne-Sophie Petitot², Joseane P. da Silva¹, Maria F. Grossi-de-Sa¹, Diana Fernandez^{1,2}

1, Embrapa Recursos Genéticos e Biotecnologia, Laboratório de Interação Molecular Planta-Praga, PqEB final W5 Norte, Brasília-DF, 70770-900, Brasil

2, IRD, Institut de Recherche pour le Développement, UMR 186 IRD-Cirad-Université Montpellier "Interactions Plante-Microorganismes Environnement" (IPME), 911 avenue Agropolis, BP 64501, 34394 Montpellier Cedex 5, France.

*Corresponding author: Dr. Erika V. S. Albuquerque

Phone: +55 (61) 3448-4670

Fax: +55 (61) 3340-3624

E-mail: Erika.Albuquerque@embrapa.br

Abstract

The root-knot nematode (RKN) *Meloidogyne incognita* is one of the most damaging parasites of coffee (*Coffea arabica*) plantations. The aim of this study was to compare defense-related genes transcription patterns in resistant and susceptible coffee genotypes after nematode challenge. Root tips of the *C. arabica* 'UFV' (resistant) and 'CV' (susceptible) genotypes were collected at 4, 5 and 6 days post-infection (DPI) with *M. incognita*. The expression patterns of 88 genes related to plant immunity were assessed by qRT-PCR in infected and control coffee roots. In susceptible plants, most of the genes were suppressed from 5 DPI, when nematode feeding sites are induced. In resistant plants, gene expression was mostly activated at 6 DPI, when a hypersensitive response-like phenotype is detectable. Resistance was associated with over-expression of genes coding for Miraculin (defense), RGLG1 (protein degradation), SENA (senescence-associated cell death), NLR (immunity signaling), CaWRK11 (transcription factor), and OBP (cell wall modification). Interestingly, some genes presented contrasting profiles during the compatible (S) and incompatible (R) interactions: *C4H*, *NLR*,

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