

GREEN FLUORESCENT PROTEIN APPLIED TO THE STUDY OF COLONIZATION AND INFECTION OF AVOCADO TREE ROOTS BY *Rosellinia necatrix*

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Rosellinia necatrix Prill. is a soilborne ascomycete fungus that causes white root rot on a wide range of plant species, especially on fruit trees. White root rot is currently one of the most important diseases affecting avocado orchards in Andalusia (Spain) as well as apple, grape and pear orchards in Japan. Characteristic symptoms of this disease are rotting of roots, yellowing and falling of leaves, wilting and, finally, death of the tree. Spanish and Japanese isolates of *R. necatrix* showing different degrees of virulence were tagged with the green fluorescent protein (GFP) by protoplast transformation with plasmid pCPXHY1eGFP. Frequencies of protoplasts regeneration and transformation varied greatly among isolates and were $10^{-5}/10^{-7}$ and $10^{-2}/>10^{-3}$ per 10 μ g of DNA, respectively. Microscopic analysis of the transformants revealed homogeneity of the fluorescent signal, which was clearly visible and stable in the hyphae. Currently, the pathogenicity of wild-type isolates and transformants is analysed, evaluating the disease index after its inoculation in avocado plants. Colonization, infection, and disease development on avocado roots infected with the transformants is being analyzed *in vivo* by scanning confocal laser microscopy; details of these processes will be essential for disease control. To the best of our knowledge, this is the first report describing the utilization of GFP-tagged *R. necatrix* derivatives to analyze the infection process of avocado roots by this pathogen.