



Iron homeostasis and fire blight susceptibility in transgenic pear plants overexpressing a pea ferritin gene

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Résumé en anglais	<p>The bacterial pathogen <i>Erwinia amylovora</i> causes the devastating disease known as fire blight in some rosaceous plants including apple and pear. One of the pathogenicity factors affecting fire blight development is the production of a siderophore, desferrioxamine, which overcomes the limiting conditions in plant tissues and also protects bacteria against active oxygen species. In this paper we examine the effect of an iron chelator protein encoded by the pea ferritin gene on the fire blight susceptibility of pear (<i>Pyrus communis</i>). Transgenic pear clones expressing this gene controlled either by the constitutive promoter CaMV 35S or by the inducible promoter <i>sgd24</i> promoter were produced. The transgenic clones produced were analysed by Q-RT-PCR to determine the level of expression of the pea transgene. A pathogen-inducible pattern of expression of the pea transgene was observed in <i>sgd24</i>-promoter transformants. Adaptation to iron deficiency in vitro was tested in some transgenic clones and different iron metabolism parameters were measured. No strong effect on iron and chlorophyll content, root reductase activity and fire blight susceptibility was detected in the transgenic lines tested. No transformants showed a significant reduction in susceptibility to fire blight in greenhouse conditions when inoculated with <i>E. amylovora</i>.</p>
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