



Using Molecular Tools To Decipher the Complex World of Plant Resistance Inducers: An Apple Case Study

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Auteur	Dugé de Bernonville, Thomas [1], Marolleau, Brice [2], Staub, Johan [3], Gaucher, Matthieu [4], Brisset, Marie-Noëlle [5]
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Résumé en anglais	<p>Exogenous application of plant resistance inducers (PRIs) able to activate plant defenses is an interesting approach for new integrated pest management practices. The full integration of PRIs into agricultural practices requires methods for the fast and objective upstream screening of efficient PRIs and optimization of their application. To select active PRIs, we used a molecular tool as an alternative to methods involving plant protection assays. The expressions of 28 genes involved in complementary plant defense mechanisms were simultaneously determined by quantitative real-time PCR in PRI-treated tissues. Using a set of 10 commercial preparations and considering the pathosystem apple/<i>Erwinia amylovora</i>, this study shows a strong correlation between defense activation and protection efficiency in controlled conditions, thus enabling the easy identification of promising PRIs in fire blight protection. Hence this work clearly highlights the benefits of using a molecular tool to discriminate nonactive PRI preparations and provides useful molecular markers for the optimization of their use in orchard.</p>
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