

GENE EXPRESSION VARIATION IN COCOA INOCULATED WITH ENDOPHYTE

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Cocoa (*Theobroma cacao* L.) culture is of great socio-economic importance for Brazil. The major problem for the cocoa production in this country is the witches' broom disease, caused by the fungus *Moniliophthora perniciosa*. Besides plant-pathogen interactions, important for the development of the disease, endophytic organisms might also be involved in this pathosystem and potential resistance mechanisms. In order to get insight into the molecular bases of the interaction complex "cocoa-endophytes", we analyzed gene expression and the protein profile of cocoa after inoculation with ALB629, an endophytic bacterium isolated from resistant cocoa trees. The analysis was made by macroarrays containing ca. 700 ESTs from cocoa inoculated with *M. perniciosa*. We found a complex pattern of differentially expressed, up- and down-regulated transcripts in cocoa leaves from plants inoculated with ALB629 as compared with uninoculated controls. These differences were also mirrored in the protein profile as revealed on 2D-SDS-PAGE. We proceed now to studies aimed at the definition of the actual role of these genes in the endophyte-cocoa interaction and their putative role in plant defense.



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