

Effect of elicitors on metabolite production in cell suspension of *Piper cumanense* (Piperaceae)

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Plant secondary metabolites represent a wide variety of compounds with essential ecological roles. Moreover, some of them are important in food, pharmaceutical and agriculture industries due to their applications as flavoring and coloring, for treatment of diseases, and pest control. Although research in this field have increased in the last years, it has been difficult to develop and extend more applications due to the low amounts of metabolites produced by plants. Plant biotechnology appears as a valuable alternative for it develops strategies for increasing production of compounds of interest. The purpose of this study was to apply biotechnology techniques to *Piper cumanense* (Piperaceae), a neotropical shrub that produces benzoic acid derivatives with promising bioactivity for control of phytopathogenic fungi; these compounds have been isolated with low extraction yields being necessary to evaluate strategies that could increase their production. Specifically, elicitation on cell suspensions of *P. cumanense* was applied to induce activation of secondary metabolic pathways, and the effect of methyl jasmonate (MeJA) and salicylic acid (SA) on the production of these metabolites was evaluated. Cell suspensions were established from friable callus in M&S liquid medium adding a combination of 2,4-D 1,0 mg/L and BAP 0,5 mg/L, thiamin 1 mg/L, myo-inositol 100 mg/L and sucrose 30 g/L. Fifteen days after acclimatization two concentrations of MeJA and SA (10 and 100 μ M) were separately added to cell suspensions. The effect of elicitors was evaluated in three different exposure times (6h, 12h and 24h). After that, suspensions were harvested using vacuum filtration to separate medium from cells, and extraction of metabolites was conducted using ethyl acetate as solvent. Metabolic profiles of samples were obtained by gas chromatography - mass spectrometry (GC-MS) and analyzed from multivariate statistical methods. The analysis revealed significant differences in profiles related to type of elicitor, concentration and exposure time. It was observed that elicitation induced metabolites production in contrast with control. This research represents an important advance in the development of strategies that could increase metabolites of interest in cell suspensions of *P. cumanense*.