DALLACORTE LV; TONIAL CH; DA SILVA EP; KOZELINSKI A; DABOIT BN; MARCHESE JA.2022. "Erva-baleeira" secondary metabolism under eliciation.
In: CONGRESSO BRASILEIRO DE OLERICULTURA, 56. Anais... Bento Gonçalves-RS: ABH.

"Erva-baleeira" secondary metabolism under eliciation

Lucas Vinicius Dallacorte[1], Carolina Hoppen Tonial[2], Emanueli Pereira da Silva[1], Alexia Kozelinski[1], Bárbara Nicole Daboit[1], José Abramo Marchese[1]

[1]UTFPR – Universidade Tecnológica Federal do Paraná, Pato Branco. Via do Conhecimento, Km 1 - CEP 85503-390 - Pato Branco - PR - Brasil, lucasdallacorte@alunos.utfpr.edu.br, , eps.emanueli@gmail.com alexiakozelinski@alunos.utfpr.edu.br, barbaradaboit@alunos.utfpr.edu.br, , abramo@utfpr.edu.br
[2]IFPR. Instituto Federal Do Paraná, Campus Palmas. Av. Bento Munhoz da Rocha Neto s/nº, PRT 280, CEP: 85555000 - Palmas, PR - Brasil,

ABSTRACT

Leaves of *Varonia curassavica* Jack. are the commercial source α-humulene and β-caryophyllene, sesquiterpenes with anti-inflammatory properties. The objective of this study was to evaluate the effect of two natural elicitors on the sesquiterpene content of *V. curassavica* in order to induce resistance. For this purpose, *V. curassavica* plant material was obtained from CPQBA/Unicamp selection and breeding program. The plant-voucher is deposited in the Unicamp herbarium, number UEC 112744. Field-based plants received the application of acibenzolar-S-methyl [ASM, commercial product Bion® (500 mg L^{-1})], 1,6 -D-glucan (GLUCAN, 50 mg L^{-1}) and distilled water (DW, as a control). Gas exchange rate, terpene enzymes such as phenylalanine ammonia-lyase (PAL), superoxide dismutase (SOD), guaiacol peroxidase (POX) and catalase (CAT) activity and essential oil content in leaves were measured. ASM reduced significantly the net carbon assimilation rate and the intercellular CO_2 concentration, while GLUCAN reduced significantly only the intercellular CO_2 concentration. Total protein content, PAL, SOD and CAT had no significant difference by statistical test when elicited, only POX was stimulated by the use of elicitors. For essential oil yield, there was no significant difference between the treatments. However, the highest value was obtained when with ASM (0.82%) followed by GLUCAN (0.8%) and DW (0.75%). The relative proportions (%) and quantification (mg.100g DW^{-1}) of α-humulene and (E)-β-caryophyllene did not differ among treatments; however the elicitors provided a significant increase in guaiacol peroxidase activity.

KEYWORDS: *Varronia curassavica* Jacq., Systemic acquired resistance, essential oil, enzymes.

ACKNOWLEDGEMENTS

The authors acknowledge Syngenta for providing the resistance inducers and supporting the research. EP da Silva and L.V. Dallacorte acknowledges Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) for the graduate fellowship, finance code # 001. BN Daboit and A Kozelinski thanks Fundação Araucária and CNPq for the undergraduate fellowship.