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ALLELOPATHIC ACTIVITY OF LECTINS FROM Bauhinia holophylla (FABACEAE:CERCIDOIDEAE)

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Plant bioactive compounds can be obtained from plant tissue culture and more specifically through callus culture, which allows the preservation of the species. *Bauhinia holophylla* is a woody species from the Cerrado widely distributed in Brazil. This species contains different bioactive compounds, and lectins have received special attention due to their broad potential against microorganisms, insects, tumor cells and as allelochemicals. This study aimed to assess the allelopathic potential of lectins found in *B. holophylla* callus. Calli were induced from leaf explants of *B. holophylla* in Wood Plant Medium (WPM) supplemented with 4.44 µM 6-benzylaminopurine added with 30 g L^{-1} sucrose and solidified with 7 g L^{-1} agar. The explants were incubated in the presence of light, at 27 °C and 16-h photoperiod for 60 days. Lectins were extracted from fresh callus using sodium chloride (0.9%). The extract was used to confirm the presence of lectin by hemagglutinating activity using human blood. The allelopathic potential was assessed by the effect of lectins on the germination (G), germination speed index (GSI) and elongation of the radicle and epicotyl of *Allium cepa* (onion), a monocotyledonous and *Lactuca sativa* (lettuce), an eudicotyledonous at concentrations of 250, 500, 750 and 1000 µg/mL. MES buffer solution and glyphosate/atrazine were used as negative and positive controls, respectively. For onion seeds there was a decrease in the percentage of G and in the GSI in the presence of the lectin extract at a concentration of 750 µg/mL, when compared to the atrazine ($p<0.05$). Lectin extract did not affect the G and GSI of lettuce seeds. Lectin extract reduced the elongation of the onion radicle and epicotyl at concentrations of 250, 750 and 1000 µg/mL, with the lowest concentration being the most effective with a 32% reduction ($p<0.05$). Lectin extract at 250 µg/mL increased the elongation of the epicotyl in lettuce (17%) and no changes were observed in radicle elongation when compared with the controls. These results suggest a possible allelopathic activity of lectin from *B. holophylla* callus, especially on monocotyledonous species. The authors thank the support from UFSJ, CNPq and FAPEMIG (APQ-00861-22 and APQ 00000-23). This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001.

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