EFFECT OF LEUCAENA ON GERMINATION AND GROWTH ON WEED SPECIES OF SAVANAS (CERRADO) MAIZE CROP.

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Leucaena is a legume found in tropical region and has been used as protein source for animal food and recovery of degraded areas. Leucaena shoot as mulch or incorporated to the soil can liberate substances produced in its secondary metabolism, such as mimosine (b-[N-(3-hydroxi-4-oxopyridil)]-a-aminopropionic acid), which has the ability to influence the growth of other plants. The use of those compounds as alternative to synthetic herbicides has been the focus of research to prevent environmental contamination. Bioassays were conducted to determine the potential effect of leucaena (*Leucaena leucocephala*) on the germination and growth of three weeds occurring in the savanas maize crop, namely *Amaranthus deflexus*, *Bidens pilosa*, *Siegesbeckia orientalis*. Two aqueous extracts from fresh and dry shoots were prepared in a concentration of 20% (w/v), using either hot (80 °C) and cold water. Different concentration (2.5; 5.0; 10.0 and 20.0%) of the aqueous extracts have not shown significant reduction on the germination of the species tested. However, the growth of seedling of those species decreased with the increasing amounts of the aqueous extracts, specially with the extract obtained with hot water. Radicle elongation was the most sensitive indicator of the effect of extracts. HPLC analysis showed mimosine in high concentration (~1400 mg mL^{-1}) in the hot crude extract, but lower concentration (~530 mg mL^{-1}) was found in the cold extract. It is supposed that mimosine is the substance responsible for the effect on the growth of the species tested.

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