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STUDY OF THE PHYTOTOXIC POTENTIAL OF SPHAGNETICOLA TRILOBATA ON IPOMOEA SPP AND LACTUCA SATIVA.

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INTRODUCTION: The excessive use of chemical herbicides contributes to environmental degradation and biodiversity loss. Allelopathy emerges as a sustainable alternative, and *Sphagneticola trilobata,* a plant in the Asteraceae family, stands out for its allelopathic potential, containing phenolic and flavonoid compounds with inhibitory effects on other plants.

OBJECTIVE: To evaluate the phytotoxic effects of aqueous extracts of *S. trilobata* on model species *Ipomoea spp*. and *Lactuca sativa*, aiming to verify effects of growth stimulation or inhibition in addition to effects of impacts on non-target organisms.

METHODOLOGY: Dried leaves of *S. trilobata* were extracted in distilled water (12.5, 25, and 50 g/500 mL). Bioassays were conducted with *Ipomoea* and *Lactuca sativa* seeds exposed to different concentrations (25%, 50%, 75%, 100%) for 7 days in B.O.D.. Germination and root and hypocotyl growth/inhibition were evaluated by calculating the growth/inhibition index. Analysis of variance (ANOVA) was performed for the biological assays presented. The significance level was set at *$p<0.05$. Results were expressed as mean ± standard deviation. Statistical analyses were performed using GraphPadPrism 5.0 software.

RESULTS: *S. trilobata* extracts exhibited dose-dependent effects. Lower concentrations (between 15.625 and 62.5 mg/L) significantly stimulated root and hypocotyl growth, particularly in *Ipomoea* and *Lactuca sativa*. Higher concentrations (≥125 mg/L), on the other hand, inhibited this growth, demonstrating a potential hormetic effect. Roots were more sensitive than hypocotyls.

CONCLUSION: *Sphagneticola trilobata* demonstrated phytotoxic potential with biphasic effects—stimulation at low doses and inhibition at high doses. This highlights its potential use as a natural bioherbicide, contributing to more sustainable agricultural practices.

Keywords: *Sphagneticola trilobata, phytotoxic,Ipomoea Spp, Lactuca sativa*