



ALLELOPATHIC STUDIES OF *ARACHIS REPENS*

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The vegetal species *Arachis repens*, commonly known as *peanut grass*, is used as an ornamental, forage and ground cover in substitution of common grass species [1]. Throughout the last decades, many research reports were published on compounds from plants with allelopathic activity showing their inhibitory or stimulatory effects on various crop plants [2]. The purpose of this work was to determine optimal solvent for the extraction allelopathic compounds in *A. repens*. The dried aerial parts and stems were macerated with different solvents (hexane, dichloromethane and methanol) to obtain the crude extracts. The partitions (hexane, dichloromethane, ethyl acetate and aqueous residue) were obtained from methanol crude extract. To determine germination and growth inhibition, extract of aerial parts and stems were tested for allelopathic activity on lettuce (*L. sativa* ‘White Boston’) at different concentrations (ranging from 1000 to 100 ppm, n = 360, for each extract). Inhibition and/or delay of germination was observed on lettuce at 1000 ppm in all tested extracts. At 1000 ppm, methanol, dichloromethane and hexane extracts showed inhibition effects against lettuce root growth. Effects on roots elongation were greater than those observed on shoot growth. Among all tested extracts the methanolic extract from stems at 1000 ppm showed the better result by inhibition of 79% of root growth. There was a significant inhibition effect on hypocotyls and roots mainly in dichloromethane and ethyl acetate partitions obtained from methanolic stems extract. Inhibition levels in dichloromethane partition reached 98% in roots and about 95% in the hypocotyls. Ethyl acetate partition reached 80% inhibition of roots and 59% in hypocotyls growth. The isolated mixture of substances indicates the presence of steroids such sitosterol and stigmasterol in the stems extract. To these substances were attributed allelopathic activity known in the literature. Allelopathic activity of *A. repens* was attributed to methanolic extract and at dichloromethane and ethyl acetate partitions from stems.

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References

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