

**PHYTOTOXICITY EFFECT OF THREE INVASIVE  
PLANT SPECIES: *Mimosa pigra*, *Parthenium  
hysterophorus*, *Ulex europaeus***

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By

**WEERAPPULLIGE DILANKA PRASANGANI**

**Science and Technology Degree Program**

**Uva Wellassa University, Sri Lanka**

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## ABSTRACT

Invasive plants are the plants that have an ability to thrive and spread aggressively outside its natural range. They adversely affect to the habitats, they invade economically and environmentally and they have an ability to inhibit the growth of other plant species by means of phytotoxicity. Phytotoxicity effect of invasive plant can be used to produce synthetic herbicides. In this study trial to screen the invasive plant for their phyto toxicity effect. *Parthenium hysterophorus*, *Mimosa pigra* and *Ulex europaeus* are used for the experiment which is spread aggressively in Sri Lanka by harming to other useful plants. For this study water extracts of fresh flower & dry leaves of *Parthenium hysterophorus*, *Mimosa pigra* and *Ulex europaeus* were obtained and the experiment was conducted with three factor factorial designs. Resulted water extracts were tested for phyto toxic activity against germinating and growing green gram (*Vigna radiata*) seed in five different concentrations including stock solution of the extraction for one week. Germination of the seeds was observed after 24 hours. The highest germination reduction was recorded in 50% concentration of *Parthenium hysterophorus* dry leaves. Both fresh flowers and dry leaves extraction of *Ulex europaeus* were not highly affect to the germination rate of the green gram seed. Fresh flower of *Mimosa pigra* was not highly affect to the germination rate of the green gram seed. Considerable decrement was shown in most of the test concentrations during one week exposure time and the results obtained show a gradual increment in phytotoxicity ability along with the concentration. According to the ANOVA there was a significant interaction effect of concentration, plant species, and plant part to the germination of green gram seeds ( $p < 0.05$ ). *Parthenium hysterophorus* dry leaves water extract was more effective even at the lower concentrations compared to other test water extracts and can be developed as a weedicide. *Mimosa pigra* was shown considerable amount of toxicity especially in fresh flower extraction. *Ulex europaeus* was shown less amount of phyto toxicity compare with others. *Ulex europaeus* fresh flowers were not shown any phyto toxic effects.