457D

Effect of *Parthenium hysterophorus* L. residues on Chilli (*Capsicum annum* L.)

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Parthenium hysterophorus (Family- Asteraceae) is a recently found herbaceous invasive weed in Sri Lanka. Even though chemical eradication methods minimize its distribution, decomposition of residues continue the release of allelochemicals to soil. At the same time decomposition also add nutrients to the soil. The aim of this study was to investigate the effect of Parthenium residues on germination and growth of Chilli. The Objectives were

- to determine the effect of decomposing residues on germination and growth of chilli
- to assess the changes in nutrient levels [available Nitrogen (N), Phosphorus (P), Potassium (K), organic matter] during decomposition

Dried Parthenium residues were separately mixed together with the growing medium (mixture of soil) and allowed to decompose for 0, 1, 2 and 3 months at room temperature. Growing medium without residues was the control. Germination characteristics were observed in 1000 Chilli (variety MI 2) seeds subjected to each treatment. Three week old Chilli seedlings were introduced to (40 per each) treatments and the growth (was monitored for 3 months. Biomass was measured at the end.

At the end of each decomposition period, residue mixtures and the medium without residues were analysed for N, P, K and organic matter. The percentage increase of above nutrients per gram weight of mixture was calculated.

The study showed that the Final germination percentage of Chilli seeds was not affected by addition of either Parthenium fresh residues or decomposed residues. However, seeds sown with fresh residues germinated relatively slowly compared to the decomposed Parthenium residues. The overall growth (plant height, number of leaves/ flowers /fruits) was significantly higher in plants grown in a medium with one month decomposed Parthenium residues.

Favourable nutrient levels (higher levels of N, P, K) provided by Parthenium residues and probably less toxicity due to allelochemicals due to decomposition of residues would have assisted the Chilli plants to grow better. The toxicity due to allelochemicals of Parthenium would have been higher in fresh state as indirectly indicated by the germination experiment.

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