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Competitive effect of *Parthenium hysterophorus* L. on *Capsicum annuum* L. (Chilli) in the presence of *Cyperus rotundus* L. and *Vernonia cinerea* (L.) Less

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Parthenium hysterophorus L. (Family – Asteraceae) is a recently recorded invasive plant in Sri Lanka. Its occurrence is reported in many agricultural fields of Chilli, Maize, Sesame and vegetables in dry and the intermediate zones. Growth reduction and severe yield loss have been observed in these crops following *Parthenium* invasions.

The aim of the study was to investigate the competitive ability of *Parthenium hysterophorus* on Chilli in the presence of *Vernonia cinerea* and *Cyperus rotundus*. The objectives were to investigate the competitive effect of *Parthenium*, *Vernonia* and *Cyperus* individually as well as their combinations on vegetation growth, flowering and fruiting of Chilli. Thus, Chilli, *Parthenium Vernonia* and *Cyperus* were grown together so as to achieve different crop-weed combinations. The following combinations were considered as treatments with 5 replications according to a complete randomised design. Chilli only (C), Chilli + *Parthenium* (CP), Chilli + *Cyperus* (CC), Chilli + *Vernonia* (CV), Chilli + *Parthenium* + *Cyprus*(CPC), Chilli + *Parthenium* + *Vernonia* (CPV), Chilli + *Vernonia* + *Cyperus* (CVC). Height, number of leaves and flowers of Chilli plants were measured/ counted. At the end of the experiment, biomass of the crop and weeds were also measured.

A significant reduction in both vegetative and reproductive growth of Chilli was observed when Chilli was grown with different weed(s) compared to Chilli plants grown alone. Among single crop-weed interactions (CP, CV, CC) Chilli grown with *Parthenium* (CP) showed the minimum growth. When more than one weed was considered (CPC, CPV, CVC) Chilli plants grown with *Parthenium* and *Vernonia* (CPV) showed the minimum vegetative and reproductive growth where as biomass of *Vernonia* was significantly increased when it was grown with *Parthenium* (CPV). Chilli plants grown with *Parthenium* and *Cyperus* (CPC) achieved a superior growth than when they were grown with either of weed individually (CP, CC). Biomass of *Parthenium* was significantly reduced when it was grown with *Cyperus* (CPC). Thus, *Parthenium* is shown to be the worst weed in the absence of other weeds, but *Cyperus* seems to suppress the growth of *Parthenium* when they were grown together.

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