

Conference abstract PO-52

## **Phytotoxicity of a Medicinal Plant, *Peganum harmala* L., Against Germination and Seedling Growth of Wild Oat (*Avena fatua* L.)**

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*Peganum harmala* L. (family Zygophyllaceae) is a medicinal herb native to dry areas ranging east Mediterranean to northern India [3]. Different plant parts are used to treat several types of diseases [1]. In folk medicine, *P. harmala* seeds are used as an anti-microbial and anti-hemorrhoidal [2], whereas it also stimulates the central nervous system (CNS) [3]. Information on the phytotoxic properties of medicinal plants are limited. The aim of the present investigation was to evaluate activity of inhibitory substances released by fresh *P. harmala* material on germination and early growth of *Avena fatua* L. Sixteen g fresh *P. harmala* leaves was soaked in 100 ml distilled water for 24 h. After filtering and centrifuging, the extract was diluted with sterile distilled water to concentrations of 4, 8, 12 and 16% (w/v). Fifteen seeds of *A. fatua* were placed in Petri dishes containing 5 ml of each *P. harmala* extract (or distilled water for control). Results indicate that aqueous extract of *P. harmala* show strong inhibitory effects on germination and growth of *A. fatua*. At highest extract concentration, 72% reduction in germination was observed when compared to control. Both root length and root dry weight were affected and that the effect was concentration-dependent. There was also a significant decrease in total chlorophyll content of *A. fatua*. This reduction was approximately 59% for the highest extract concentration based on control. The adverse effect on *A. fatua* indicates the presence of some water-soluble inhibitory substances in *P. harmala* aqueous extract. Extracts were found to contain significant amounts of water-soluble phenolic compounds which indicate the direct involvement of phenolics in the observed growth inhibitions. The study concludes that *P. harmala* is not only useful for its pharmacological properties but might also be used for biological weed control.

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