

## **ALLELOPATHIC INFLUENCE OF *JATROPHA CURCAS* LINN. ON GERMINATION AND SEEDLING GROWTH OF SELECTED FIELD CROPS**

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**ABSTRACT:** The allelopathic effect of *Jatropha* involves the influence of aqueous leaf extracts on maize (*Zea mays* L.), mung (*Vigna radiata* L.) and mustard (*Brassica campestris* L.). The experiment was carried out at the laboratory of SHIATS, Allahabad in order to investigate the compatibility of these crops. All the test crops were imposed with 0 %, 1 %, 3 % and 5 % of aqueous leaf extracts of *Jatropha curcas* at room temperature. Germination, seedling growth (plumule and radicle), biomass (fresh as well as dry) and vigour index was significantly inhibited by various leaf extract concentrations. Only control treatment (without leaf extract) revealed the promotory behavior in terms of studied growth parameters. It was also observed that, the germination was less phytotoxic than seedling growth and phytomass contribution. Among the test crops, *Brassica campestris* recorded with highest germination (96.25 %) but seedling growth (19.63 cm), vigour index (1727.44), fresh biomass (1.64 gm), Quality index (0.098) and Sturdiness quotient (7.20) was found superior in case of *Zea mays*. 5 % leaf extract results in maximum reduction of germination (65 %), seedling growth (5.2 cm), fresh biomass (0.30 gm), vigour index (338.00) and Quality index (0.006) in case of *Vigna radiata*. The overall allelopathic potential on the test crops can be arranged as- *Zea mays* > *Brassica campestris* > *Vigna radiata*. The maize crop was attributed with higher sturdy potential and least suppression therefore could be suggested as an effective companion with *Jatropha* in comparison to evaluated test crops.

**Keywords:** *Allelopathy, biomass, germination, Jatropha, seedling growth, vigour.*

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