

Chapter - 7

Effects of Allelochemicals Released by *Jatropha gossypifolia* L. on Morphology of *Cicer arietinum* L.

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Abstract

India is the land of biodiversity. Nature acts as a good providing source for both human being and animal kingdom. Allelopathy has been known and utilized in horticulture since the old occasions. Allelopathy is a typical natural marvel by which one living being produces biochemicals that impact the development endurance advancement and multiplication of different life forms. These biochemicals are known as allelochemicals and have valuable or unfavourable consequences for target organism. Allelochemicals are used as herbicides, insecticides, growth regulators and antimicrobial crop protection products. There are several chemicals such as; phenolic compounds, terpenoids, alkaloids, flavonoids which is present different parts of plant including leaves, flowers, stems, bark and roots can have allelopathic effect. In this experiment the leaves of *Jatropha gossypifolia* were dried and grinded. From the powder different concentration of aqueous extracts were prepared (i.e. 10 mg/ml, 50 mg/ml, 100 mg/ml and 200 mg/ml). These extracts were applied on seeds of *Cicer arietinum*. From the experiment it was found that leaf extracts of *Jatropha gossypifolia* affected root length, shoot length, seed germination, radical length, water content and chlorophyll content of *Cicer arietinum* under laboratory condition. Present study and previous works show that use of weed extracts defence plant against its enemies. To ensure reasonable agrarian improvement it is imperative to exploit cultivation frameworks that exploit the stimulatory/inhibitory impact of allelopathic plants to manage plant growth, advancement and to keep away from allelopathic autotoxicity.

Keywords: allelopathy, biochemicals, *Cicer arietinum*, *Jatropha gossypifolia*, herbicides

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