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## Indian Journal Of Agricultural Research

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Allelopathic Influence of *Rauwolfia tetraphylla* L. for Enhancing the Seedling Root Vigour of Gram (*Cicer arietinum* L.)

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## Abstract

**Background:** Advanced genotype may not expose properly due to unhealthy seedling of low-vigour seed which can be upgraded through seed invigoration. The advanced seedling performance primarily depends on steady rhizospheric configuration though roots are least known and least acceptable part in crop study schedule particularly at germination. In existing study, the rhizosphere pattern and seedling performances are evaluated through allelopathic action on seed-vigour. Different seedling parameters with categorized rhizosphere pattern specified the effective role of allelopathy.

**Methods:** The allelopathic action of *Rauwolfia tetraphylla* L. root extracts was assessed on alignment of rhizosphere pattern in gram seedling (*Cicer arietinum* L.). Various aqueous root extracts (200, 150, 100, 50, 25 and 12.5 mg ml<sup>-1</sup>) were prepared from young roots of *Rauwolfia tetraphylla* L. and the action was observed at 8th and 14th day on seedling especially on root after overnight soaking of seed.

**Result:** Significant variation was found in diverse seedling and root parameters. The roots extract (100 mg ml<sup>-1</sup>) stimulated total root length, surface area etc. which was also legitimated in shoot length, vigour index of the seedling. In most cases, allelopathic actions on seed enhanced the quality through modification of rhizosphere pattern with seedling performances than control. Therefore, it can be considered for seed invigoration under Gram seed/crop production programme.

## Keywords

Allelopathy Cicer arietinum Rauwolfia tetraphylla Root extracts Rhizosphere

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