

## Allelopathic studies in relation to germination of *rabi* and *kharif* weed seeds

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**Key words :** Allelopathic, *rabi*, *kharif*, Weed seed.

The term allelopathy includes both detrimental and beneficial effects of one plant upon another. Joshi and Prakash (1992) studied allelopathic effects of litter extract of some tree species on germination and seedling growth of agricultural crops. Allelopathic studies in relation to germination of *Echinochloa crusgalli* seeds was studied by Tripathi and Tripathi (2002). The present study was undertaken to observe the effect of radish root extract on the germination of *rabi* and *kharif* weed seeds. The experiment was conducted during the year 2003 and 2004 under laboratory conditions.

Fresh radish roots were crushed to prepare 1, 2, 3, 4 and 5 per cent extract. Filter papers were placed in glass petridishes and 100 seeds were sown in each dish arranged in complete randomized design. Extracts were applied to moisten the filter paper and lids were placed to cover the

open surface of petridishes. After 10 days germinated seedlings were counted and per cent germination was calculated.

The results in Table 1 revealed that radish root extract was most effective to inhibit maximum germination of *rabi* and *kharif* weed seeds. Highest germination was observed at control treatments in all the weeds. Germination of *Phalaris minor*, *Chenopodium album* and *Melilotus indica* was minimum at 4 per cent extract concentration. Germination of *kharif* weeds like *Echinochloa colona*, *Echinochloa stagnina* and *Fimbristylis dichotoma* was suppressed at 4 per cent extract. Thus, use of radish root extract was effective to control the germination of dominant weeds of *rabi* and *kharif* season crops.

**Table 1: Effect of radish root extract on the germination of *rabi* and *kharif* weed seeds**

Extract concentration (%)	Germination percentage					
	<i>rabi</i> weed seeds			<i>kharif</i> weed seeds		
	<i>Phalaris minor</i>	<i>Chenopodium album</i>	<i>Melilotus indica</i>	<i>Echinochloa colona</i>	<i>Echinochloa stagnina</i>	<i>Fimbristylis dichotoma</i>
Control	72.66 ± 3.33	15.66 ± 3.66	42.66 ± 4.33	50.00 ± 4.00	50.00 ± 4.00	33.33 ± 4.33
1.00	70.00 ± 4.00	15.66 ± 3.66	31.33 ± 4.33	35.00 ± 3.50	36.66 ± 3.66	18.66 ± 3.66
2.00	45.66 ± 3.66	11.66 ± 4.33	22.66 ± 3.66	26.66 ± 3.66	31.66 ± 3.33	18.66 ± 3.66
3.00	34.33 ± 3.66	10.33 ± 3.66	18.33 ± 3.66	25.00 ± 3.00	23.33 ± 3.33	14.33 ± 3.33
4.00	23.66 ± 3.33	6.66 ± 3.33	10.33 ± 3.33	15.66 ± 3.33	13.33 ± 3.66	12.66 ± 3.33
5.00	23.66 ± 3.33	6.66 ± 3.33	10.33 ± 3.33	15.66 ± 3.33	13.33 ± 3.66	12.66 ± 3.66

### REFERENCES

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Tripathi, J.S. and Tripathi, Rupam (2002). Allelopathic studies in relation to germination of *Echinochloa crusgalli* seeds. *Indian J. Environ. & Ecoplan.*, **6** (2) : 377-378.

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