IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

ALLELOPATHIC EFFECT OF *CHENOPODIUM QUINOA* L. *LEAVES* ON *CASSIA AURICULATA* SEEDS.

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ABSTRACT

Weed plants competition are responsible for reduction or increasing in crop yield. These allelochemicals inhibit growth of some plant species while at they may stimulate it. In order to evaluate allelopathic effect of *Chenopodium quinoa* L. *a* leaves on *Cassia auriculata* seeds was employed. There was reduction in germination of cassia seeds due to the treatment of leaf extracts. Inhibitory effect of extracts on root, shoot and total seedling length was reported.

Key words: Allelochemicals, *Chenopodium quinoa* L., *Cassia auriculata*

INTRODUCTION

Allelopathy is a biological phenomenon by which an organism produces one or more biochemicals that influence the germination, growth, survival, and reproduction of another organism. These biochemicals are known as allelochemicals and can have beneficial (positive allelopathy) or (negative allelopathy) effect on the target organism and the community. Allelochemicals are a subset of secondary metabolites which are not required for metabolism growth and reproduction of the plants and are importance part of the plant defences against herbivores.

Weeds are unwanted plant species growing in the domesticated crop plants. Weeds are important biotic constraint to food production. Weed competition are responsible for reduction or increasing in crop yield. The weed-weed interaction greatly influences the weed biodiversity in natural ecosystems. The effects of allelochemicals on plant germination and growth have been reported i.e. the biochemical interaction between plant to plant either stimulatory or inhibitory. These allelochemicals inhibit growth of some plant species while at they may stimulate it. Stimulatory allelopathic effect are utilized to develop growth promoters while inhibitory for weedicides.

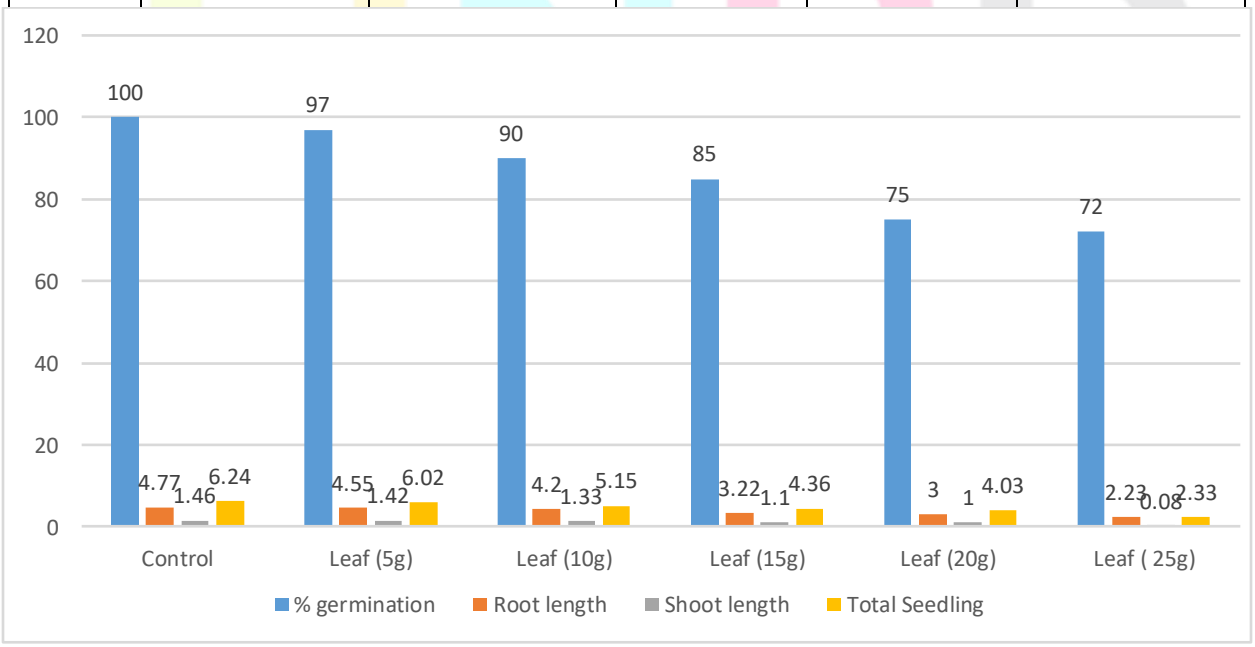
MATERIALS AND METHODS

In order to evaluate allelopathic effect of *Chenopodium quinoa* L. leaves on *Cassia auriculata* seeds was employed. *Chenopodium quinoa* L. plants growing along road sides of Ahmednagar area were uprooted at flowering stage, brought into the laboratory, washed thoroughly with tap water and blotted for surface drying. Leaves are separately grind with 100ml distilled water. The extracts are filtered through muslin cloth. The seeds were placed in Petri dish lined.For control 10 ml of distilled water was used. *Cassia auriculata* seeds are germinated in Petri dishes. Emergence of radicle was considered as criterion for seed germination and after 7 days, root and shoot lengths of the seedlings were measured. The data were statistically analysed using Microsoft excel.

RESULTS AND DISCUSSION

Allelopathic effect of leaf extracts of leaf extracts of *Chenopodium quinoa* L. on seed germination and seedling growth is shown in table no.1. The extracts showed considerable inhibition of seed germination with decreased root and shoot lengths. The leaf extracts no affect germination of cassia seeds. There was reduction in germination of *Cassia* seeds due to the treatment of leaf extracts. Inhibitory effect of *Chenopodium quinoa* L. leaves extracts on root, shoot and total seedling length was reported shown in Graph I.

Sr. No.	Treatments	*Cassia auriculata*			
		% germination	Root length	Shoot length	Total Seedling
1)	**Control**	100	4.77	1.46	6.24
2)	**Leaf (5g)**	97	4.55	1.42	6.02
3)	**Leaf (10g)**	90	4.20	1.33	5.15
4)	**Leaf (15g)**	85	3.22	1.10	4.36
5)	**Leaf (20g)**	75	3.00	1.00	4.03
6)	**Leaf (25g)**	72	2.23	0.08	2.33



Graph I

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