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Research Article

Allelopathic Effect of Different Concentration of Leave Extract of *Lawsonia inermis* L., Seed Germination of *Steria italica, Pennisetum americanum* and *Lectuca sativa*

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ABSTRACT
In the laboratory trial the extract of leaves, of *Lawsonia inermis* L was made in distilled water and kept for 24hr, 48hr, 72hrs against three test species *Lectuca sativa¸steria italica* and *Pennisitum americanum*. The leaf extract showed inhibition *Lectuca sativa >steria* italica *>Pennesitum americanum* in terms of germination percentage and seedling growth and fresh and dry weight. The 1.0 gm at 48hr extract showed completely inhibition in *seteria italic* and *lectuca sativa*. *lectuca sativa* showed inhibition in germination percentage and fresh and dry weight in 0.5 and 1.5 gm. The extract of leaf showed highly stimulation in seedling length of *Pennisitum americanum* in all concentrations. On the other hand, the concentration of (0.5, 1.0, 1.5gms) showed the inhibition in germination percentage and fresh and dry weight. The leaf extract showed the insignificance in all test spp. Hence, it is help to the hypothesis that *Lawsonia inermis* L contain such allelochemical which affect the seedling growth and germination rate of *Steria italic Pennesitum americanumL* and *Lectuca sativaL*.

Keywords: *Lawsonia inermis*, seed, Germination, seedling

INTRODUCTION

In recent times, studies on utilization of plants with strong allelopathic potential for weed control and minimizing dependency on synthetic herbicides have been widely published. The extensive use of agrochemicals especially fungicides, which to pose more of carcinogenic risk than other pesticides may give rise to undesirable biological effects on animals and human beings[1]. Therefore, the development of biopesticides has been focused as a viable pest control strategy in recent years[2]. One source of potential new pesticides is natural products produced by plants. Plant extracts and essential oils show antifungal activity against a wide range of fungi[3-5]. It was noticed that root content with high allelochemicals due to which it is toxic for plumule growth while extracts of stem showed stimulatory effect worked on Allelopathy and they observed that residue of sunflower had different effect on seed weight, height and growth of plant[6].It has been suggested that the crops affected were not only due to remains of plant but the soil also effect the growth of crops. Furthermore, worked on the effect of allelopathy[7]. Allelopathic plants release such chemicals inhibit their neighboring plants which effect the aphid host plant acceptance. this process was not occurring only in Laboratory experiment but it was also observed in the field condition. These phototoxic substances are considered to be residue of the main metabolic pathway in the plants and these are not act as a primary metabolism which are important for the existence of plants. Seed size is an essential part of plant life and its significance to plant growth and fitness strategy are extensively appreciated[8-11]. Selection of the seeds on the basis of the number of important characters that it possesses greatly increases the yield of crops such as 50% in wheat[12-17]. The main aim of current study is to investigate which part of plant has high inhibitory effect and to separate a plant that inhibits the growths of its neighboring plant. Moreover, the present study also deals with the study of allelopathic plants used in crop rotations and to synthesize allelochemicals for their herbicidal applications.

MATERIALS AND METHOD

Lawsonia innermulis plant was obtained from Sindh (Larhkana). The leaves were separated from plant and dried at room temperature. Dried plant material was crushed by mortar and pistil.

Apparatus used in experiment

In the present study conical flask¸ filter paper¸ mortar and pistil¸ aluminum foil¸ funnel ¸digital balance¸ and petridishes was used for preparation of extract and seed

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Table 1: Effects of aqueous extract of Lawsonia inermis L. leaves on germination percentage of steria italic each value is mean of 5 replicates.

S. NO.	Treatment	Germination Percentage	Control Percentage
1	Control	100%	
2	0.5gm		
	24hrs	100%	100%
	48hrs	100%	100%
	72hrs	84%	84%
3	1.0gm		
	24hrs	72%	72%
	48hrs	56%	56%
	72hrs	72%	72%
4	1.5hrs		
	24hrs	100%	100%
	48hrs	84%	84%
	72hrs	88%	88%

germination. Seeds were germinated in the germinator with 20% of humidity and temperature of germinator was set at 25 Cº.

Preparations of extract

Extract was prepared by soaking different concentrations (0.5¸1.0 and 1.5gm) of dried crushed leaves.250ml of conical flask was used at room temperature. Powdered plant material was dissolved in 100 ml of distilled water in separated conical flasks allow for different time periods such as 24hr, 48hr and 72hrs.

The extract was filtered and stored in bottles and covered by aluminum foil prepared further fresh extract by using of same method.

Germination studies

Seeds were germinated growth chamber model R1-201 H germinator for viability pediment observed germinated seeds¸ radical plumule length and seedling moisture content fresh and dry weight against each different concentrations of extract.

Germination studies verses control

In controlled condition distilled water was used. Seeds were placed in petridishes with double Whitman filter paper. There were five replicates of each treatment along with control was used. Five seeds of test species were randomly placed on filter paper. After 7 days' length of radical and plumages of each seed was précised with a ruler and fresh and dry weight of seedling were obtained by weighing machine.

Germination studies of different concentration from different parts of plant verses different plant species.

Statistical analysis

Anova was applied to the data.

RESULTS AND DISCUSSION

Test Species Verses different extract

Steria italic, Lactuca sativa and *Penisitum americanum* were used as test spp. against different aqueous extract of *Lawson irnuealmis*. In the experiment Observed germination percentage, seedling' length of radical and plumul' and fresh and dry weight of the seeds.

Lawson irnuealis (Leave extract)

Leave extract of 0.5 gm '1gm and 1.5gm dissolved in to 100 ml of distilled water to make aqueous extract. These extract were allowing for different duration 24hrs'48hrs'and 72hrs.

Lawsonia inermis L. against *Steria italica* seeds

Aqueous extract of seeds (0.5gm) from 24hrs

Seed were treated with aqueous extract (0.5gm leave) of 24hrs for one week after 1-week germination was showed 100%. when compared to control germination as presented in Table 1.

The average length of the radical was 2.202 ±1.533 and plumule was 1.376 ±1.351. The radical plumule values for control was 2.536±1.863 and 2.468±1.273. There was inhibition in radical plumule growth.

The average fresh and dry weight was 0.418gm and 0.32gm when compared with fresh and dry weight of control that was 0.466gm and 0.358 the extract showed inhibition.

Leave extract (0.5gm) from 48hrs

Seeds were treated with aqueous extract (0.5gm leave) of 48hrs for one week after one-week germination was showed 100% when compared to control germination as presented in Table 1. The average length of radical was 3.212±0.526 and plumule was3.3583±357. The radical plumule values for control was 2.536± 1.863 and 2.468±1.273. There was stimulation of radical plumule growth. The average fresh and dry weight was 0.27gm and 0.17 when compared with fresh and dry weight of control that was 0. 466and 0.358 the extract showed inhibition.

Leave extract (0.5gm) from 72 hrs

Seeds were treated with aqueous extract (0.5gm leave) of 72 hrs for one week. After one-week germination was showed 84% when compared to control germination that was 100% leave extract showed inhibition as presented in Table 1. The average length of radical was 7.268±10.681 and plumule was 6.976±8.448.the radical plumule values for control was 2.536±1.863 and 2.468±1.273 there was stimulation of radical plulmule growth. The average fresh and dry weight was 0.16 gm and 0.09 when compared with fresh and dry weight of control that was 0.466 and 0.358 the extract showed inhibition.

Leave extract (1.0 gm) from 24hrs

Seeds were treated with aqueous extract (1.0 gm leave) of 24 hrs for one week. After one-week germination was showed 72% when compared to control germination that was 100 % leave extract showed inhibition as presented in Table 1.

The average length of radical was 3.34±0.312 and plumule was 4.55±0.675. The radical plumule values for control was 2.536±1.863 and 2.468±1.273 there was stimulation in radical plumule growth. The average fresh and dry weight was 0.074 gm and 0.012 when compared with fresh and dry weight of control that was 0.466 and 0.358 the extract showed inhibition as presented in Table 2.

Leave extract (1.0gm) from 48hrs

Seeds were treated with aqueous extract (1.0 gm leave) of 48 hrs for one week. After one-week germination was showed 56% when compared to control germination that was 100% leave extract showed inhibition as presented in Table 1. The average length of radical was 0.50±0.635 and

Table 2: Effects of aqueous leave extract of Lawsoniainernueilis on germination percentage of steria each value is the mean of 5 replicates.

S.NO.	Treatment	Fresh weight	Dry weight	M.c=diff/D.W×100	Percentage of Control
1	Control	0.466	0.358	30.16	
2	0.5Gm				
	24Hours	0.418	0.325	28.61	94.8%
	48 Hours	0.26	0.17	52.94	175%
	72Hours	0.16	0.09	77.77	257%
3	1.0Gm				
	24Hours	0.074	0.012	61.56	204%
	48Hours	0.04	0.02	100	331%
	72Hours	0.32	0.01	3100	102%
4	1.5Gm				
	24Hours	0.21	0.02	950	314%
	48Hours	0.13	03	104.33	345%
	72Hours	0.16	0.046	247.82	821%

Table 3: Anova table for Steria italica plumule and radical length against leave extracts of Lawsaniainermis

Source of variation. Plumule	Degree of freedom	Sum of squares	Mean of squares	Computed .F
Between SS	9	120.8731	137.8747	2.9654
Within SS	40	1859.74	46.4935	
Radical				
Between SS	9	169.1896	18.7988	1.4932
Within SS	40	503.5819	12.5895	

Insignificance in radical and plumule

Table 4: Effects of Aqueous leave extract of Lawsonia inermis L. on germination percentage of lactuca sativa each value is mean of 5 replicates.

S. NO.	Treatment	Germination percentage	Control percentage
1	Control	100%	
2	0.5gm		
	24hrs	68%	68%
	48hrs	44%	44%
	72hrs	48%	48%
3	1.0 gm		
	24hrs	0%	0%
	48hrs	0%	0%
	72hrs	0%	0%
4	1.5gm		
	24hrs	4%	4%
	48hrs	8%	8%
	72hrs	8%	80%

plumule was 4.2±0.879. The radical plumule values for control 2.536±1.863 and 2.468±1.273 there was inhibition in radical plumule growth. The average fresh and dry weight was 0.04 gm and 0.02 when compared with fresh and dry weight of control that was 0.466 and 0.358 the extract showed inhibition as presented in Table 2.

Leave extract (1.0gm) from 72 hrs

Seeds were treated with aqueous extract (1.0 gm leave) of 72 hrs for one week. After one-week germination was showed 84% when compared to control germination that was 100% leave extract showed inhibition as presented in Table 1. The average length of radical was 1.71 ±0.474 and Plumule was 1.18±0.201. The radical plumule values for control 2.536±1.863 and 2.468±1.273 there was inhibition in radical plumule growth. The average fresh and dry weight was 0.32 gm and 0.01 when compared with fresh and dry weight of control that was 0.466 and 0.358 extract showed inhibition as presented in Table 2.

Leave extract (1.5 gm) from 24hrs

Seeds were treated with aqueous extract (1.5gm leave) of 24 hrs for one week. After one-week germination was showed 100% when compared to control germination that was 100% leave extract showed stimulation as presented in Table 1. The average length of radical was 2.16±1.360 and plumule was 4.68±1.534. The radical plumule values for control were 2.536±1.863 and 2.468±1.272 there was inhibition in radical plumule growth as presented in Table 3. The average fresh and dry weight was 0.21 gm and 0.02 when compared with fresh and dry weight of control that was 0.466 and 0.358 as presented in Table 2. Leave extract showed inhibition.

Leave extract (1.5 gm) from 48 hrs

Seeds were treated with aqueous extract (1.5 gm leave) of 48 hrs for one week. After one-week germination was showed 84% when compared to control germination that was 100% leave extract showed inhibition as presented in Table 1. The average length of radical was 2.22±0.649 and plumule was 11.8±16.087. The radical plumule values for control was 2.536±1.862171and 2.468±1.534 as presented in Table 3. There was stimulation in radical plumule growth. The average fresh and dry weight was 0.13gm and -03 when compared with fresh and dry weight of control that was 0.466 and 0.358 leave extract showed inhibition as presented in Table 2.

Leave extract (1.5 gm) from 72 hrs

Table 5: Effects of aqueous leaves extract of Lawsonia inermis L. on germination Percentage of Latuca sativa every rate is the mean of 5 replicates.

S. NO.	Treatment	Fresh weight	Dry weight	M.C=diff÷dry weight×100	Percentage%
1	Control	0.466	0.358	30.16	
2	0.5gm				
	24hrs	0.048	0.00	00	00
	48hrs	0.026	0.00	00	00
	72hrs	0.038	0.00	00	00
3	1.0gm				
	24hrs	0.00	0.00	00	00
	48hrs	0.00	0.00	00	00
	72hrs	0.00	0.00	00	00
4	1.5gm				
	24hrs	0.022	0.00	00	00
	48hrs	0.01	0.00	00	00
	72hrs	0.06	0.00	00	00

Table 6: Anova table for Lectuca sativa plumule and radical length against leave extracts of Lawsonia inermis L.

Source of variation Plumule	Degree of freedom	Sum of squares	Mean of squares	Computed .F
Between SS	9	244.8651	27.2072	27.7652
Within SS	40	39.198	0.9799	
Radical				
Between SS	9	52.9369	5.8818	18.0312
Within SS	40	13.048	0.3262	

*Insignificance in radical and plumule

Table 7: Effects of aqueous leaves extract of Lawsonia inermis L. on Percentage germination of Pennisitum americanum every rate is the mean of 5 replicates.

S. NO.	Treatment	Germination Percentage	Percentage
1	Control	100%	
2	0.5gm		
	24hrs	36%	36%
	48hrs	60%	60%
	72hrs	40%	40%
3	1.0 gm		
	24hrs	48%	48%
	48hrs	36%	36%
	72hrs	48%	48%
4	1.5 gm		
	24hrs	48%	48%
	48hrs	36%	36%
	72hrs	48%	48%

Seeds were treated with aqueous extract (1.5 gm leave) of 72 hrs for one week. After one-week germination was showed 88% when compared to control germination that was 100% leave extract showed inhibition as presented in Table 1. The average length of radical was 3.88±2.202 and plumule was 16.84±10.773. The radical plumule values for control was 2.536±1.863and 2.468±1.534 as presented in Table 3. There was inhibition in radical while in plumule growth was stimulated. The average fresh and dry weight was 0.16 gm and 0.046 when compared with fresh and dry weight of control that was 0.466and 0.358 leave extract showed inhibition as shown in Table 2.

Lawsonia inermis L. against Lactuca sativa

Leave extract (0.5 gm) for 24 hrs

Seeds were treated with aqueous extract of leaf (0.5gm) for 24 hrs for one week after one-week germination was 68% showed when compared to control germination that was 100% seed extract showed inhibition. The average length of radical was0.916 and plumule was 2.98the radical plumule values for control were 2.536±1.86217and2.468±1.272368 there was in the radical plumule growth. The average of fresh and dry weight0.048 and 0 was when compared to fresh and dry weight of control that was 0.466gm and 0.358 leave extract showed inhibition.

Leave extract (0.5 gm) for 48 hrs

Seeds were treated with aqueous extract of leaf (0.5 gm) for 48 hrs for one week after one-week germination was showed 44%when compared to control germination that was 100% seed extract showed inhibition. The average length of radical 1.624 was and plumule2.46 was the radical plumule values for control were 2.536±1.86217and 2.468±1.272368 there was in the radical plumule growth. The average of fresh and dry weight was 0.026 and 0 when compared to fresh and dry weight of control that was 0.466gm and0.358 leave extract showed inhibition.

Leave extract (0.5 gm) for 72 hrs

Seeds were treated with aqueous extract of leaf (0.5 gm) for 72 hrs for one week. After one-week germination was showed 48%when compared to control germination that was 100% seed extract showed inhibition. The average length of radical was 1.492and plumule was 1.972the radical plumule values for control was 2.536 and 2.468±1.272368 there was in the radical plumule growth. The average of fresh and dry weight was 0.038 and 0 when compared to fresh and dry weight of control that was 0.466gm and 0.358 leave extract showed inhibition.

Table 8: Effects of aqueous leaves extract of Lawsonia inermis L. on Percentage germination of Pennisitum americanum every rate is the mean of 5 replicates.

S. NO.	Treatment	Fresh Weight	Dry weight	M.C=diff÷Dry weight×100	Percentage%
1	Control	0.466	0.358	30.16	
2	0.5gm				
	24hrs	0.148	0.022	572.72	189%
	48hrs	0.188	0.038	394.73	130%
	72hrs	0.212	0.028	657.14	217%
3	1.0gm				
	24hrs	0.172	0.044	290.90	964%
	48hrs	0.108	0.09	20	66.3%
	72hrs	0.182	0.072	152.77	506%
4	1.5gm				
	24hrs	0.324	0.118	174.57	578%
	48hrs	0.318	0.096	231.25	766%
	72hrs	0.282	0.116	143.10	474%

Seedling Length of 0.5 gm aqueous leaves extracts verses control.

Leave extract (1.0 gm) for 24 hrs

Seeds were treated with aqueous extract of leaf (0.5 gm) for 24 hrs for one week. After one-week germination was showed 0 %when compared to control germination that was 100% seed extract showed inhibition. The average length of radical was 0.00 and plumule 0.00 was the radical plumule values for control were 2.536±1.86217 and 2.468±1.272368 there was in the radical plumule growth as presented in Table 6. The average of fresh and dry weight was 0.00 and 0.00 when compared to fresh and dry weight of control that was0.466gm and 0.358 leave extract showed inhibition.

Leave extract (1.0 gm) for 48 hrs

Seeds were treated with aqueous extract of leave (1. 0 gm) for 48 hrs for one week after one-week germination was showed 0%when compared to control germination that was 100% seed extract showed inhibition. The average length of radical was 0 and plumule was 0 the radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in the radical plumule growth as presented in Table 6. The average of fresh and dry weight was0.00 and 0.00 when compared to fresh and dry weight of control that was 0.466 gm and 0.358 leave extract showed inhibition.

Leave extract (1.0 gm) for 72 hrs

Seeds were treated with aqueous extract of leave (1.0 gm) for 72 hrs for one week. After one-week germination was showed 0%when compared to control germination that was 100% seed extract showed inhibition as shown in Table 4. The average length of radical was and 0 plumule was 0 the radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in the radical plumule growth as presented in Table 6. The average of fresh and dry weight was 0.00 and 0.00 when compared to fresh and dry weight of control that was 0.466 gm and 0.358 leave extract showed inhibition.

Leave extract (1.5 gm) for 24 hrs

Seeds were treated with aqueous extract of leave (1.5 gm) for 24 hrs for one week, after one-week germination was showed 9% when compared to control germination that was 100% seed extract showed inhibition as shown in Table 4. The average length of radical was 0.12 and plumule was 0.1 the radical plumule values for control was2.536±1.86217 and 2.468±1.272368 there was in the radical plumule growth as presented in Table 6. The average of fresh and dry weight was 0.022 and 0.00 when compared to fresh and dry weight of control that was 0.466 gm and 0.358 leave extract showed inhibition as shown in Table 5.

Leave extract (1.5 gm) for 48 hrs

Seeds were treated with aqueous extract leave (1.5 gm) for 48 hrs for one week. After one-week germination was showed 8%when compared to control germination that was 100% seed extract showed inhibition as shown in Table 4. The average length of radical -03 was and plumule was 0.1 radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in the radical plumule growth as presented in Table 6. The average of fresh and dry weight was 0.01 and 0.00 when compared to fresh and dry weight of control that was 0.466gm and 0.358 leave extract showed inhibition as shown in Table 5.

Leave extract (1.5 gm) for 72 hrs

Seeds were treated with aqueous extract of leave (1.5 gm) for 72 hrs for one week. After one-week germination was showed 8%when compared to control germination that was 100% leave extract showed as shown in Table 4. The average length of radical was 0.068 and plumule was 0.24 radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in the radical plumule growth as presented in Table 6. The average of fresh and dry weight was 0.06 and 0.00 when compared to fresh and dry weight of control that was 0.466 gm and 0.358 leave extract showed inhibition as presented in Table 5.

Lawsonia inermis L. against penisitum *americanum*

Leave extract of (0.5 gm) for 24 hrs

Seeds were treated with extract of leave (0.5 gm) of 24 hrs for one week after one-week germination was showed 36 %when compared to control germination that was 100% leave extract showed inhibition. The average length of radical was 0.444±0.254 and plumule was 1.8±0.554 the radical plumule values for control was 2.536 ±1.86217 and

Table 9: Anova table for Penissetum americanum plumule and radical length against Leave extracts of Lawsonia inermis L.

Source of variation Plumule	Degree of freedom	Sum of squares	Mean of squares	Computed .F
Between SS	9	1186.9058	131.8784	3.7585
Within SS	40	1403.522	35.0880	
Radical				
Between SS	9	73.6937	8.1881	6.2907
Within SS	40	52.0651	1.3016	

*Insignificance in radical and plumule

2.468±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was 0.148 and 0.022 when compared to fresh and dry weight of control that was0.466 gm and 0.358 extract showed inhibition.

Leave extract of (0.5 gm) for 48 hrs

Seeds were treated with extract of leave (0.5 gm) of 48 hrs for one week. After one-week germination was showed 60 % when compared to control germination that was 100% leave extract showed inhibition as shown in Table 7. The average length of radical was 1.4±1.16271 and plumule was 3.34±2.72236 the radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was 0.188 and 0.038 when compared to fresh and dry weight of control that was 0.466gm and 0.358 extract showed inhibition.

Leave extract of (0.5 gm) for 72 hrs

Seeds were treated with extract of leave (0.5 gm) of 72 hrs for one week after one-week germination was showed 40 % when compared to control germination that was 100% leave extract showed inhibition as shown in Table 7. The average length of radical was1.44±1.22368 and plumule was 2.62±1.347 the radical plumule values for control was 2.536±1.86217 and 2.468 ±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was 0.212 and 0.028 when compared to fresh and dry weight of control that was 0.466gm and 0.358 extract showed inhibition.

Leave extract (1.0 gm) for 24 hrs

Seeds were treated with aqueous extract of leave (1.0 gm) of 24 hrs for one week. After one-week germination was showed 48% when compared to control germination that was 100% branch extract showed inhibition. The average length of radical was2.368±1.4217 and plumule was 4.44±3.22368 radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was 0.172 and 0.044 when compared to fresh and dry weight of control that was 0.466gm and 0.358 leave extract showed inhibition.

Leave extract (1.0 gm) for 48 hrs

Seeds were treated with aqueous extract of leave (1.0 gm) of 48 hrs for one week. After one-week germination was showed 36%when compared to control germination that was 100% branch extract showed inhibition. The average length of radical was2.18±1.22368 and plumule was 2.104±1.211368 radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was 0.108 and 0.09 when compared to fresh and dry weight of control that was 0.466 gm and 0.358 leave extract showed inhibition as shown in Table 8.

Leave extract (1.0 gm) for 72 hrs

Seeds were treated with aqueous extract of leave (1.0 gm) of 72 hrs for one week after one-week germination was showed 48% when compared to control germination that was 100% leave extract showed inhibition. The average length of radical was 1.204±0.6421 and plumule was a 1.94±0.1621 radical plumule value for control was 2.536±1.8621 and 2.468±1.272368 there was in radical plumule growth. The average of fresh and dry weight was 0.182 and 0.072 when compared to fresh and dry weight of control that was 0.466 gm and 0.358 leave extract showed inhibition as shown in Table 8. Seedling length of 1 gm aqueous extract of leaves verses control

Leave extract (1.5 gm) for 24 hrs

Seeds were treated with aqueous extract of leave (1.5 gm) of 24 hrs for one week after one-week germination was showed 48% when compared to control germination that was 100% leave extract showed inhibition as shown in Table 7. The average length of radical was 0.8±0.1621 and plumule was 3.98±2.56217 radical plumule values for control were 2.536±1.86217 and 2.468±1.272368 there was in radical plumule growth as shown in Table 9.

Leave extract (1.5 gm) for 48 hrs

Seeds were treated with aqueous extract of leaves (1.5 gm) of 48 hrs for one week. After one-week germination was showed 36% when compared to control germination that was 100% leave extract showed inhibition as shown in Table 7. The average length of radical was 0.68 and plumule was 33.02radical plumule values for control were 2.536±1.86217 and 2.468±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was when compared to fresh and dry weight of control that was leave extract showed.

Leave extract (1.5 gm) for 72 hrs

Seeds were treated with aqueous extract of leave (1.5 gm) of 72 hrs for one week. After one-week germination was showed 48% when compared to control germination that was 100% leave extract showed inhibition as shown in Table 7. The average length of radical was 0.484 and plumule was 9.24 radical plumule values for control was 2.536±1.86217 and 2.468±1.272368 there was in radical plumule growth as shown in Table 9. The average of fresh and dry weight was when compared to fresh and dry weight of control that was leave extract showed. Effects of aqueous leaves extract of lawsonia innermis on germination Percentage of Penisitum americanum each value is mean of 5 replicates. Allelopathy has great

importance in the field of ecology. Allelopathy is defined as chemical interaction between plants and other organisms. These chemicals either inhibit or stimulate the recipient Plant. In the present study aqueous extract of Lausanirnuealmis leaves with different concentration was used to determine the allelochemicals of *Lawsoniainnermis* against test specie *Steria italica,Lectuca sativa* and *Penissetum americanum*. *The results showed the inhibition in. Lectuca sativa >steria* italica *>Pennesitum americanum in three different parameters.*

In case of *Steria italica* the leave extract showed stimulation in seedling length and, Seed germination and inhibition occur fresh and dry weight in all contration.

Allelopathic effect of hull extract of rice (*Oryza sativa L.)* on seed germination and seedling growth of *Echino crusgali* and *Sillybum mariamum*[18].

Aqueous extract was made from rice cultivars of *Kadus* and *Chapar*. water extract showed stimulate root and stem length but these extract severely inhibit the moisture content and root length of *Silybum mariamum*. It was concluded that rice cultivars had different effect on different plants. *Lectuca sativa* showed inhibition with all parameters by using of leave extract of *Lausanirnuealmis* inhibit the seed germination, seedling growth and moisture content. The rate of inhibition increased with the increase of extract concentration. Allelopathic effect on the growth of tomato by using of water extract of Sicyes *deepei. G*. which greatly inhibit the seedling growth, seed germination and other all metabolic process of *Tomato*. Rate of inhibition increased with the increase of extract concentration[19]. Allelopathic effect of *Mikania micrantha* inhibits the fresh weight, germination percentage and seedling growth of *Tomato* (Lycopersilon *esculentum mill*) Chines *cabbage* (Brasica *chinensis L.*) *Corn (Zea mays L.)* and *Long bean* (Vigua *seque pedalis*) water extract of *Mikania micrantha* inhibit the fresh weight, germination percentage and seedling growth of tomato (Lycopersilon *esculentum mill*) and *Chines cabbage* (*brasica chinensis L.*) While these extract have no any effect on the seedling growth of the *Long bean* and *Corn*. *Penissetum americanum* showed stimulatory effect in length of seedling. Allelochemicals from the leaves of Lausanirnuealmis also play an important role in growth promotion. Allelopathy also used as a growth promoter when transferred in to other plant. Allelopathy plays a major role in agriculture. Allelochemicals from allelopathic plant motivate the growth of *wheat, alfalfa sunflower* and other unsafe products. Allelopathy also used as an herbicides and pesticides when transferred to other cultivars [20].

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