

### Short Communication

Pak.j. sci. ind. res., vol.32, no.10, October 1989

## INFLUENCE OF *PROSOPIS GLANDULOSA* WATER EXTRACT ON THE SEEDLING GROWTH OF WHEAT CULTIVARS

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(Received July 1989, revised October 4, 1989)

Some basic laboratory experiments were conducted to study the effect of water extract of *Prosopis glandulosa* (a wild plant of Sind) residue on the growth of wheat crop. Fresh leaves of mesquite (*Prosopis glandulosa*) were collected, washed with water and dried in an oven at 75° for 48 hr. Samples were ground in a Wiley mill to pass through a 20 mesh screen. Ground samples were stored in plastic bottles at room temperature. Three levels (0, 0.1 and 0.3% w/v) of *Prosopis* water extract were prepared by soaking the dried ground residue in distilled water for 24 hr. at room temperature in 250 ml conical flask. The extracts were then filtered into 100 ml beakers using No. 42 Whatman filter paper. Wheat seeds (cvs. Sarsabz, Sind-81 and Sind-83) were surface sterilized with 1% sodium hypochlorite solution for 2 minutes and then washed thoroughly with sterile distilled water. 10 seeds of each cultivar were placed on the surface of solidified 0.8% agar- gel containing 10 ml aqueous extract of each treatment in glass bowls. The bowl with only 0.8% agar-gel was treated as control. The bowls were covered with petridishes and incubated at 28°. Treatment at each extract level was replicated four times in a randomized complete block design. The experiment was conducted twice and results were expressed as the averages of the two trials.

The growth of both shoot and root significantly decreased with the increasing application of *Prosopis* water extract, irrespective of wheat cultivars (Table 1). Root growth was affected more than shoot. The maximum reductions in root growth have resulted from the highest residue level (0.3%), and Sarsabz showed 83% reduction followed by Sind-81

TABLE 1. EFFECT OF AQUEOUS EXTRACT OF *PROSOPIS GLANDULOSA* ON THE GROWTH OF WHEAT SEEDLINGS.

<i>Prosopis</i> residue treatment (%)	Wheat cultivars		
	Sind-81	Sind-83	Sarsabz
Shoot length (cm)			
0.0	6.54 a	8.63 a	5.75 a
0.1	5.48 b	6.45 b	4.69 b
0.3	4.52 c	6.69 b	3.79 c
Root length (cm)			
0.0	8.93 a	8.40 a	7.10 a
0.1	4.30 b	3.46 b	3.10 b
0.3	3.12 c	3.32 b	1.22 c

(65%) and Sind-83 (61%). The reduction in shoot growth was 34% for Sarsabz followed by 31% for Sind-81 and 22% for Sind-83. The severe reduction in root growth of wheat cultivars may possibly be due to fact that roots get in contact directly with the residue when incorporated, and subsequently are exposed to the phytotoxic chemicals evolved either through the process of leaching or microbial action upon decomposition [4,2]. The results obtained with water extract of *Prosopis* residue suggest that the inhibitory effect on wheat cultivars was due to some water soluble phytotoxin compounds leached from the residue incorporated in the growth medium. This confirms the findings of others [3].

**Key words:** *Prosopis*, weed, wheat

### References

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