

SCREENING OF WHEAT CULTIVARS AGAINST APHIDS IN ECOLOGICAL CONDITIONS OF DISTRICT MANDI BHAUDDIN

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ABSTRACT

Five wheat cultivars viz. Inqalab-91, Pasban, Pak-81, Uqab-2000 and Iqbal-2000 were screened for resistance/susceptibility against aphids during 2000-2001 in the farmers field at Chak 26, district Mandi Bahauddin. The population of aphids was recorded from 15 tillers of five plants selected randomly. Mean densities of the wheat aphids were 2.29, 2.07, 2.41, 2.23 and 2.22 per tiller on Inqalab-91, Pasban, Pak-81, Uqab-2000 and Iqbal-2000, respectively. Peak level of aphids population occurred during third week of March.

KEYWORDS: *Triticum aestivum*; cultivars; aphids; Pakistan.

INTRODUCTION

In Pakistan, wheat crop is severely attacked by aphids (7) which affect the produce adversely (4). Hashmi *et al.* (5) reported four aphids species damaging wheat crop viz. *Sitobion avenae* (F.), *Schizaphis graminis* (Roudoni), *Rhopalosiphum rufiabdominalis* (Sasaki) and *Rhopalosiphum maidis* (Fitch). The aphids incidence level differed in different cultivars of wheat (9). Aheer *et al.* (1) reported that advanced lines of wheat differed significantly with respect to population of aphids and grain yield. The losses ranged between 30 and 40 percent at 15 aphids per plant (6). The aphids population attained peak level in the mid March (3). Amjad and Ali (2) narrated that aphid population varied on test cultivars of wheat during the month of February-April 2001 and peak level of aphids was noted during third week of March Rios and Conde. (8) also observed peak aphids population at milk stage i.e. during third week of March and began to decline at dough stage i.e. at the end of March.

In the present studies, relative response of normal sown wheat cultivars to aphid species was studied under field conditions.

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MATERIALS AND METHODS

Five cultivars of wheat viz. Inqalab-91, Pasban, Pak-81, Uqab-2000 and Iqbal-2000 were sown in farmer's field, district Mandi Bahauddin during 2000-2001. Layout system was RCBD replicated thrice with uniform agronomic practices. Aphids population was counted from 15 tillers selected randomly from each plot at weekly interval from February, 2001 to April, 2001. The data were analyzed statistically.

RESULTS AND DISCUSSION

The difference in cultivars was significant in all dates of observations except second and third week of April. Aphids appeared in the first week of February on all cultivars (1.03 to 1.56/tiller) and reached at peak level during third week of March (3.85 to 5.16/tiller) (Table 1). Thereafter, aphids declined continuously upto the third week of April. Population of aphids was relatively higher on cultivars Pak-81 (5.16 aphids/tiller) and Uqab-2000 (4.84 aphids/tiller) during the peak period. It was followed by Iqbal-2000 (4.71 aphids/tiller) and Inqalab-91 (4.11 aphids/tiller) while Pasban variety had 3.85 aphids per tiller (Table 1).

Non-significant variation was noted among mean densities of aphid population on various cultivars during different months. The month of April had lower level of occurrence of aphids, while March had higher incidence followed by February (Table 2).

The infestation of aphids mainly concentrated on leaves throughout the season (February-April). However, aphids also appeared on heads (spikes) during third week of March and remained upto the third week of April. Aphids were also observed on the stem of wheat plant during the test period. These findings are in agreement with those of Amjad and Ali (2). The results further revealed peak aphids population during third week of March which is in conformity with those of Rios and Conde (8). Farooq and Nasir (3) also reported peaks of aphids population during the middle of March.

Table 1. Aphid population per tiller recorded on various varieties of wheat at one week interval.

Varieties	7.2.2001	14.2.2001	21.2.2001	28.2.2001	7.3.2001
Inqalab-91	1.56b	1.62ab	1.96b	2.16ab	2.38ab
Pasban	1.44ab	1.59a	1.82ab	2.05ab	2.54ab
Pak-81	1.33a	1.73b	2.01b	2.36bc	2.69b
Uqab-2000	1.03a	1.20a	1.49a	2.60c	2.69b
Iqbal-2000	1.40a	1.83b	1.91b	1.95a	2.32a
Cd1	0.413	0.423	0.364	0.382	0.341
Mean	1.35	1.59	1.84	2.22	2.52

Varieties	15.3.2001	23.3.2001	31.3.2001	7.4.2001	15.4.2001	22.4.2001	Mean
Inqalab-91	2.62ab	4.11ab	3.69b	2.89c	1.39	0.85	2.29ab
Pasban	2.68ab	3.85a	2.39a	2.35a	1.40	0.68	2.07a
Pak-81	2.80b	5.16d	3.55b	2.76bc	1.49	0.59	2.41b
Uqab-2000	2.72ab	4.84cd	3.40b	2.37ab	1.66	0.57	2.23ab
Iqbal-2000	2.41a	4.71bc	3.35b	2.15a	1.51	0.69	2.22ab
Cd1	0.323	0.410	0.461	0.392	N.S	N.S	0.310
Mean	2.65	4.53	3.28	2.50	1.49	0.68	2.24

Mean sharing similar letters are not significantly different by DMR test.

Table 2. Aphid population per tiller in various varieties of wheat during different months.

S.No.	Varieties	Mean number of aphid population/tiller		
		February, 2001	March, 2001	April, 2001
1	Inqalab-91	1.83	3.20	1.71
2	Pasban	1.73	2.87	1.48
3	Pak-81	1.86	3.55	1.61
4	Uqab-2000	1.58	3.41	1.53
5	Iqbal-2000	1.77	3.20	1.45
	Means	1.75	3.25	1.56

The present findings reveal that wheat aphids infestation varied in the month of February-April, 2001.

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