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Effect of Time of Weeding on Maize Yield

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ABSTRACT

The present experiment was conducted to study the effect of time of weeding on maize variety Shaheen at NWFP Agriculture University Peshawar in 1984. The greatest number of cobs per plant and heavier 1000-grain weight was obtained by the plots weeded after 4 weeks of crop emergence. More number of grains per cob were also observed in plots weeded after 4 and 5 weeks of crop emergence. The maximum grain yield (5.29t/ha) was obtained from the plots weeded after 5 weeks of crop emergence which was not significantly different from those obtained from weeding 4 and 6 weeks after crop emergence.

INTRODUCTION

Failure in getting high yield of maize has many causes, not the least of which is competition with weeds during the early stage of crop growth. Weed control is one of the most expensive steps in crop production. Weed control encompasses those practices where weed infestations are reduced, but not necessarily eliminated. The degree of weed control obtained is dependent on the characteristics of the weed flora and the effectiveness of control methods used.

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Several reports address the proper timing from weed control. In Mexico, corn with the genetic potential to produce 5000 kg/ha produced only 3500 kg/ha if weeds were not controlled for the first 40 days after crop emergence (Nieto, 1970). Another study conducted in Mexico, showed that initial 4 to 5 weeks were essential for weed control because there after shading becomes an effective weed control device (Glesason, 1960). Li (1960) reported that 15-22% reduction was noted after competition for 3-5 weeks. Several other studies confirmed the need for weed control with in 5-6 weeks after crop emergence, competition throughout this period, equates to competition for the entire season (Staniforth, 1964; Vengris, 1965 and Willaims, 1971).

MATERIALS AND METHODS

The experiment was conducted with four replications on maize variety shaheen in Randomized Complete Block Design at NWFP, Agricultural Univeristy, Peshawar during 1984 Kharif season. following treatments were included in this study.

RESULTS AND DISCUSSION

The number of grains per cob increased upto weeding after fifth week of crop emergence and then decreased (Table 1 and Figure 1). The increase in number of grains from 482.5 to 486.0 was noticed in the plots weeded from 3 to 5 weeks after crop emergence. After this the number of grains de-

T_1	No weeding	Control
T_2	Weeding	3 weeks after crop emergence
T_3	Weeding	4 weeks after crop emergence
T_4	Weeding	5 weeks after crop emergence
T_5	Weeding	6 weeks after crop emergence
T_6	Weeding	7 weeks after crop emergence
T_7	Weeding	8 weeks after crop emergence

The weeding was done manually by hand ensuring that no weed was left in the plot.

Table 1. Effect of time of weedings on grain yield number of grains cob, number of cobs plant and 1000 grains weight of maize variety Shaheen.

Time of Weeding (After Emergence)	Grain Yield (t/ha)	Number of Grains/Cob	Number of Cobs/Plant	1000 Grains Weight (gms)
Control (T1)	4.28 bc	422.6	0.90	279.3
3 Weeks (T2)	4.99 ab	482.5	0.91	301.4
4 Weeks (T3)	5.26 a	486.0	0.94	300.0
5 Weeks (T4)	5.29 a	496.0	0.92	300.0
6 Weeks (T5)	5.27 a	473.8	0.93	295.0
7 Weeks (T6)	4.76 abc	462.6	0.89	298.0
8 Weeks (T7)	4.19 c	447.4	0.85	265.3

*Means in a column followed by different letters are significantly different at 5 % level of probabilty using DMRT.

creased upto 447.4 by delaying the weeding for further three weeks. It means that leaving weeds in the field for early 3-4 and 5 weeks after crop emergence was very critical for thier effect on grain formation.

Though the effect of time of weeding on the number of cobs per plant was not significant, however, the maximum number of cobs per plant (0.94) were recorded in plots weeded 4 weeks after the crop emergence. This important yield components decreased from 0.94 to 0.85 as the weeding was delayed from 4th to 8th weeks after crop emergence. Although the mean number of cobs per plant obtained by different weeding treatments was not significant even then a trend of decrease was observed with delay in weeding.

The heavier grains were obtained from the plots weeded after 3-4 and 5th

weeks of crop emergence where as the grain weight decreased with delay in weeding except the 7th week weeding. It is clear from the data that the early growth period of the crop i.e. first five weeks after crop emergence were the critical and the weeds compete maximum with the crop during this period. The data indicate that the crop kept weed free upto 5th week can produce heavier grains due to better grain development.

The differences in grain yield due to time of weeding were significant (table 1). Grain yield obtained by the plots weeded after 4-5 and 6 weeks of crop emergence was not significant statistically. The maximum yield of 5.29 t/ha was obtained by the plots weeded after 5th week of crop emergence which is 23.6% more as compared to control plot. The reason for obtaining maximum yield from the plots weeded after 4-5 and 6 weeks of crop emergence was due to more number of grains per cob, maximum 1000-grains weight and maximum number of cobs per plant (table 1 and figure 1). Similar results were obtained by Staniforth (1964), Vengris, Williams (1971) and Gulfam (1979).

REFERENCES

Glesason, L.S. 1965. Weed control in corn in the tropics. Proc. North Cent. Weed Control Conf. 13:54.

Khan, Gulfam. 1979. Effect of selective herbicides on yield of maize. Proceeding of first National Seminar on Maize Millet and Sorghum Research and Production in Pakistan April, 10-12, 1979, Pirsabak PARC, Islamabad.

Li, Ming Yu. 1960. The effect of weed competition on oats and Corn, Ph.D. thesis, Rutgers Uni., New Brunswick, N.J.

Nieto, J. 1970. The struggle against weeds in Maize and Sorghum, In FAO. Int. Conf. on Weed Cont., Davis, CA. PP. 79.86.

Staniforth, D.W. 1964. Losses caused by weeds in corn and sorghum. Proc. North Cent. Weed Cont. Conf. PP. 56-57.

Vengris, J. 1975. Weedy grass competition in corn. Proc. North East Weed Cont. Conf. 29:141.

Williams, C.F. 1971 Interaction of crop plant population with weed competition in corn. Diss. Abst. 32(4)-1944-B, 1945-B.

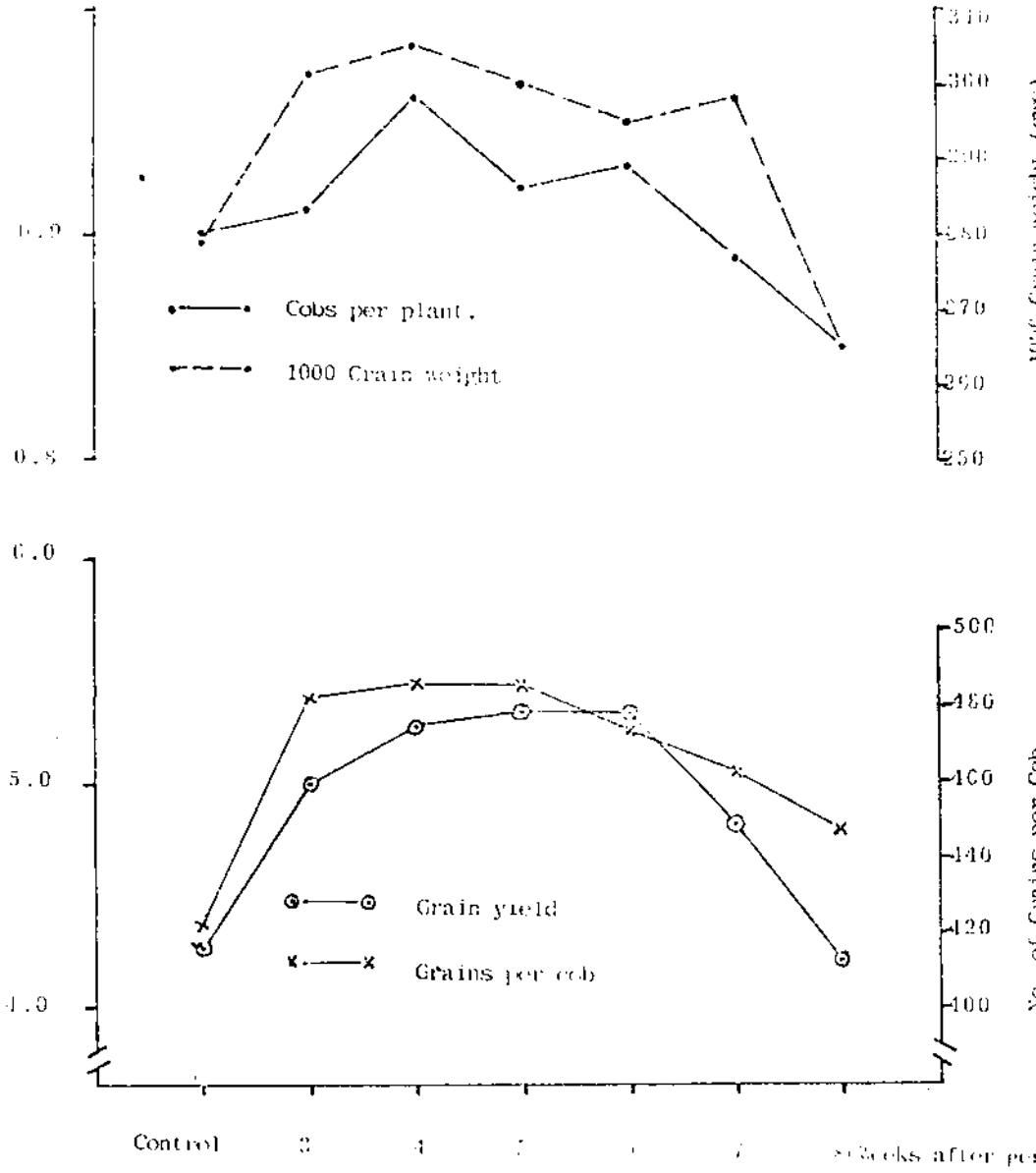

Fig. 1 Yield & yield component of Maize as affected by time of weeding.