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Relative Efficacy of Weed Control Strategies in Garlic

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Abstract: Chemical weed control was compared with hand weeding in garlic for three consecutive years from 1997-98 to 1999-2000. Weedicide Ronstar gave better weed control and produced higher bulb and fresh yield as compared to Stomp and hand weeding. Hence, chemical herbicide Ronstar is recommended for effective weed control in garlic.

Key words: Garlic, weedicide, Stomp, Ronstar, Hoeing

Introduction

Garlic is an important cash crop of Bannu division. During 1999-2000, it was grown on area of 399 hectares in Bannu. The crop is mainly utilized for daily use spices and also for medicinal purposes. There are several constraints involved in the production of garlic in the area. One of the most serious but less noticeable is the weed infestation which reduces its productivity to a greater extent. Weed control has always been one of the major inputs for successful crop production. Hand weeding is a common practice, but it is expensive, laborious and time consuming method. Furthermore, most of the weeds are not properly eradicated with the result low yield is obtained.

After 1940, the use of chemical for effective weed control has brought revolution in the field of agriculture. It is most efficient and time/money saving method. Gvozdenovic-Varga *et al.* (1992) observed that herbicide "Stomp" and "Ronstar" increased the onion yield.

Keeping in view the weed problem, study was initiated to compare the efficacy of weed control methods and elucidate most suitable weed management for garlic crop in the area.

Materials and Methods

The study was undertaken at the Agricultural Research Station Serai Naurang, Bannu, for three consecutive years from 1 997 98 to 1999-2000. Garlic variety "Tarnab Selection" was used throughout the period of investigation. The experiment was

laid out in RCBD with three replications and plot size of 1.5×5 m. Row to row distance was 45 cm with plants 6 cm apart. All of phosphorous and half dose of nitrogen was applied at the time of sowing. Remaining nitrogen was applied after two months of plantation during the month of November. The following four treatments were included in the experiment.

- | | |
|-----------------|--|
| 1. Stomp | weedicide
(pre emergence application) |
| 2. Ronstar | weedicide
(pre emergence application) |
| 3. Hand weeding | (two times i.e November and
mid December) |
| 4. Hand weeding | (four times i.e November,
December ,January and February) |

Data recorded on fresh weight and bulb yield were analyzed using computer package MSTATC.

Results and Discussion

Fresh yield (kg ha^{-1}): Significant differences in fresh yield were noted during the years 1997-98 and 1999-2000. The results were non significant during 1998-99 (Table 1). Data manifested that the highest fresh yield was obtained from the treatment, where "Ronstar" wx applied, followed by "Stomp" during 1997-98, 1998-99 and 1999-2000. Kolesnikov *et al.* (1991) reported that herbicide "Stomp" gave better weed

Table 1: Fresh yield of garlic (kg ha^{-1}) as affected by weed control strategies

Treatments	1997-98	1998-99	1999-2000
Stomp	13980 c	11733 NS	11130 b
Ronsta	21540a	1 6222 NS	18530 a
Hand weeding (Two time)	19160 b	11333 NS	11330 b
Hand weeding (Four time)	13860 c	15467 NS	16440 a

Means having different letters are significant at 5% level of probability using DMR Test, NS = Non significant

Table 2: Bulb yield (kg ha^{-1}) as affected by weed control strategies

Treatments	1997-98	1998-99	1999-2000
Stomp	1 2600 b	9288 NS	13970 b
Ronstar	20020 a	1 2444 NS	17780 a
Hand weeding (Two time)	17900 a	9400 NS	14654 c
Hand weeding (Four time)	1 2780 b	15244 NS	15700 b

Means having different letters are significant at 5% level of probability using DMR Test, NS = Non significant

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control as compared to other. Derawadan *et al.* (1993) applied "Tribunal" which effectively controlled common weeds onion crop.

Bulb yield (kg ha⁻¹): Significant variations were found for bulb yield during the years 1997-98 and 1999-2000. Data were non significant for the year 1998-99 (Table 2). Ronstar gave the highest significant bulb yield, followed by Stomp. Pandey *et al.* (1991) observed herbicide Stomp with best performance for weeds control while, Porwal and Singh (1993) and Gvozdenovic-Varga *et al.* (1992) reported weedicide Ronstar as the most effective weed control chemical.

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