

### Short Communication

Pak. j. sci. ind. res., vol. 33, no. 9, September 1990

## Studies on Chemical Weed Control in Wheat

M.J. RAJPUT, H.G.H.I. TUNIO AND S.M. ALAM\*

Sind Agriculture University, Tandojam, Pakistan

(Received February 16, 1989; revised September 28, 1990)

Wheat an important cereal crop is grown over 7 mha with a total production of 13 mt [1]. The average yield/ha is still low compared to other countries. There are many factors responsible for low yield and weed is one of them. Weeds infest wheat fields which on average lowered the yield by about 10-25% [2]. The spray of post-emergence herbicides viz; Chlortoluron (Dicuran), Isoproturon (Tolkan), Metoxuron (Dosanex) and Methabenzthiazuron (Tribunil) have been reported to increase yield from 23-37% over unweeded control treatment [3,4]. The experiment was carried out to study the effect of post-emergence herbicides on the yield of wheat. A randomized complete block with four replications and a net plot size of 3x3 m<sup>2</sup> was used. Basal doses of N and P<sub>2</sub>O<sub>5</sub> at 120 and 60 kg/ha were applied at sowing as urea and SSP respectively. Wheat seeds (cv, Sonalika) were sown at 40 cm and, 20 cm plant spacings. The treatments include (i) Control (no weeding), (ii) Buctril-M40, (iii) Banvel 40.6 EC, (iv) Dosanex 80 WP, (v) Dicuran Ma60 WP, (vi) Tolkan 75WP, (vii) Tribunil 70 WP and (viii) Hand weeding (Table 1). Some weeds common in wheat fields were lambsquarters, bind weed, nutsedge, bermuda grass, starlet perpermil and sweet clover. The treatments were sprayed on wheat crop at 4-5 leaf stage after first irrigation when the field was still wet. In the hand weeded treatment, the weeds were removed by hoeing at 30 and 50 days after sowing by hand. A check plot was also left unweeded. The weed numbers were recorded before and after treatments were applied. Observations on weeds were recorded prior to or six weeks after spraying, by counting the weed numbers in two randomly selected 1m<sup>2</sup> area in each plot.

There was quite a high weed population in the plots ranging from 24.5 to 33.7 plants/m<sup>2</sup>. After spraying, the herbicides proved quite effective in controlling weeds. Highest weed control of 94% was recorded in Tolkan followed by 93% with Tribunil and hand weeding. The least was 85% in Dosanex. There were significant differences in grain yield as

\*Atomic Energy Agricultural Research Centre, Tandojam.

TABLE 1. EFFECT OF HERBICIDES ON WEED CONTROL AND GRAIN YIELD OF WHEAT.

| Treatments            | No. of weeds/m <sup>2</sup> |              | Weeds control % | Grain yield (kg/ha) | %Increased over control |             |
|-----------------------|-----------------------------|--------------|-----------------|---------------------|-------------------------|-------------|
|                       | Dose (a.i/ha)               | Before spray |                 |                     |                         | After spray |
| Control (Now weeding) | 0                           | 33.7         | 45.5            | 0                   | 3523e                   | 0           |
| Buctril-M40           | 1.5L                        | 32.8         | 4.0             | 93                  | 4910 b                  | 39.4        |
| Banvel-40 EC          | 5.0 L                       | 27.8         | 4.3             | 92                  | 4705 c                  | 33.5        |
| Dosanex 80 WP         | 1.5kg                       | 28.5         | 8.0             | 85                  | 3810 de                 | 8.4         |
| Dicuran-MA 60         | 1.25L                       | 27.6         | 6.5             | 88                  | 4052d                   | 15.0        |
| Tolkan 75 WP          | 2.5 kg                      | 24.5         | 3.5             | 94                  | 5522 a                  | 56.6        |
| Tribunil 70 WP        | 1.0 kg                      | 25.5         | 3.8             | 93                  | 4950 b                  | 42.1        |
| Hand weeding          | 0                           | 29.0         | 3.9             | 93                  | 4872 c                  | 38.3        |

a result of different weed control treatments. Tolkan produced the maximum (5522 kg/ha) grain yield, which shows 57% increase over the unweeded control followed by Tribunil and Buctril-M which have recorded 4950 and 4910 kg/ha yield respectively with 42 and 39% increase over the control. The enhancement of grain yield was possibly due to eradication of weeds through the spray of herbicides. Similar results have been reported by others [5 - 8]. It was concluded that Tolkan, Tribunal and Buctril-M were equally effective in controlling the weeds and resulting in greater yield of wheat grain.

**Key words :** Wheat, Crop, Weeds.

### References

1. Anonymous, Agric., Statistics of Pakistan, Govt. of Pakistan, Islamabad (1987).
2. H.H. Crammer, Pflanzenschutz-Nachricht, Bayer, 20,33 (1967).
3. A. Majeed, M.R. Hussain and M.A. Akhtar, J. Agric. Res., 21(4), 167 (1983).
4. M.C. Phillips, Arabic Farming, 6(10), 61 (1978).
5. M.S. Cheema, M. Afzal and M.S. Ahmed, Pak. J. Agric. Res., 9 (1), 32 (1988).
6. A. Jalis, Prog. Farming, 7 (1), 30 (1987).
7. M.S. Nazir, A.A. Jathal, R.H. Shai and M. Maqsood, Pak. J. Weed Sci., 1 (1), 29 (1988).
8. G. Sarwar and Q. Nawaz, Sarhad J. Agric., 1 (2), 251 (1985).