

EFFECT OF DIFFERENT PACKAGE OF PRACTICES ON WHEAT CROP UNDER THE LIGHT SOILS OF RAJASTHAN

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The investigation on the effect of package of practices comprising various factors like fertilizer application, hoeing and weeding showed that maximum yield was achieved (38.44 Q/ha) by applying full package of practices. Optimum negative response was observed when basal dose of fertilizer application was neglected which retarded the yield by 13.81 q/ha over full package of practices under the light soil group of Rajasthan. This was followed by full package of practices minus the first top-dressing of 25% N at 1st irrigation.

The present national average yield of wheat is 1.9 tonnes/ha which varies from 0.7 to 2.5 tonnes/ha in different states (Bhumla, 1978). The aspiration of national planners for getting 50 million tonnes wheat in 2000 AD can only be achieved by projecting the average yield to 2.9 tonnes/ha.

The present statistics of wheat cultivation and production in Rajasthan is 20.69 lakh/ha and 26.69 tonnes/ha respectively. Past research for obtaining high productivity emphasize the optimum utilisation of crop production essentials i.e. seed, fertilizer, plant protection measures etc.

Keeping in view these factors, the impact of different essentials individually or in combination have been studied and reported.

MATERIAL AND METHODS:

As enlisted in table the treatment combinations were formulated and in order to test their significance field trials were conducted during *rabi* 82-83 and 83-84 at Govt. Agri. Farm Tabiji (Ajmer) Rajasthan. The soils of the experimental plots were loamy sand with 8.2 pH contain-

ing 0.4%, 30 kg/ha and 230 kg/ha available N, P₂O₅ and K₂O respectively. The standard dose of N, P and K in the experiment was 100, 30, 30 Kg/ha respectively. P and K were drilled at the time of sowing and the N dose applied as per treatments. The treatments were randomized under R.B.D. with 4 replications having a net plot size of 9 × 6 K. The prevailing wheat variety K Sona was sown in between 19th to 23rd November with a row spacing of 22cm. The crop was irrigated 7 times and was harvested after 148 days. The rainfall received during the cropping period was 138.0 and 58.7 mm in 82-83 and 83-84 respectively.

RESULTS AND DISCUSSION

Keeping in view the full package of practices the yield potential of wheat was found optimum that is 38.44 Q/ha. Drastic decreased yield was obtained if the basal dose of N fertilizer was missed which was responsible for 13.81 q/ha reduction in yield. The next significant impact was of missing the 1st top-dressing of the fertilizer followed by second top dressing. Hoeing and weeding and hoeing only were responsible for the

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Effect of different package of practices on wheat and their economics

| Treatment | Yield/ha | | Mean | Mean Reduction of yield/ha | Cost of Cultivation Rs/ha | Gross Return Rs/ha | Net Return Rs/ha |
|---|-------------|-------------|-------|----------------------------------|---------------------------------|--------------------------|---------------------|
| | 1982— 83 | 1983— 84 | | | | | |
| Full package of practices | 38.62 | 38.27 | 38.44 | — | 2800 | 7969 | 5169 |
| Full package of practices (—) Basal dose of N fertilizer | 27.91 | 21.35 | 24.93 | 13.81 | 2525 | 5060 | 2535 |
| Full package of practices (—) 1st fertilizer top-dressing | 35.00 | 23.70 | 29.35 | 9.09 | 2664 | 6066 | 3401 |
| Full package of practices (—) 1 st fertilizer top dressing | 33.75 | 29.01 | 31.38 | 7.06 | 2664 | 6481 | 3816 |
| Full package of practices (—) Hoeing and weeding | 30.00 | 35.18 | 32.59 | 5.85 | 2470 | 6723 | 4253 |
| Full package of practices (—) Hoeing | 37.50 | 37.65 | 37.57 | 0.87 | 2700 | 7254 | 4574 |
| CD at 5% | 1.26 | 4.50 | | | | | |
| SEM± | 0.41 | 2.07 | | | | | |

Wheat @ 175 Rs/q.
Straw @ 30Rs/q.
Urea @ 2.5 Rs/Kg.
SSP @ 1.0 „ „

reduction of 9.09, 7.06, 5.85 and 0.87 q/ha respectively. The results are in conformity with those of Sandhu et al. (1978), and Bhardwaj (1978).

The economics obtained due to different treatments revealed a maximum net return identical to the yield increase or decrease due to different treatments. Thus, Rs. 2535 were only achieved in treatment of missing basal dose as compared to Rs. 5169 in full package of practices. The data presented in the table further revealed that every production component increased the

yield manifold of the production cost involved by the individual treatment.

REFERENCES

- BHUMLA, D. R. PROC. FAI-IFDC Fertilizer Seminar on Trends in consumption and Production, FAI AGR 11/2 1-10 (1978).
- SANDHU, H. S., S. S. GILL, and G. S. INDIRJI. Singh; 1978. Note on the response of wheat to time and source of nitrogen application, *Indian J. Agri Sci.* 48 (4) 250-57.
- BHARDWAJ, R. B. L. 1978. Wheat Research in India 1966-76. CARI, N. Delhi 79-98.