

Research Paper :

# Effect of chemical and cultural weed control methods on weed parameters yield and economics of dwarf wheat under different dates of sowing

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## SUMMARY

Field study was conducted on the cultural and chemicals means use to control the weeds viz., dates of sowing and herbicides at College Agronomy Farm, B.A. College of Agriculture at Anand, Looking to the weed parameters, yield and economics of normal date of sowing with application of isoproturon pre-emergence @ 1.0 kg ha<sup>-1</sup> + H.W. at 35 DAS (S<sub>1</sub>W<sub>3</sub>) had recorded maximum net return followed by hand weeding twice among all treatment combinations.

## Key words :

*Raphanus sativus* L.,  
*Alternaria alternata*, Sugars,  
Phenols

The matter of interest is that the cultural and chemical means used to control the weeds viz., dates of sowing and use of herbicides are tested separately in irrigated wheat. But their interactive effects are not known. So, the integrated weed management technology may only be the appropriate technique to achieve optimum weed control with a minimum of crop and environmental hazards. Chemical weed control with a manipulation with appropriate cultural package of practices should only be the means to boost up crop yield.

Thus, the objectives of investigation aimed to know appropriate methodology for weed management in dwarf wheat grown under assured irrigated condition in rice-wheat cropping sequence.

## MATERIALS AND METHODS

A field experiment was conducted at the College Agronomy Farm, B.A. College of Agriculture, Gujarat Agricultural University, Anand Campus, Anand. The soil of the experimental area was loamy sand in texture having good drainage capacity with 7.8 pH.

Eighteen treatments combination comprising three different sowing dates (20<sup>th</sup> November – normal sown; 5<sup>th</sup> December and 20<sup>th</sup> December – midlate and late sown, respectively) and six weed management

practices (W<sub>1</sub> = Isoproturon pre emergence @ 1.0 kg ha<sup>-1</sup>, W<sub>2</sub> = Isoproturon pre emergence @ 1.0 kg ha<sup>-1</sup> + 2,4-D Na salt @ 0.50 kg ha<sup>-1</sup> at 35 DAS, W<sub>3</sub> = Isoproturon pre emergence @ 1.0 kg ha<sup>-1</sup> + HW at 35 DAS, W<sub>4</sub> = 2,4-D Na salt @ 0.750 kg ha<sup>-1</sup> at 21 DAS, W<sub>5</sub> = Hand Weeding twice at 20 and 40 DAS and W<sub>6</sub> = Weedy check) were studied in split plot design with four replications.

Wheat cv. GW-496 was sown 22.5 cm apart using 125 kg ha<sup>-1</sup> seed rate. Fertilizers were applied @ 120-60-0 N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O kg ha<sup>-1</sup>, respectively and irrigations were applied in accordance with package of practices.

## RESULTS AND DISCUSSION

The dominant weed flora recorded in the experimental field was consisted of *Chenopodium album* L., *Amaranthus spinosus* L., *Eleusine indica* and *Cyperus rotendus*.

The normal date of sowing had gave significantly higher weed population at 21 and 41 DAS and almost same trend in weed biomass at harvest. The plant height, and total tillers/plant of weeds were maximum under normal sowing. These characters showed declining trend. Corresponding with the delay in the sowing as midlate and late. The late sown wheat produced lower grain yield and economic returns might be abrupt rise in temperature in

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