



## Yields and economics of wheat (*Triticum aestivum* L.) influenced by SWI techniques with varying nitrogen levels

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**Abstract :** A field experiment was conducted during the *Rabi* season of the year 2009-10 to study the yields and economics of wheat (*Triticum aestivum* L.) influenced by SWI techniques with varying nitrogen levels. Effect of four spacings ( $S_1$ : 10 x 20 cm,  $S_2$ : 15 x 20 cm,  $S_3$ : 20 x 20 cm and  $S_4$ : 22.5 cm line sowing were) studied on three levels of nitrogen ( $N_1$ : 100 kg N ha<sup>-1</sup>,  $N_2$ : 125 kg N ha<sup>-1</sup> and  $N_3$ : 150 kg N ha<sup>-1</sup>). The higher grain yield (4,205 kg ha<sup>-1</sup>), straw yield (6,111 kg ha<sup>-1</sup>), the highest gross realization (Rs. 53,509 ha<sup>-1</sup>), net realization (Rs. 35,373 ha<sup>-1</sup>) with CBR (2.95) were obtained from 20 x 20 cm cross sowing technique. Different levels of nitrogen significantly influenced yields, gross realization, net realization with CBR. Higher grain yield (4,126 kg ha<sup>-1</sup>), straw yield (6,135 kg ha<sup>-1</sup>) and gross realization (Rs. 52,577. ha<sup>-1</sup>), net realization (Rs. 33,791 ha<sup>-1</sup>) with CBR (2.80) were obtained from 150 kg N ha<sup>-1</sup>. Treatment combination  $S_3N_3$  gave maximum straw yield, gross return, net return with CBR.

**Key Words :** Nitrogen levels, Wheat, SWI

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### INTRODUCTION

Wheat (*Triticum aestivum*) is an important cereal crop for a large number of countries in the world. It provides about 20 per cent of total food calories for the human diet. It can be grown on a variety of soils but clay loam soil is most suitable (Hossain Md. *et al.*, 2006). In India, wheat stands second next to rice in area and production, but first in productivity among all the cereals.

Method of sowing play very important role providing for the proper space required by plant for efficient utilization of air, water, solar energy and nutrients, therefore, the crop yield and quality of the produce may be improved to great extent (Makwana and Tank, 2008).

System of wheat intensification (SWI) popularly known *Sri Vidhi Gehun* is different methodology for wheat cultivation. Its root goes in SRI principle being practiced in paddy. All agronomic principles are put into practices and

integrated with package of practices in wheat crop. Nitrogen is the key element for plant growth and development, as it is a constituent of chlorophyll.

### MATERIALS AND METHODS

A field experiment was carried out at the Regional Research Station, Anand Agricultural University, Anand, Gujarat during the *Rabi* season of the year 2009-10. Physical and chemical properties of the soil of experimental site are given in (Table A).

The experiment was laid out in Factorial Randomized Block Design having four replications. Twelve treatment combinations comprised of four spacings *viz.*,  $S_1$ : 10 x 20 cm,  $S_2$ : 15 x 20 cm,  $S_3$ : 20 x 20 cm and  $S_4$ : 22.5 cm line sowing and three levels of nitrogen *viz.*,  $N_1$  100,  $N_2$  125,  $N_3$  150 kg N ha<sup>-1</sup> were studied.

Certified seed of wheat variety 'GW - 496' was soaked in

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