

International Journal of Agricultural Sciences Volume **13** | Issue 2 | June, 2017 | 222-227

∎ e ISSN-0976-5670

© DOI:10.15740/HAS/IJAS/13.2/222-227 Visit us : www.researchjournal.co.in

## **RESEARCH PAPER**

## Realization of wheat (*Triticum aestivum* L.) productivity, profitability and nutrient balance sheet through improved nutrient management

VIPIN KUMAR, SANDEEP KUMAR\*, OMBIR SINGH AND AVESH KUMAR Department of Agronomy, Chaudhary Chhotu Ram Post-Graduate College, MUZAFFARNAGAR (U.P.) INDIA Email: sandeepkail@yahoo.com

Abstract : A field experiment was conducted during Rabi seasons of 2007-08 and 2008-09 to study the realization of wheat (Triticum aestivum L.) productivity, profitability and nutrient balance sheet through improved nutrient management. Sixteen fertility treatment combinations of NPK and ZnSO, were examined in Randomized Block Design with three replications. Application of NPK ZnSO<sub>4</sub> @ 150:75:60:20 kg/ha produced highest grain yield of 51.0 q/ha being significantly higher by 71.7, 57.9, 42.5, 49.9 and 9.5 per cent over control, NPK ZnSO, levels of 90:45:45:00, 90:45:45:20, 90:45:45:40 and 120:60:45:00 kg/ha, respectively. Further, increase in fertility levels beyond 150:75:60:20 kg NPK ZnSO, /ha did not show any significant improvement in grain yield. However, the yield attributes viz., spikes/m<sup>2</sup>, grains/spike, test weight and spike fertility ratio increased significantly up to 120: 60: 45: 20 kg NPK ZnSO, ha over control, 90: 45: 45, (with and with out ZnSO,) and 120: 60: 45 kg NPK / ha but remained at a par with other levels of fertility tested in the experimentation. Most of the growth and developmental parameters in the study significantly increased up to the highest level of fertility management *i.e.* 150:75:75:40 kg/ha. Comparison of available NPK and Zn in soil after harvest of crop with the initial status under different treatments indicated the reduction in residual soil available nutrients at their lower level of application. However, an increase in available NPK in soil were noticed with the application of 150 : 75: 60 and 150: 75: 75 kg NPK/ha with and without Zn level, while the status of Zn in soil was found positive with other primary nutrient under treatment 150:75:75:20 and 150:75:75:40 kg NPK ZnSO,/ha only. Wheat crop grown under the fertility treatment 150:75:60:20 kg NPK ZnSO,/ha recorded maximum net monetary return of Rs. 36,331/ha which was on an average just the double of all those treatments where nitrogen was applied @ 90 kg/ha.

Key Words : Balance sheet, Growth, N P K Zn uptake, Productivity, Profitability, Wheat

View Point Article : Kumar, Vipin, Kumar, Sandeep, Singh, Ombir and Kumar, Avesh (2017). Realization of wheat (*Triticum aestivum* L.) productivity, profitability and nutrient balance sheet through improved nutrient management. *Internat. J. agric. Sci.*, **13** (2) : 222-227, **DOI:10.15740/HAS/IJAS/13.2/222-227.** 

Article History : Received : 23.01.2017; Revised : 08.04.2017; Accepted : 22.04.2017