Research Paper

ADVANCE RESEARCH JOURNAL OF
C R P
IMPROVEMENT
Volume 4 | Issue 1 | June, 2013 | 47-50

Yield and economics of late sown wheat as influenced by balanced fertilization, organic manures and bioregulator

■ P.C. CHAPLOT AND H.K. SUMERIYA[1]

AUTHORS' INFO

Associated Co-author :

[1]Directorate of Extension Education and Department of Agronomy, Maharana Pratap University of Agriculture and Technology, UDAIPUR (RAJASTHAN) INDIA

Author for correspondence :
P.C. CHAPLOT
Directorate of Extension Education and Department of Agronomy, Maharana Pratap University of Agriculture and Technology, UDAIPUR (RAJASTHAN) INDIA

ABSTRACT : An experiment was conducted at udaipur during *Rabi* 1994 -95 and 1995-96 to study the effect of balanced fertilization, organic manures and bioregulator on productivity of late sown wheat. The crop fertilized with 120 kg N+40 kg P_2O_5+ 30 kg K_2O+60 kg S+8 kg Zn ha^{-1} (NPKSZn) produced significantly higher effective tillers/m, ear length, test weight, filled spikelet /ear, grain/ear, grain weight/ear, ear weight thereby significantly increased grain, straw and net returns by 82.1, 23.8 and 17.6, 82.6, 17.7 and 14.1 and 111.9, 25.7 and 18.7 per cent over no fertilization, NP and NPK, respectively but remained at par with NPKS and NPKZn. Application of FYM and biogas slurry proved equally effective however, both significantly increased yield of grain by 26.5, 26.1 per cent, straw by 25.8, 24.9 per cent thus resulted higher net returns by 28.3 and 27.3 per cent, respectively over no manure application. Foliar application of brassinosteroid @0.25 ppm significantly improved yield attributes which resulted significantly higher grain and straw yield to the tune of 7.1 and 7.6 per cent, respectively over water spray.

Key Words : Balanced fertilization, Farm yard manure (FYM), Biogas slurry (BGS), Yield attributes and yield, Late sown wheat

How to cite this paper : Chaplot, P.C. and Sumeriya, H.K. (2013). Yield and economics of late sown wheat as influenced by balanced fertilization, organic manures and bioregulator, *Adv. Res. J. Crop Improv.,* **4** (1) : 47-50.

Paper History : Received : 19.02.2013; **Revised :** 01.04.2013; **Accepted :** 02.05.2013

Wheat is considered to be backbone of nation's food security system. Since green revolution in mid sixties, our country has witnessed significant increases in its productivity, thereby production which has transferred nation's status from scarcity to self sufficiency. Despite these significant achievements, there is a need of further enhancement in wheat production to feed ever huge population and strengthening food security. It has been estimated that India will need at least 109 mt of wheat by 2020 as against present production of 80.78 mt from an area 28.50 m ha (Mishra, 2006). Since very little scope lefts for horizontal growth, the alternative seems to achieve vertical growth through increasing productivity. Major reasons for recently observed decline in growth rate of food grain production and factor productivity are the large scale nutrient through crop harvest on one hand and low level of nutrient replenishment to the soils on the other hand (Tiwari and Gill, 2007). Despite the application of recommended quantities of major nutrients, the increase in yield is not encouraging. This indicates that in addition to major nutrients, there is a urgent need to supply secondary and micro nutrients. The factor productivity of N as well as P has gone down with the passage of time due to deficiency of other nutrients such as K, Zn, S, Fe and so on. Balanced nutrition of plant is one of the most important factor determining ultimate wheat productivity and maintenance of soil health.

The use of organic manures improve soil physical, chemical and biological properties, fertilizer use efficiency, mitigate short supply of micro nutrients, stimulates the proliferation of diverse group of soil microorganisms and improve ecological balance of rhizosphere. Among bioregulator, brassinosteroid is known to play vital role in simulating cell division, elongation and also help to overcome environmental stress thereby improving stress tolerance. Keeping in view the above facts, the present study was, therefore, undertaken to assess the effect of balanced fertilization, organic manures and bioregulator on yield and economics of late sown wheat under zone IV A of Rajasthan.

RESEARCH PROCEDURE

The field experiment was conducted at the Instructional Farm, Department of Agronomy, Rajasthan College of