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Evaluation of Different Blended Fertilizers Types and Rates for Better Production of Wheat in Esera Woreda, Dauro Zone

Yehuala Alemneh* and Aynalem Kutafo

Southern Agricultural Research Institution, Hawassa Ethiopia
Areka Agricultural research Institution, department of Natural Resource Management, Areka Ethiopia

Abstract

Production and productivity of wheat is decreased mainly by soil fertility depletion and inappropriate rate of poor nutrients availability. Crop specifc fertilizer recommendation is necessary for sustainable crop production. Accordingly, a feld this experiment was conducted during the main rainy season of 2017 and 2018 to evaluate blended fertilizer types and rates efect on improving production of wheat in Esera woreda, Dauro Zone, Southern Ethiopia. The experiment was laid out in Randomized Complete Block Design with three replications. The experiment consisted of ten treatments viz. control, (150NPSB+41urea) kgha^{-1}, (250 NPSB+102) kgha^{-1}, (150 NPSB+41urea+cu) kgha^{-1}, (200 NPSB+71 urea +cu) kgha^{-1}, 250NPSB+102urea+cu) kgha -1, (173.2 NPS + 4.87 $ZnSO_4$) kgha^{-1}, (189.5k NPS + 6.5 $ZnSO_4$) kgha^{-1}, (237NPS +8.125 $ZnSO_4$) kgha^{-1}, treatments. Blended fertilizers were applied at planting time and urea was top dressed after 35 days of planting. Application of blended fertilizer signifcantly ($p < 0.05$) increased the grain yield, and aboveground biomass, as compared to the control. On the other hand plant height, number of tillers per plant, spike length and number of seeds per spike were not shown signifcance. The maximum grain yield 2979.2 kg ha^{-1} and minimum (1989.6 kg ha^{-1}) were obtained from the application of 237 NPS +8.125$ZnSO_4$ kg ha^{-1} and 200+71urea +cu, respectively. The application of 173.2NPS + 4.87 $ZnSO_4$ kg ha^{-1} had maximum and acceptable Marginal rate of return (MRR %) and net benefit. Therefore, this type and rate of blended fertilizer can be recommended since it produced a high marginal rate of return, high net benefit, and relatively low total cost of production, for wheat production in the study

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Keywords:

Introduction

Materials and Method

Experimental details and treatment set-ups for Esera

References

1. Wassie H, Shiferaw B (2011) On-Farm verifcation of lime and NPK fertilizers efects on the tuber yield of Irish potato (Solanum tuberosum) on some acidic soils of Southern Ethiopia. J Dry Land 4(1): 283-288.

2. Wassie A, Bekele T, Sterck F, Teketay D, Bongers F (2010) Postdispersal seed predation and seed viability in forest soils: implications for the regeneration of tree species in Ethiopian church forests. Afr J Ecol 48(2): 461-471.

3. Asgelil D, Taye B, Yesuf A (2007) The status of micro-nutrients in Nitisols, Vertisols, Cambisols and Fluvisols in major maize, wheat, tef and citrus growing areas of Ethiopia. Pro Agric Res fund 15(4): 77-96.

4. Girma T, Peden D, Abyie A, Wagnew A (2003) Efect of manure on grazing