Journal of Agroecology and Natural Resource Management
p-ISSN: 2394-0786, e-ISSN: 2394-0794, Volume 3, Issue 2; July-September 2016 pp. 184-184

http://www.krishisanskriti.org/Publication.html

Coated Urea Improving the Drymatter Production, Factor Productivity and Net Monetary Returns of Rainfed Maize (Zea mays L.)

D. Sravanthi., G. Pratibha., B. Padmaja and T. Prabhakar Reddy

[1]M.Sc (Agronomy), [2]Principal Scientist (Agronomy, CRIDA, Hyderabad),
[3]Associate Professor (Agronomy, Agricultural college Jagtial, Telangana State)
Central Institute for Dryland Agriculture (CRIDA), Santoshnagar,
Hyderabad-500059 Telangana, India
E-mail: danamsravanthi@gmail.com

Abstract—*The crop maize (Zea mays L.) is varacious consumer of nitrogen fertilizer. Around 50% of nitrogenous fertilizers from urea. When urea applied to soil leads to hydrolysis and nitrification and finally lost by several processes like leaching, denitrification, runoff, volatilization and nitrification. Among those losses nitrification is most widely occurs under drylands. It will leads to low nitrogen use efficiency and reduced yields, adverse environmental effects contributing to eutrophication, climate change. Hence arresting these losses the urea coated with several natural compounds neem cake, karanj cake and Vitex negundo leaf powder by using adjuvants like castor oil and coal tar are known for nitrification inhibition, to improve the availability and factor productivity of the crops in terms resulted in increased crop yield and net monetary returns. The increase in dry matter production at 30 DAS and harvest with application of NNI coated urea with either castor oil or coal tar coated urea ranged between 21.2-32.9 and 18.7-27.6%. Whereas at 60 DAS, the increase in dry matter with NNI coated urea treatments over application of uncoated urea ranged between 25.5-38.8%*

Factor productivity in different treatments was in the order of VCU > VCTU > NCTU > KCTU > NCU. Among them VCU (32.3 kg yield kg N applied^{-1}) was highest. The grain yield was in the order of VCU (3233 Kg ha^{-1}) > VCTU (3218 Kg ha^{-1}) > NCTU (2995 Kg ha^{-1}) > KCTU (2687 Kg ha^{-1}) > NCU (2446 Kg ha^{-1}) , where as the stover yield order is VCU > VCU > NCTU > KCTU > NCU , KCU. Highest NMR was realized with VCU (₹ 27348 ha$^{-1,}$) followed by VCTU (₹ 27180 ha$^{-1,}$. Uncoated urea recorded higher NMR and B: C ratio as compared to control.