

COMPARATIVE STUDY OF MECHANICALLY DRIED BIOSLURRY AND COMMERCIAL FERTILIZERS

ABDUL NASIR¹, M. USMAN KHALID², ANJUM MUNIR³, SHAFIQ ANWAR⁴
CH. ARSLAN⁵ & M. AZHAR ALI⁶

^{1,2,4,5,6}Department of Structures & Environmental Engineering, University of Agriculture, Faisalabad, Pakistan

³Department of Farm Machinery and Power, University of Agriculture, Faisalabad, Pakistan

ABSTRACT

A comparative study was made at field conditions during 2011-2012 to evaluate the fertilization effect of mechanically dried bioslurry and commercial fertilizers on crop growth, productivity and soil enrichment in terms of NPK and OM. The selected area was at University of Agriculture Faisalabad, and Golden Acre cabbage was used in experiment with four treatments. Each treatment was replicated four times by setting out in randomized complete block design. The bioslurry from a biogas plant was obtained from Al-Hamd Exports, Sutyana Road, Faisalabad and was dried by using a mechanical dryer. The cabbage data regarding plant density, plant height, unfolded leaves per plant, root depth and yield was taken during growing period of crop. The results showed 20-30% increase in plants density, plants height and root depth, and 10% reduction in unfold leaves per plant in bioslurry treated plots. It was followed by the treatment in which bioslurry was applied in combination with commercial fertilizers. The treatment with recommended commercial fertilizers showed least significant effect in improving these parameters of the crop. The cabbage productivity showed minimum yield 45 t/ha and maximum 79 t/ha from control and bioslurry treated plots respectively. It was followed by commercial fertilizers treated plots as 68 t/ha. The fertilization effect of bioslurry was evaluated by measuring residual amount of NPK and OM in soil after harvesting of the crop. The bioslurry treated plots showed better results as it reside 15% more amount of OM and NPK in the soil in relation with commercial fertilizers treated plots. The results revealed that bioslurry mobilize the nutrients and also add up organic matter in soil better than that of commercial fertilizers.

KEYWORDS: Cabbage, Bioslurry, Soil Conditioner, Commercial Fertilizer