

Effects of Compost on Growth and Yield Performance of Finger Millet (*Eleusine coracana* L.) Under Low Input Conditions in Southern Dry Zone Region of Sri Lanka

D.P.P. Liyanage ^{1*}, K.D.C.D. Priyadarshanie ¹ and S.D. Wanniarachchi ²

¹Grain Legume and Oil Crops Research and Development Center, Department of Agriculture, Angunakonapelassa, Sri Lanka,

²Department of Soil Science, Faculty of Agriculture, University of Ruhuna, Kamburupitiya, Sri Lanka

Abstract

Finger Millet (*Eleusine coracana* (L.) Gaertn) is a native plant to Africa belongs to family Poaceae and is a popular crop in tropics because of its high nutritional value. Finger millet is a continuously grown crop in low country dry zone in Sri Lanka, without using fertilizers. The regular depletion of nutrition status of land and the degradation of soil properties due to continuous cultivation in same lands without using fertilizers have resulted decreasing the productivity of finger millet. This study was carried out to determine the effects of compost on finger millet yield under the rain-fed condition during the 2015/16 and 2016/17 Maha seasons at the Grain Legume and Oil crops Research and Development Center of the Department of Agriculture. Different compost levels (0MT/ha, 1MT/ha, 2MT/ha, 3MT/ha, 4MT/ha, 5MT/ha and 6MT/ha) were tested as treatments in a Randomized Complete Block Design with 4 replicates and a treatment of without application of compost was used as the control. The levels of N, P and K levels of the compost which used in the experiment were 0.93, 0.34 and 0.6, respectively. The plot size was 9 m². Particular amounts of compost applied to the soil as treatments before seed sowing in both seasons. Along with compost used inorganic fertilizers (only half of basal application mixture with Urea, Triple super phosphate and Muriate of Potash 25kg each) for finger millet recommended by Department of Agriculture, Sri Lanka (DOA). All other practices were done as recommended by DOA. At the end of the 1st season of the research unable to see considerable enhancement of growth performances as a result of application of compost but at the end of 2nd season results showed clear enhancement of the number of productive tillers, plant height and grain yield of finger millet. The results revealed that the effect of compost application on yield cannot be seen in one season, continuous application of compost leads to obtain higher yield in finger millet cultivation.

Keywords: Compost application, Growth performances, Finger millet, Rain-fed condition

*Corresponding author: deepanippl@yahoo.com