

EFFECT OF DIFFERENT SOURCE OF ORGANIC MANURE ON THE GROWTH AND YIELD OF IRRIGATED ONION IN DAMATURU LOCAL GOVERNMENT AREA OF YOBE STATE, NIGERIA

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ABSTRACT

Onion (*Allium cepa*L.) is a member of the Alliaceae family and its one of the most important vegetables in the world, whose utility is ranked second to tomatoes (Brice *et. al.*, 1997). Despite the ranking of onions as second most important vegetable in Nigeria, the present production levels do not meet the demand of the teeming populace (Gambo *et. al.*, 2008). The use of organic manure to meet the nutrient requirement of crops would be an inevitable practice in the years to come for sustainable agriculture since organic manure generally improves the soil's physical, chemical and biological properties along with conserving the moisture-holding capacity of the soil, and thus resulting in unenhanced crop productivity. This study was conducted during the cool dry irrigation season of 2014 at the New Research Farm (NRF) of College of Agriculture, Gujba, located in Damaturu state capital of Yobe State, Nigeria. Damaturu town is the capital of Yobe state, Nigeria. It is located on coordinates of 11° 44' 55" N, 11° 57' 50"E in the north-eastern part of Nigeria. The results showed that the different sources of manures had significantly influenced all the yield parameters of onion where F1 (cow dung) produced the heaviest (178.29g), largest (9.16 m) and highest onion tonnage 46.92 t ha⁻¹ (Table 5). This was followed closely by F3 (poultry manure) that resulted in to 38.19 t ha⁻¹ and then F2 (Sheep and Goat dung). Azbak red variety (V 1) equally performed significantly (P < 0.05) better than white variety (V 2) in terms of bulb weight, diameter and yield. The performance of the white variety consistently lagged behind that of Azbak red variety in all respects. We attributed yield differences to speed of nutrient release by the different manure to crops and genetic variations. The use of cow dung in cultivating Azbak red onion variety proved to be more beneficial. The poor performance of the "control experiment" demonstrates the soil's natural deficiency. It is therefore recommended that different onion variety should be evaluated under similar studies to assess their responses.

Keywords: Farmyard manures, onion, basin irrigation, north-eastern.