

ASSESSMENT OF AGRICULTURAL POTENTIALS OF TOPSOIL OF DEMSA FLOODPLAINS IN THE BENUE VALLEY AREA OF ADAMAWA STATE, NORTHEASTERN NIGERIA

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ABSTRACT

An assessment of the agricultural potentials of topsoil of Demsa floodplains in the Benue valley area of Adamawa State Nigeria has been carried out. Ten (10) topsoil samples were obtained at 0-15cm and 15-30cm depths respectively from randomly selected farmlands at Linga, Dili, Bbange, Mbomara, Dwam, Zuran, Kwale, Tahou, Kpamnyagi and Kudiri villages of the study area for physicochemical tests. All tests were conducted following standards procedures. Tests results revealed that textural characteristics of the soils ranged from clay-loam to clay. Moisture contents of the soils ranges from moderate to high (42.21% to 63.84%). Chemical analysis indicated that the soils were moderately acidic (pH=5.54) to very slightly acid to neutral (pH=6.72). Organic matter content ranged from low to moderate (0.72% to 1.32%). While total Nitrogen content was very high (0.63% to 0.98%), available phosphorus content was very low (0.07ppm to 0.10ppm). Total Exchangeable Bases (TEB) ranged from 24.62Cmolkg⁻¹ to 29.70Cmolkg⁻¹ giving rise to high Cat ion Exchange Capacities (CEC) and high percentages of Base Saturations (PBS). The results gave a general indication of high topsoil fertility with Low sodium contents. Therefore, with the availability of water sources (River Benue and its minor streams as well as lakes Fantami and Garambula) in the area, the soils are considered viable for large scale irrigation farming of cereal (Maize, Sorghum, Rice and wheat) and market gardening provided appropriate soil management practices are carried out.

KEYWORDS: Agricultural Potentials, Topsoil Fertility, Demsa Floodplain, Chemical Properties