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FERTILITY STATUS OF MANGROVE SWAMP SOIL OF AKWA IBOM STATE

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ABSTRACT

Soil fertility may be defined as the ability of soil to provide essential plant nutrients in availability forms and in a suitable balance whereas soil productivity is the resultant of several factors such as soil fertility, good soil management practices availability of water supply and suitable climate. Many factors affect soil fertility. These include nature of the soil, soil nutrients contents and soil reaction. Moorman and Pons (1974) also found that organic matter played an important role in soil fertility by forming complexes acidic ions. Moorman and Pons (1974) reported that hydrolysis of organic-metallic complexes contributed to acidity and organic matter influence availability of A1 by complexing the A1 thereby reducing soluble and exchangeable A1. There is no doubt that soil activities, soil temperature, soil transformation processes, soil effective cation exchange capacity, availability of moisture and soil (Naidoo, 1980, Ukpong, 1922, Botto and wellington, 1984) are affected by organic materials in the soil. The soil to study soil exchangeable base need not be over-emphasis on the agriculture viewpoint, these exchangeable cat ions are basic plant nutrients. In the soil there exist also anions which are negatively change ions. Cations in solution engage in a reversible reaction, that when cat ions are absorbed by the soil from the solution the solutions receive an equivalent amount of another cation. These exchange reactions are necessary for the absorption of nutrients by plants roots. Cation exchanged (plant nutrients) find their way to plant roots or are leached away or may be solidified to form rocks. Exchangeable bases Ca^{2+} , Mg^{2+} , K^{+} and Na^{+} commonly occur in the soil in the order listed (Thomas 1977). But it is common in some situation to have the reverse, example in mangroves swamps soil where we have marine live (corals) and dissolution of clay minerals under acid condition. Mg^{2+} may be more than Ca^{2+} in humid soil. Ca^{2+} is low because there is no continuing source of it in the soil. Most $\text{Al}^{3+} + \text{H}^{+}$ on exchange complex result in soil acidity.

Key words: Soil, fertility status, mangrove swamp soil, sustainable food production, Akwa Ibom State.