

THE RATE AND PROPORTION OF MINERAL FERTILIZERS IN INCREASING THE YIELD OF CORN DIFFERENT SOILS

Imomkuziev Otabek

National University of Uzbekistan.

otabekimomqoziyev2@gmail.com

Abstract

Increasing maize grain output has historically lagged behind yield increases attained elsewhere in the world because of declining land productivity, a serious issue affecting smallholder farmers today. This deterioration is mostly due to the soil's decreased fertility as a result of ongoing farming without sufficient external nitrogen inputs. By combining organic and mineral fertilizer inputs, improved soil fertility management techniques can maximize the output of the system as a whole and allow for the effective utilization of applied inputs. The use of organic fertilizers in place of chemical ones to ensure excellent yields and safeguard the environment has drawn more attention recently.

Keywords: Acid soils, organic manures, NPK fertilizer.

The ability of acid soils to adsorb major elements onto their surfaces means that many additional nutrients are fixed rather than being made available for crop use (Akinrinade et al., 2006; Enwezor et al., 1981). Acid soils are highly weathered and contain large quantities of Al and Fe hydrous oxides. The availability of soil nutrients and cation exchange capacity were greatly improved in both acid soil and nutrient-depleted soil by the application of several kinds of organic manures and NPK fertilizer. Cane rat dung appeared to be the best among the organic manures used, and the results of applying organic manures were favorable, performing on par with or better than NPK fertilizer. In order to reap the greatest benefits, large-scale farming will need an abundance of organic manure, which cane rat droppings might not be able to supply.

When applied to the acid soil and nutrient-depleted soil, the poultry manure and cassava peelings fared well, almost as well as cane rat droppings and NPK fertilizer. Therefore, the current study unequivocally shows that the application of cassava peelings and chicken manure for the improvement of crop production can reclaim the marginal and unproductive soils [1].



The use of organic fertilizers enhanced the biological and physical characteristics of the soil. The increase in elongated pores, which are regarded as being extremely significant both in soil-water-plant relationships and in maintaining a good soil structure, was the main cause of the increase in macropores, ranging from 50 to 500 μ m, in soil treated with organic fertilizers. Due to an increase in soil organic matter, organic treatments increased soil biological activity. Mineral fertilizers increased the number of regular and irregular pores in the soil, increasing its porosity, and primed the soil's organic matter [2].

References

1. Adeniyani ON, Ojo AO, O A, Adediran JA. Comparative study of different organic manures and NPK fertilizer for improvement of soil chemical properties and dry matter yield of maize in two different soils. *Journal of Soil Science and Environmental Management*. 2011 Jan 31;2(1):9-13.
2. Marinari S, Masciandaro G, Ceccanti B, Grego S. Influence of organic and mineral fertilisers on soil biological and physical properties. *Bioresource technology*. 2000 Mar 1;72(1):9-17.

