

Use of Locally Available Organic Resources for Soil Fertility Improvement on Farmers Yield in the Eastern and Greater Accra Regions of Ghana

Authors : Ebenezer Amoquandoh, Daniel Bruce Sarpong, Godfred K. Ofosu-Budu, Andreas Fliessbach

Abstract : Soil quality is at stake globally, but under tropical conditions, the loss of soil fertility may be existential. The current rates of soil nutrient depletion, erosion and environmental degradation in most of Africa's farmland urgently require methods for soil fertility restoration through affordable agricultural management techniques. The study assessed the effects of locally available organic resources to improve soil fertility, crop yield and profitability compared to business as usual on farms in the Eastern and Greater Accra regions of Ghana. Apart from this, we analyzed the change of farmers' perceptions and knowledge upon the experience with the new techniques; the effect of using locally available organic resource on farmers' yield and determined the factors influencing the profitability of farming. Using the Difference in Mean Score and Proportion to estimate the extent to which farmers' perceptions, knowledge and practices have changed, the study showed that farmers' perception, knowledge and practice on the use of locally available organic resources have changed significantly. This paves way for the sustainable use of locally available organic resource for soil fertility improvement. The Propensity Score Matching technique and Endogenous Switching Regression model used showed that using locally available organic resources have the potential to increase crop yield. It was also observed that using the Profit Margin, Net Farm Income and Return on Investment analysis, it is more profitable to use locally available organic resources than other soil fertility amendments techniques studied. The results further showed that socioeconomic, farm characteristics and institutional factors are significant in influencing farmers' decision to use locally available organic resources and profitability.

Keywords : soil fertility, locally available organic resources, perception, profitability, sustainability

Conference Title : ICA 2020 : International Conference on Autecology

Conference Location : Toronto, Canada

Conference Dates : June 18-19, 2020