

Effects of Application of Rice Husk Charcoal-Coated Urea and Rice Straw Compost on Growth, Yield, and Soil Properties of Rice

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Abstract : Rice is one of the world's most important cereals. Increasing food production both to meet in-country requirements and to help overcome food crises is one of the major issues facing Sri Lanka today. However, productive land is limited and has mostly been utilized either for food crop production or other uses. Agriculture plays an important and strategic role in the performance of Sri Lankan national economy. A variety of modern agricultural inputs have been introduced, namely ploughs and harvesters, pesticides, fertilizers and lime. Besides, there are several agricultural institutions developing and updating the management of agricultural sector. Modern agricultural inputs cooperate as a catalyst in raising the productivity. However, in the eagerness of gaining profits from the efficient and productive techniques, this modern agricultural input has affected the environment and living things especially those which have been blended from various chemical substance. The increased pressure to maintain a high level of rice output for consumption has resulted in increased use of pesticides and inorganic fertilizer on rice fields in Sri Lanka. The application of inorganic fertilizer has become a burdened to the country in many ways. The excessive reuse of the ground water resources with a considerable application of organic and chemical fertilizers will lead to a deterioration of the quality and quantity of water. Biochar is a form of charcoal produced through the heating of natural organic materials. It has received significant attention recently for its potential as a soil conditioner, a fertilizer and as a means of storing carbon in a sustainable manner. It is the best solution for managing the agricultural wastes while providing a useful product for increasing agricultural productivity and protecting the environment. The objective of this study was to evaluate rice husk charcoal coated urea as a slow releasing fertilizer and compare the total N, P, K, organic matter in soil and yield of rice production.

Keywords : biochar, paddy husk, soil conditioner, rice straw compost

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