

## **GROWTH AND YIELD RESPONSE OF ONION (*Allium cepa*) FOR DIFFERENT TYPE OF BIOCHAR AND FERTILIZER REGIME IN RED YELLOW LATASOLS IN JAFFNA PENNINSULA**

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Soil fertility is an essential aspect for sustainable agricultural productivity. It is a manageable soil property and its management is vital for achieving sustainable crop production in both short-term and long-term. Biochar is produced as an amendment to soil, mainly to improve nutrient retention and carbon storage. In the Jaffna peninsula, soil has low fertility due to intensive cultivation. Therefore farmers use inorganic fertilizers at very higher rates than the departmental recommended rates even though the yield is not high. This research was conducted to find the response of *Allium cepa* (onion) for three types of biochar namely coconut char (CC), palmyrah char (PC), and paddy husk char (PHC) in combination with organic and inorganic fertilizers and to find the effect of these biochar on growth parameters of onion. The field experiment was carried out at the Regional Agriculture Research Station, Thirunelvely. Randomized Complete Block design was used with three replicates and eight treatments. The treatments were, department recommended fertilizer (DRF), farmers practice fertilizer (FPF) and each three types of biochar with either DRF or FPF. Treatment, farmer practice fertilizer and paddy husk char (T7) showed the significantly highest mean plant height (23.2 cm), mean number of cluster per plant (6.5) and mean cluster weight with leaves (15.86 g). Similarly, T7 treatment showed the significantly highest mean cluster weight without leaves (14.75 g), mean fresh weight of yield (6750 kg/ha) and average yield (6393 kg/ha). Hence the study results revealed that the yield of onion can be increased by using farmer practice fertilizer with paddy husk char than farmer practice fertilizer alone.

Keywords: Biochar, Onion, Growth and yield

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