**Nutrient Exchange by Cinnamon (*Cinnamomum zeylanicum* Blume) Wood Biochar as Affected by the Methods of Preparation**

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At the commercial level, most of the growers used higher doses of inorganic fertilizers causing problems related to nutrient retention and leaching. The bark of the cinnamon wood has the potential to use value-added products like biochar. Biochar can retain nutrients and also it can slowly release them to the soil solution for the plants to use. The present study aimed to test the effect of different methods of biochar preparation using cinnamon wood, in relation to the nutrient exchange properties. The methods used to prepare biochar were the Muffle furnace method (T2), cone pit method with 50 minutes of burning(T3) and cone pit method with 70-minute burning(T4), double barrel method with burning time for 70 minutes (T5) and for 90 minutes (T6) used as treatments. The experiment was carried out over 2 months using a nutrient solution (20% Urea, 10% Muriate of Potash and 10% Triple Supper Phosphate) being added at the rate of 600ml per column at the beginning and at the middle of the experiment. One litre of water was added and drained out after 24 hours continuously and every 8-day intervals sample were taken for the analysis. The column only with subsoil (T1) recorded the highest nitrogen (N) amount in the leachate. Nitrogen leached out from the soil can dramatically be reduced by treating the soil with cinnamon wood biochar and T5 (667.33ppm) and T6 (583.33ppm) showed the best nitrogen retention in the soil among the methods tested. Phosphorus (P) was lost in most treatments; however, phosphorus in available form was detected in T6 (8.9867ppm) in the final media. In addition to the retention of nitrogen, phosphorus and potassium (K), biochar also contributes P and K to the soil. It was evident that the method of preparation of Cinnamon wood biochar affects nutrient retention by biochar in the soil media.

**Keywords:** *biochar, cinnamon wood, leaching, nutrient retention,*