

BIOCHAR-AMMONIUM PHOSPHATE AS AN UNCOATED-SLOW RELEASE FERTILIZER IN SANDY SOIL

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The invention relates to an ecofertilizer including a granular Biochar-Ammonium Phosphate (BAP) fertilizer utilizing by biochar as a renewable support grid. In this study we assessed the impact of two types of uncoated-slow release fertilizer in two types of Biochar-Ammonium Phosphate (BAP1&BAP2) on nitrogen use efficiency (NUE) and N losses in leachate water compared with chemical N fertilizer (ammonium phosphate, AP). Additionally the Surface Morphology of biochar, BAP1 and BAP2 fertilizer were investigated by SEM and FT-IR. SEM and FT-IR confirm the phenomena of impregnation of ammonium phosphate inside the biochar's pores. Nitrogen filtered through water system from both BAP1 and BAP2 were observed to be low and contrasted with AP fertilizer. Plants treated with either BAP1 or BAP2 demonstrated fundamentally expanded in N content and vegetative development compared with AP, however no critical contrasts were found among BAP1 and BAP2 fertilizers. The synthesis of this fertilizer in this way makes it a first of its kind using organic material in the manufacture of slow release fertilizer. Subsequently, BAP could be used as an uncoated-slow release fertilizer to maximize the functions of the nitrogen fertilizer under sandy soil and minimize the environmental impact.