

than those under between 250 and 350, however when temperature was 500, water soluble P was significantly lower than those under 400 and 450, but still higher than those under 250 to 350. pH increased with rising temperature, but water absorb capacity decreased with rising temperature. Maize height was significantly shorter at high biochar amendment treatment 144 g kg⁻¹ dry soil than low (7.2 g kg⁻¹ dry soil) and zero biochar amendments on day 13 after sowing, along with experiment going on, the impeding effect disappeared. However no stimulation effects of biochar on maize growth were found till now.

Composting of food waste containing biochar as biological medium and carbon sequestration by using the compost for the field

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Composting factory in a suburban area of Tokyo deals 100 tons of food industry waste a day added with charcoal. Undesired materials such as plastic, steel and aluminum materials are separated from food garbage with a separator. Then, charcoal of several % and returned compost are mixed to the garbage, and the mixture is thrown into the top of a fermentation tank. The temperature of the mixture increases to 60-70°C, because aerobic microorganisms proliferate on the surface of the charcoal. After 2 weeks, the first fermented compost is pull out of the tank. After two months the matured compost is prepared. Finally, the compost contains ca. 10 wt% of biochar. Biochar and the compost were used for the field; 2 kg/m² of biochar 2 kg/m² of the compost for 5 a, 2 kg/m² of the compost for 5 a and no use of biochar and the compost: Yield of the spinach was 1.9 kg/m², 1.6 kg/m² and 1.3 kg/m², respectively. The total carbon, the total nitrogen and the carbon sequestration amount in the field was measured. Green house gases of CO₂, CH₄ and N₂O emitted from the field were also measured.

Salt grass biochar and combustion residue as factors in the fixation of P in a saline soil

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The "hot" or combustion "in situ" of plant residues from harvesting and pruning, as well as weed is considered one of the most traditional and universal exerted on the ground in the field of agriculture. This process contributes to the overall increase and local air pollution as it generates among other greenhouse gases like CO₂, particulate matter such as coal and other substances that can be regarded as harmful, so it is necessary to explore alternatives that minimize this problem, but at the same time means a contribution to the benefit of farming. In this perspective appears pyrolytic production of biochar with plant debris, replacing the combustion product properties in aqueous media involve a basic pH and release of alkali cations. In this scenario, we propose that the residue of combustion (RC), do do the chemical process of collection, including roasting, and given the nature of the plant material, when incorporated into soil, in the same proportions that biochar, generated in its interaction with water, chemical changes and physical-chemical processes in the soil more firmly in favor of phosphate by the mechanism of precipitation reaction with calcium in an alkaline medium