



## **TITLE: Impact of Biochar as a Soil Conditioner to Improve the Soil Properties of Saline Soil and Productivity of Tomato**

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### **ABSTRACT (upto 300 words)**

Biochar increases crop yield, soil reliability, and carbon sequestration. This study examined how biochar affected soil properties and tomato yield in saline soil. The experiment was conducted in areas surrounding Khulna Agricultural University and in farmers' fields close to Khulna, Bangladesh. The experiment's layout was a randomized complete block design (RCBD). Tomato cultivation with eight treatments and three replications used biochar with the recommended fertilizer dose (RFD). Using biochar in saline soil significantly influenced tomato growth and yield character. Days after planting, plant height was dramatically impacted by various biochar treatment levels. The height of tomato plants ranged from 65.38 to 46.37 cm, yielding 49.23 tons per hectare. The experiments used biochar treatments to grow more tomatoes than traditional fertilizers and a control treatment. Compared with control treatments, biochar also changed the properties of salty soil after it was harvested. The soil's pH is 6.51 and its particle density is highest at 2.65. The control treatments had the highest EC value, which was 2800, and the

biochar application treatments had the lowest EC values. At 100 s/cm, the EC value made the soil 0.6 ppt saltier in the control treatment without biochar, but adding biochar made the soil 0.1 ppt less salty. The percentages of carbon, nitrogen, and organic matter were also the highest that they had been (1.88%, 1.073%, and 2.58%, respectively). The phosphorus concentration in the soil was 19.47 g/g after harvesting. The majority of K and S values used to treat salty soils are interchangeable. Significant changes in tomato growth, yield, and soil properties occurred when biochar was combined with recommended fertilizer doses and applied to saline soil for tomato cultivation.

### **BIOGRAPHY (upto 200 words)**

I'm currently working as an assistant professor in the Department of Soil Science, Faculty of Agriculture, Khulna Agricultural University (KAU), Khulna, Bangladesh. I am so interested in dedicating myself to the research area of improving agricultural productivity in a sustainable way.

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**Mode of Presentation:** Oral.

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