

**Abstract No. 49****Response of maize and groundnut to biochar in charland**M.A. Rahman<sup>\*1,2</sup>, M.A. Kader<sup>1,3,4</sup>, M. Jahiruddin<sup>1</sup>, M.R. Islam<sup>1</sup><sup>1</sup> Department of Soil Science, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh<sup>2</sup> Soil Science Division, Bangladesh Agricultural Research Institute, Gazipur, Bangladesh<sup>3</sup> School of Agriculture and Food Technology, University of South Pacific, Apia, Samoa<sup>4</sup> School of Veterinary and Life Science, Murdoch University, WA 6150, Australia

**Abstract** Biochar, a product of biomass pyrolysis, could be a good means for sequestering organic carbon, and improving soil fertility and crop yield. No systematic research has been yet conducted in Bangladesh particularly using locally available feedstock. Thus, biochar was produced from unutilized sugarcane bagasse at 7500C. A crop response study was conducted on silty alluvium soil at farmland RARS, Jamalpur and sandy soil at charland of Brahmaputra river in Jamalpur by using this biochar at different dosages (5 and 10 t ha<sup>-1</sup>) and methods of application (surface and furrow) in November 2016. Three other treatments were included as check namely control, 100% STB fertilizer and cowdung (CD) @ 5t/ha. The experiment was laid out in a randomized complete block design with seven treatments and three replications using maize var. BARI hybrid phuti 7 and groundnut var. BARI china 1 as test crops in both locations. Soil moisture and growth parameters were monitored during crop growth period. Soil moisture content of biochar amended plots were higher (9% and 4%) than that of control and STB fertilizer treated plots at both charland and farmland. Crop greenness was recorded by Green Seeker (handheld crop sensor) where biochar amended treatments showed better response (17% and 11% NDVI) over control for both the crops at farmland. Results showed that biochar amendment enhanced plant height, ear height, cob length, cob diameter, grain and biomass yield of maize crop in both locations. Yield and yield contributing characters of groundnut positively varied with biochar amendment in charland while no response was found in farmland

**Keywords** Biochar, Maize, Groundnut, Charland