

Figure S1. Scanning electron microscope (SEM) image of maize straw-biochar.

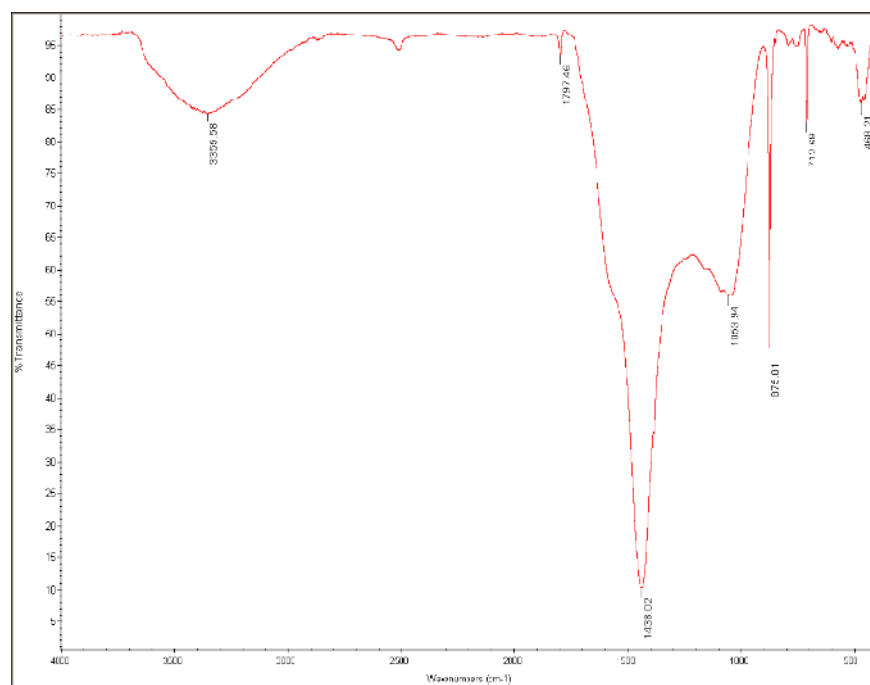


Figure S2. Fourier transform infrared (FTIR) spectrum of maize straw-biochar.

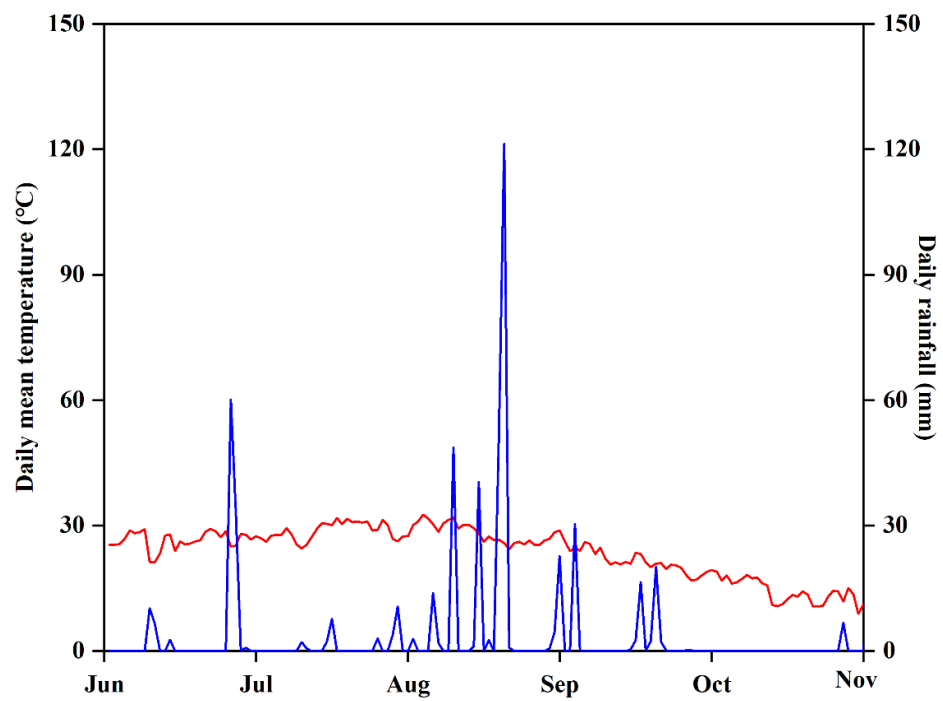


Figure S3. Daily mean temperature and precipitation during the plant growth period of maize.

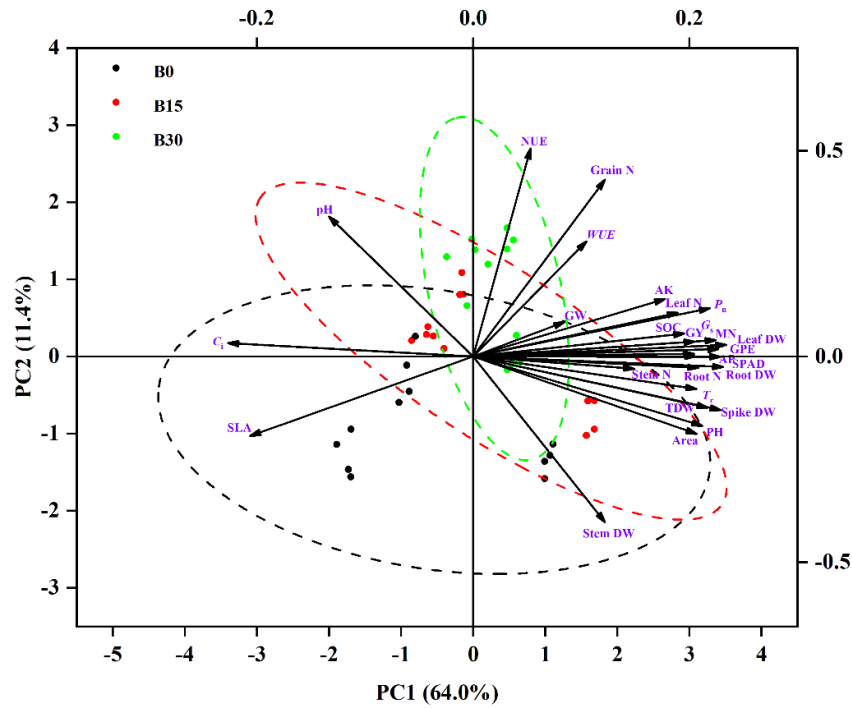


Figure S4. Biplot of first (PC1) and second (PC2) principal components of 36 evaluated traits in different biochar treatments. AK – available potassium content, AP – available phosphorus content, Area – leaf area, C_i – intercellular CO₂ concentration, GE – grains per ear, G_s – stomatal conductance, Grain N – nitrogen content in maize grain, GW – 100-grain weight, GY – grain yield, Leaf DW – dry weight of maize leaf, Leaf N – nitrogen content in maize leaf, MN – mineral nitrogen content, NUE – nitrogen utilization efficiency, P_n – net photosynthetic rate, pH – soil pH, PH – plant height, Root DW – dry weight of maize root, Root N – nitrogen contents in maize root, SLA – specific leaf area, SOC – soil organic carbon, Spike DW – dry weight of maize spike, SPAD – leaf SPAD values, Stem DW – dry weight of maize stem, Stem N – nitrogen content in maize stem, T_r – transpiration rate, WUE – water use efficiency.