



## **Effect of sewage sledge and their bio-char on some soil qualities**

Hamed fathi (1,3), Seyed Alireza Movahedi Naeini (1), Mojan Mirzanejad (2,3)

(1) Gorgan University of agriculture sciences and Natural resources Gorgan, Iran, (2) Department of Chemistry, Islamic Azad University- Rasht Branch, Rasht, Iran , (3) Young researchers and elites club, Rasht Branch, Islamic Azad University, Rasht, Iran

Bio char (BC) application as a soil amendment has achieved much interest and has been found that considerably improves soil nutrient status and crop yields on poor soils. However, information on the effect of BC on illitic soils in temperate climates is still insufficient. The primary objective in this study was to assess the influence of biochar on the soil physical properties, nutrient status and plant production. The result may also provide a reference for the use of biochars as a solution in agricultural waste management when sludge with considerable load of pathogens are involved. Soybean was already grown one year and will be repeated one more year with same treatments. The investigated soil properties included soil water content and mechanical resistance, pH, electrical conductivity (EC), calcium- acetate-lactate (CAL)–extractable P (PCAL) and K (KCAL), C, N, and nitrogen-supplying potential (NSP). The results show soil water content, potassium uptake and plant yield were increased. Heating sludge removed all pathogens and soybean yield was increased by 6%.