1.However, the total dose of potassium fertilizer (60 kg K2O ha− 1) in the form of potassium sulphate (48% K2O) was added directly before the first irrigation.E) during two growing seasons (2017–2018 and 2018–2019) to explore the combined effects of inorganic and organic soil amendments (i.e. sulfuric acid, gypsum and vermicompost) and tillage systems (i.e. zero, reduced and deep tillage) on soil physical and chemical characteristics, crop growth and yield of a new high yielding bread wheat cultivar (Triticum aestivum L., cv Misr 2).The RT included rotary tiller at 0–15 cm soil depth, whereas the DT was assigned to sub–soiling up to 60 cm soil depth alongside the traditional ploughing with a moldboard plow up to 30 cm soil depth.Tillage systems (i.e. ZT, RT and DT) were placed in horizontal plots, while soil amendments (i.e. control, vermicompost, sulfuric acid and gypsum) were placed in vertical plots.The gypsum was characterized as follows: pH, 7.0; electrical con− ductivity (EC), 2.2 dS m− 1; purity, 85.0%; particle size diameter, 50 x 10− 3 m; solubility, 2.9 g L− 1).Experimental design and agricultural practices A field experiment was conducted in saline–sodic soil in the North Nile Delta of Egypt (Elserw district; 31o 15?Soil amendments (i.e. vermicompost and gypsum) were added with tillage process and directly before sowing of wheat grains, and sulfuric acid was added with irrigation water applied through the growing season.Vermicompost was prepared in a vermi− composting bin with dimensions of 100 x 120 x 50 cm. Crop residues (rice, cotton and maize straw) were used as materials of vermicompost.The recom− mended dose of synthetic fertilizers of NPK were applied.N, 32o 6?