

**Fig. S1.** Combined Pearson correlation analysis of all sandy soil sites and management practices of Zimbabwe. GY – Grain yield; APB – aboveground biomass; MBC – microbial biomass C; TC – total carbon; TN – total nitrogen; CEC – cation exchange capacity; NH4.N – ammonium nitrogen; NO3.N – nitrate N; EC – electrical conductivity.

 

**Fig. S2.** Combined Pearson correlation analysis of all clay soil sites and management practices of Zimbabwe. GY – Grain yield; APB – aboveground biomass; MBC – microbial biomass C; TC – total carbon; TN – total nitrogen; CEC – cation exchange capacity; NH4.N – ammonium nitrogen; NO3.N – nitrate N; EC – electrical conductivity.

 

**Fig. S3.** Combined Pearson correlation analysis of conventional practice (tillage with crop residue removal) on sandy soils of Zimbabwe. GY – Grain yield; APB – aboveground biomass; MBC – microbial biomass C; TC – total carbon; TN – total nitrogen; CEC – cation exchange capacity; NH4.N – ammonium nitrogen; NO3.N – nitrate N; EC – electrical conductivity.

 

**Fig. S4.** Combined Pearson correlation analysis of no-tillage practices (with residue retention) on sandy soils of Zimbabwe. GY – Grain yield; APB – aboveground biomass; MBC – microbial biomass C; TC – total carbon; TN – total nitrogen; CEC – cation exchange capacity; NH4.N – ammonium nitrogen; NO3.N – nitrate N; EC – electrical conductivity.

 

**Fig. S5.** Combined Pearson correlation analysis of conventional practice (tillage with crop residue removal) on clay soils of Zimbabwe. GY – Grain yield; APB – aboveground biomass; MBC – microbial biomass C; TC – total carbon; TN – total nitrogen; CEC – cation exchange capacity; NH4.N – ammonium nitrogen; NO3.N – nitrate N; EC – electrical conductivity.



**Fig. S6.** Combined Pearson correlation analysis of no-tillage practices (with residue retention) on clay soils of Zimbabwe. GY – Grain yield; APB – aboveground biomass; MBC – microbial biomass C; TC – total carbon; TN – total nitrogen; CEC – cation exchange capacity; NH4.N – ammonium nitrogen; NO3.N – nitrate N; EC – electrical conductivity.