



Figure 6. MCS enables roots to better penetrate soils with a hard wax layer in maize and wheat. A) maize genotypes with MCS have a greater penetration ratio compared to genotypes with no MCS. B) Average penetration ratio of maize genotypes with MCS compared to the average penetration ratio of non-MCS genotypes. C) wheat genotypes with MCS have a greater penetration ratio compared to genotypes with no MCS. D) Average penetration ratio of wheat genotypes with MCS compared to the average penetration ratio of non-MCS genotypes. Penetration ratio was calculated as the ratio of the number of roots penetrating the compacted layer to number of roots reaching the compacted layer. Data shown are means  $\pm$  standard error (SE) for four replications per genotypes (n=12 in maize, n=16 for wheat with MCS, n=32 for wheat without MCS) of all axial roots. Means with the same letters are not significantly different ( $p \leq 0.05$ ) according to Tukey's HSD.