

SUPPLEMENTARY DATA

Fig. S1. The effect of various Al^{3+} concentrations on seminal root growth and average root diameter of seedlings grown in hydroponic culture. Seedlings were grown in nutrient solution that contained AlCl_3 ranging from 0 to 40 μM and after 14 days (A) the length of the three longest seminal roots and (B) average root diameters were measured. The germplasm included 'Chinese Spring', the 4D(4B) substitution line and composite T and S lines where 3 lines of each of T and S were combined. Root diameters for the S lines were only measured for the 0 Al treatment since root growth was severely reduced in all other treatments.

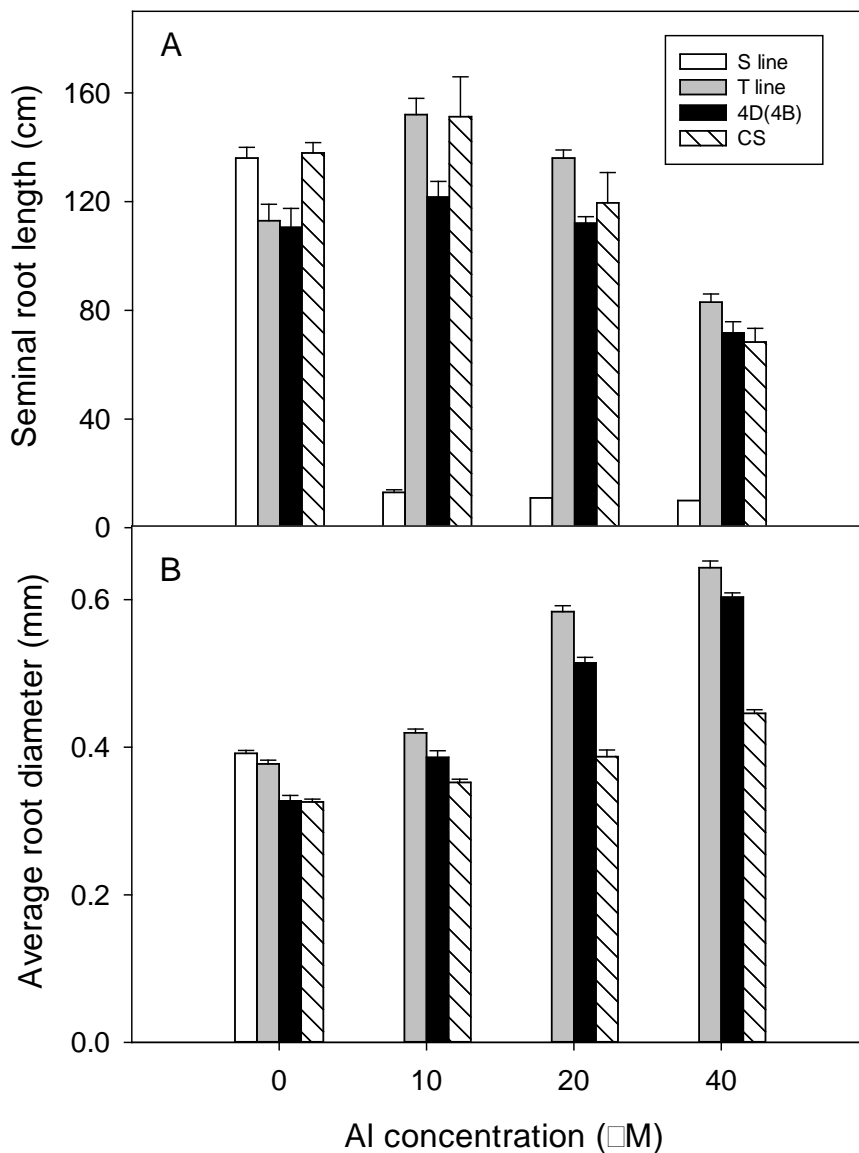


Fig. S2. A 4D chromosomal fragment enhances growth of seminal roots of durum wheat grown on an acid soil. Growth of the three longest seminal roots was assessed for lines ‘Jandaroi’, BC_3 lines with a 4D chromosomal fragment (T1, T2 and T6), BC_3 sister lines lacking the fragment (S1, S3 and S6), 4D(4B) substitution line and ‘Chinese Spring’ (hexaploid donor of the 4D chromosomal fragment) on an unamended acid soil (soil Batch A: Materials and Methods) and the same soil that had been limed at various rates. Plants were harvested 7 d after sowing and the data show treatment means and the error bars the standard errors of the mean ($n = 4$).

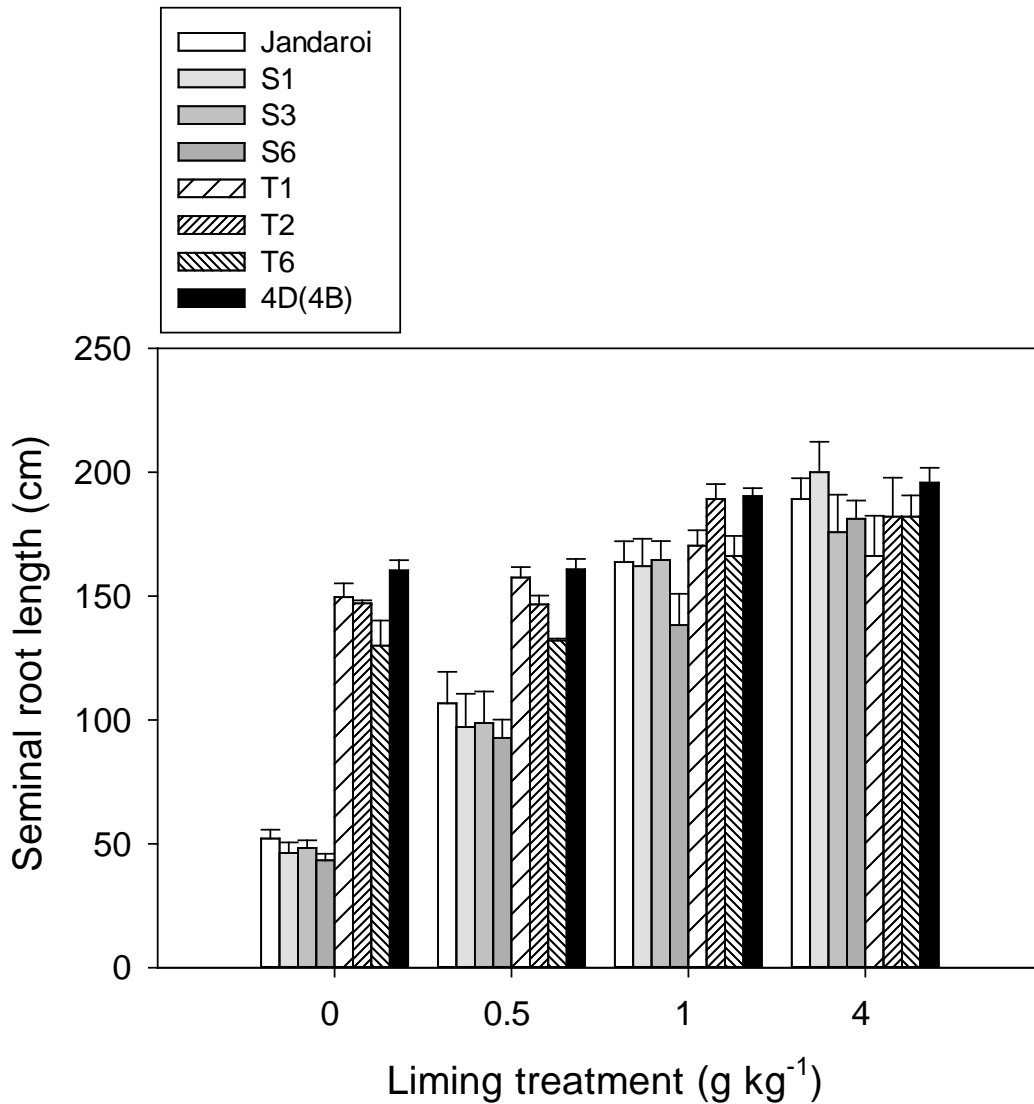


Fig. S3. A 4D chromosomal fragment enhances growth of fine roots of durum wheat grown on an acid soil with low Al^{3+} toxicity (soil Batch B: Materials and Methods). (A) Length of the three longest seminal roots, (B) length of fine roots and (C) average root diameter was assessed for lines T6 and S6 grown on an acid soil that had been limed at various rates. Plants were harvested 7 d after sowing and the data show treatment means ($n = 3$), error bars show the standard errors of the means and the asterisks denote that the genotypes differed at a given liming treatment ($P < 0.05$).

