



Variation in sorghum root traits for future climate resilience

Josefine Kant, Tobias Wojciechowski

Forschungszentrum Jülich GmbH, Institute of Bio- and Geosciences – Plant Sciences (IBG-2), 52425 Jülich, Germany



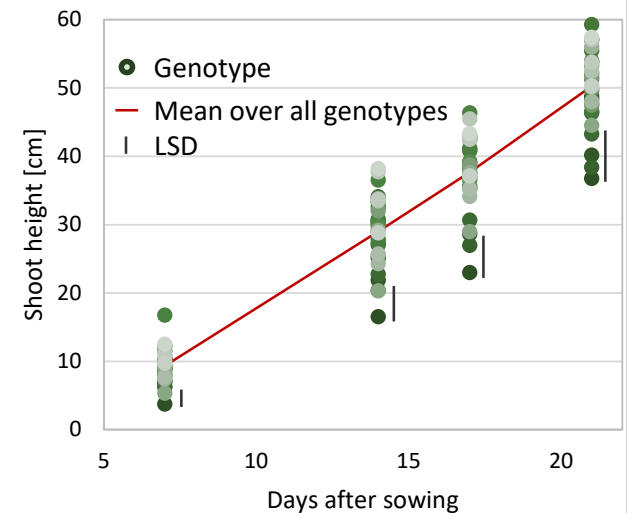
Contact:
j.kant@fz-juelich.de

Background and aim

Sorghum is closely related to maize, but more drought & heat tolerant than its relative. It may therefore harbour genetic information for higher resilience which could be used for production of improved sorghum as well as maize lines more resilient to future climatic conditions. Phenotypic variation is instrumental for breeding and identification of genetic correlations and markers.

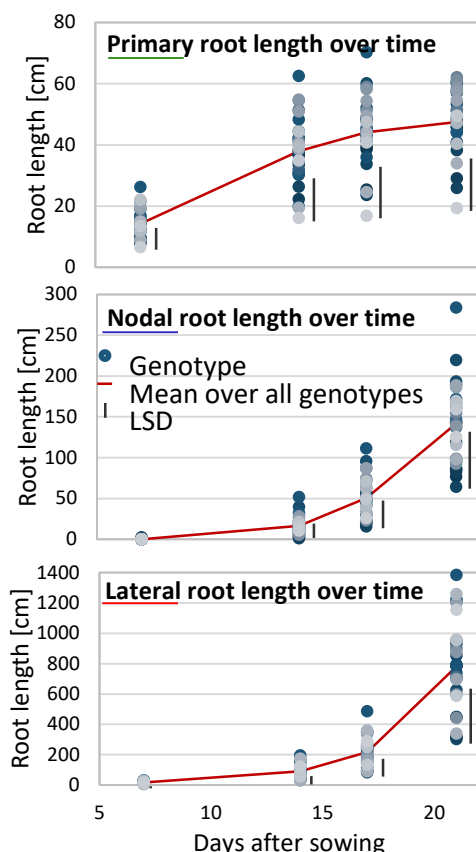
Aim: Analyse the phenotypic, dynamic variation of sorghum root & root hair traits.

Shoot variation in rhizotrons was stable over time

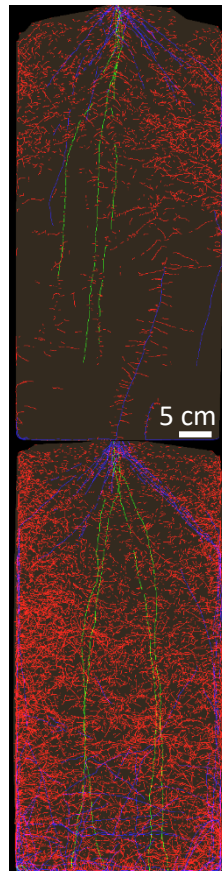


30 diverse *Sorghum bicolor* lines grown in soil-filled rhizotrons for 21 days.

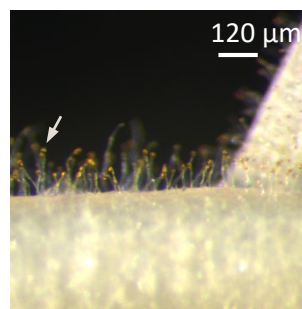
Dynamic phenotypes in sorghum root traits have a high variation, but correlate to root hair formation and shoot height.



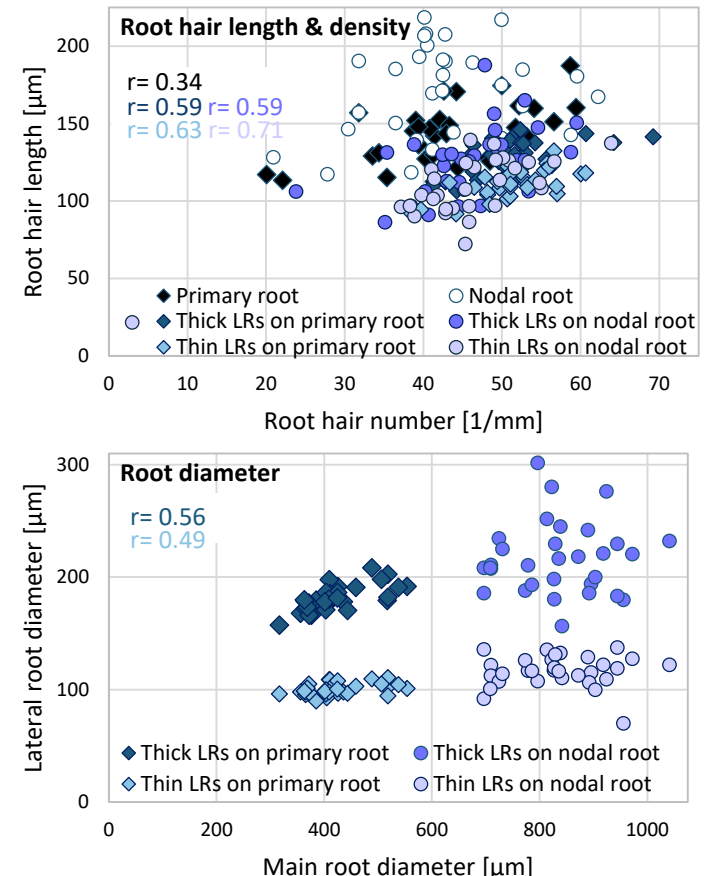
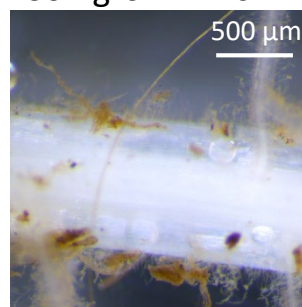
Smallest root system (n=4)



Root hair (Rh) formation of filter paper-germinated sorghum plant.



Soil-grown Rhs.



Root length variation increased over time

Root hairs grew root type-dependent, with higher variation on nodal roots

