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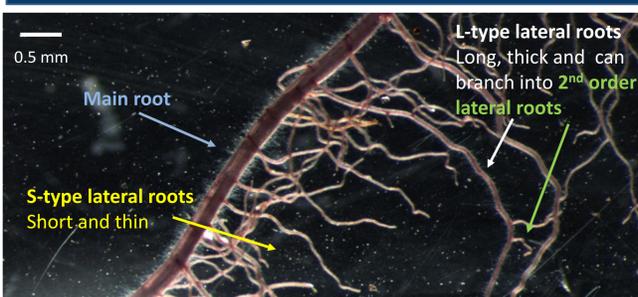


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Researchgate

## Root architecture variation within *aus* rice lines (*Oryza sativa*)

### Background – *aus*-panel & lateral roots



*aus*-panel  
The *aus*-panel evolved in stress-prone areas and is therefore an interesting breeding source.

### Method

Field experiment 2022  
206 lines were sown in two locations with three replicates at the international rice research institute (IRRI) (performed and tissue sampled by Dr. Amelia Henry).



### Questions

Do thicker main roots support more lateral root area?

Which variables explain the most variation within the *aus*-panel?

### Branching in relation to diameter

The crown (5cm) of one medium-sized tiller was measured. The main root diameters and corresponding lateral root areas were measured with WinRhizo.

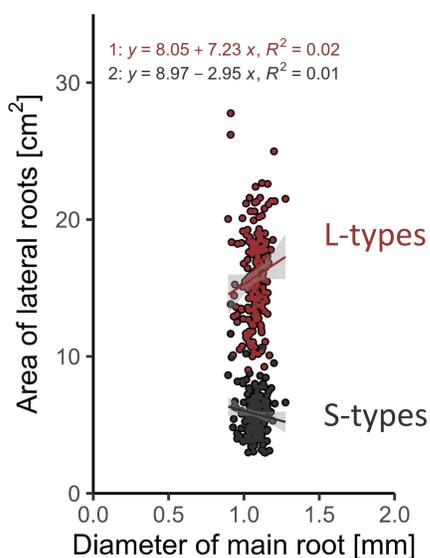


Fig 1: Lateral root area relative to main root diameter. The lines were normalised to a five centimeter nodal root and every dot represents one line (n=6).

### Variation *aus*-panel

S-type lateral root distribution on main roots and differences in surface area of the root types explain 48% of variation of the tested *aus*-panel.

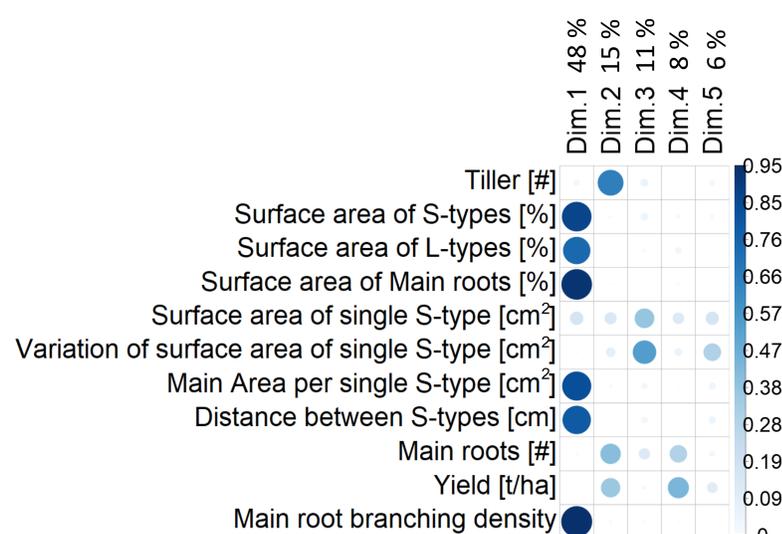


Fig 2: Principal component analysis (PCA) from scanned root crown data

### Conclusion

1) Lateral root area is independent of main root diameter.

2) Surface area of different root types and S-type lateral roots distribution on main roots causes most variation of the *aus*-panel.

### Outlook

In my PhD project I investigate lateral root variation of the *aus*-panel. In further steps I will test the influence of lateral root formation on plant recovery under repeated drought stress cycles.