

Is microbial resilience to drying-rewetting driven by selection for quick colonizers?



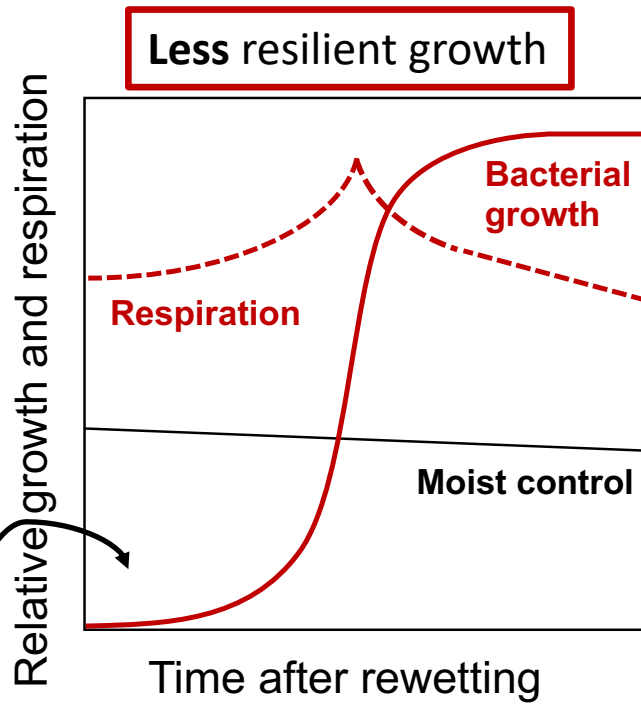
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Lettice C. Hicks, Simon Lin, Johannes Rousk

Lund University, Microbial Ecology

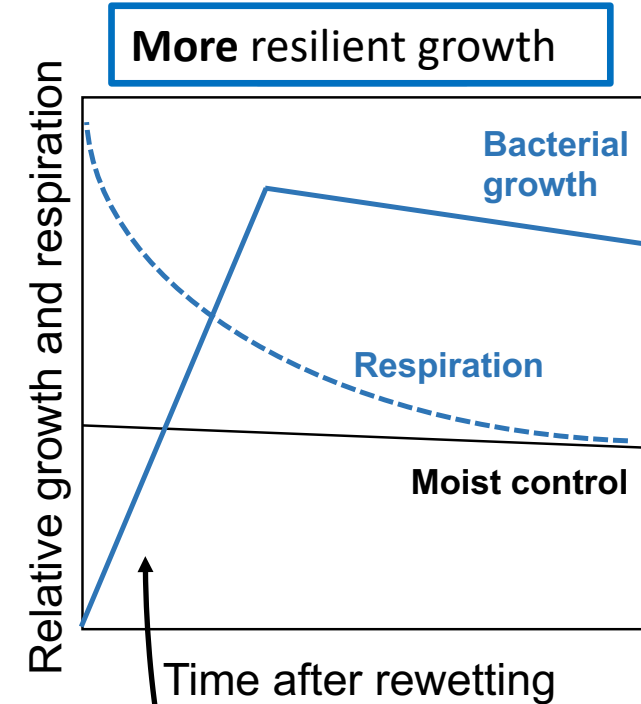
Contact: lettice.hicks@biol.lu.se

Drying-rewetting (D/RW) can induce two types of bacterial growth response



Shift in response:

- In soils with history of drought (in field)
 - In soils exposed to cycles of D/RW (in lab)
- See de Nijs et al. (2019; GCB 25: 1005-1015)

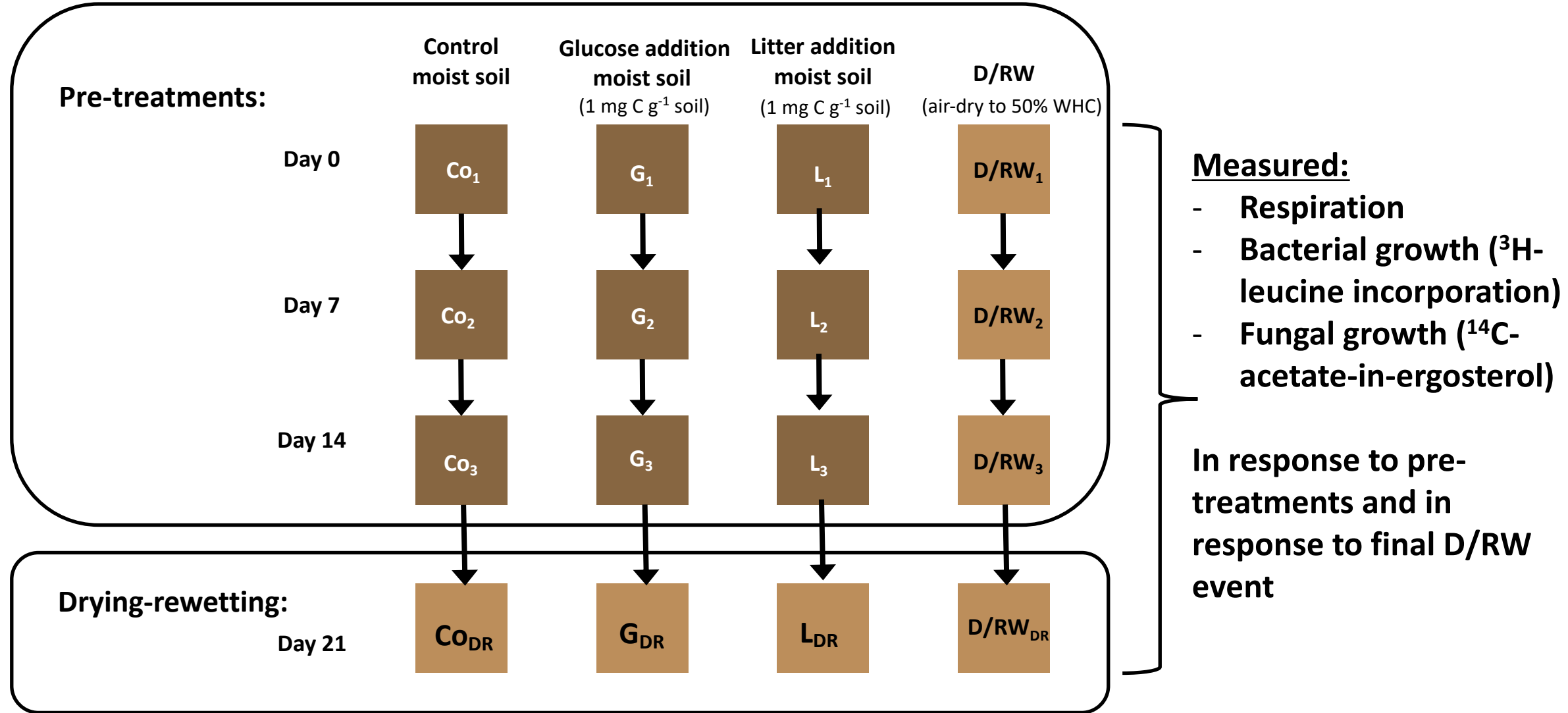


Delay before bacterial growth rate increases

Q: Is shift in response driven by selection for microbes quick at colonizing labile C released upon D/RW?

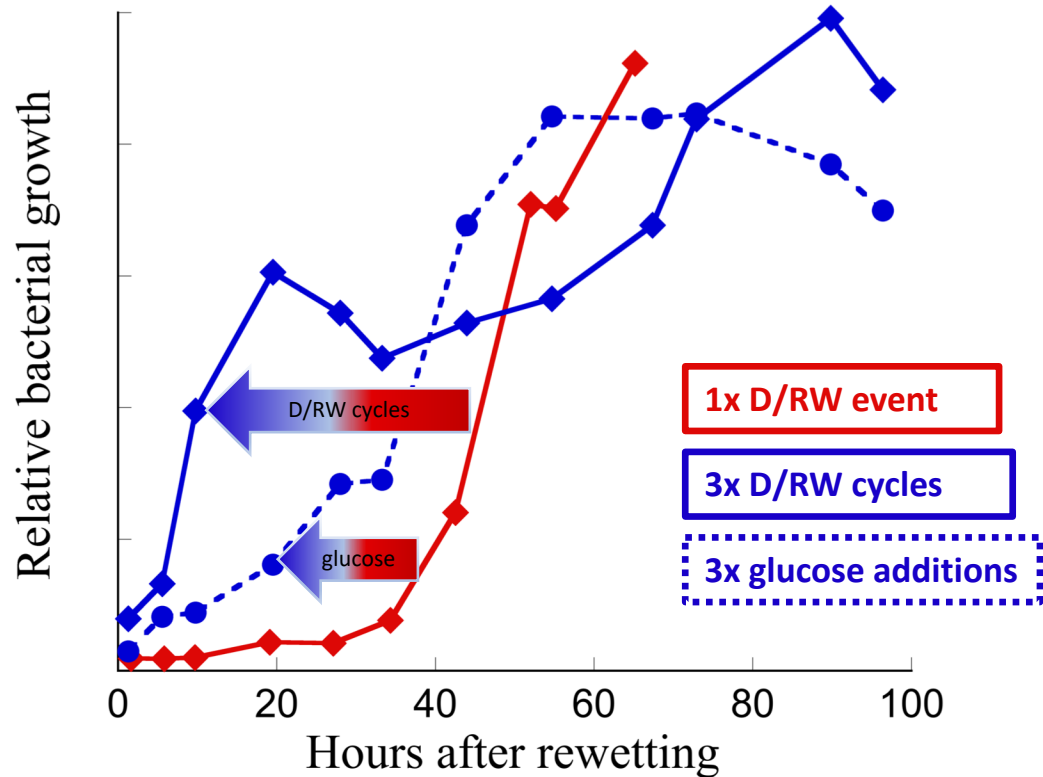
Immediate increase in growth rate after D/RW

Approach

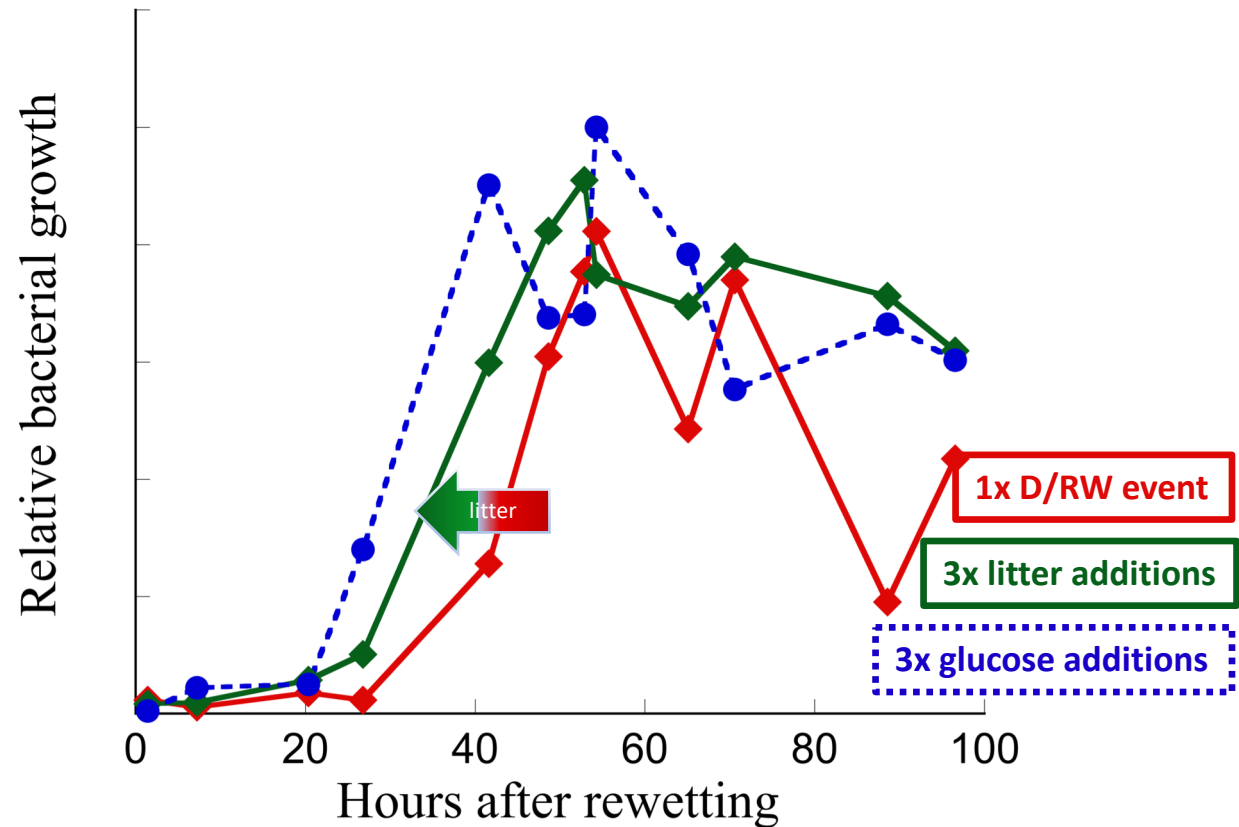


Preliminary results!!

1. Glucose additions reduced – but did not eliminate – the lag before onset of bacterial growth



2. Litter additions only marginally reduced lag in response



Conclusion: selection for quick colonizers partly explains shift from less to more resilient growth response to repeated D/RW