Afforesting with microbes: disentangling the effects of soil biotic and abiotic characteristics on trees using soil inoculation

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Stellingen

Behorende bij het proefschrift

Afforesting with microbes:
disentangling the effects of soil biotic and abiotic characteristics on trees using soil inoculation

1. Soil abiotic characteristics are major drivers of both the community composition and the functions of soil biota during forest development. (This thesis)
2. Simplifying soil communities can lead to positive effects on plant performance such as plants producing more above- and belowground biomass. (This thesis)
3. Soil microbes can suppress the positive effects of *Frankia* on plant biomass production without affecting nodule biomass. (This thesis)
4. NIR spectroscopy can detect spectral differences that cannot be detected by the SPAD measurements and can be used to differentiate between symbiotically-fixed and soil-derived N. (This thesis)
5. Soil inoculation is a powerful tool not only to restore ecosystems but also to understand plant-soil interactions.
6. As tree plantations mature into forests, soil-dwelling fungi play an increasingly prominent role in soil ecological processes relative to bacteria, driven by shifts in soil conditions and tree establishment that favor fungal proliferation.
7. The current focus and efforts in restoration and agriculture on increasing soil biodiversity often conflate taxonomic with functional soil biodiversity, wrongly assuming that a taxonomically diverse community will also provide a diverse array of functions.
8. While climate chamber mesocosm experiments yield valuable insights into plant-soil interactions under controlled conditions, they should always be complemented by field experiments to validate findings in real-world environmental contexts.
9. Finishing a PhD is like finishing a group project where one partner made a ton of mistakes at the beginning. Except you are that partner four years ago.
10. Completing a PhD feels less like mastering everything, and more like becoming aware of how much more there is to learn—echoing the Socratic idea that true wisdom lies in recognizing one's own ignorance.