

B07 Functional diversity of mycorrhizal fungi along a tropical land use gradient

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Three transformation systems of primary rainforest with:

increasing land use gradient

J = Jungle-rubber



R = Rubber plantation



O = Oil palm plantation



How is root nutrition status influenced by mycorrhizal colonization in dependency to land use?

Sampling and Processing

Sampling in transformation systems of Bukit Dua Belas and Harapan landscape was performed in October and November 2013.



1: Sampling in a rubber plantation

2 and 3: soil corer and hammer

Each soil core was separated into different fractions.



4: soil core (20cm depth; 4cm diameter)



5: First processing in UNJA

Relation between dead and vital root tips was counted.

Vital root tips

Dead root tips



6: Ectomycorrhizal (EM) root tip from J



7: Non-EM root tip from R



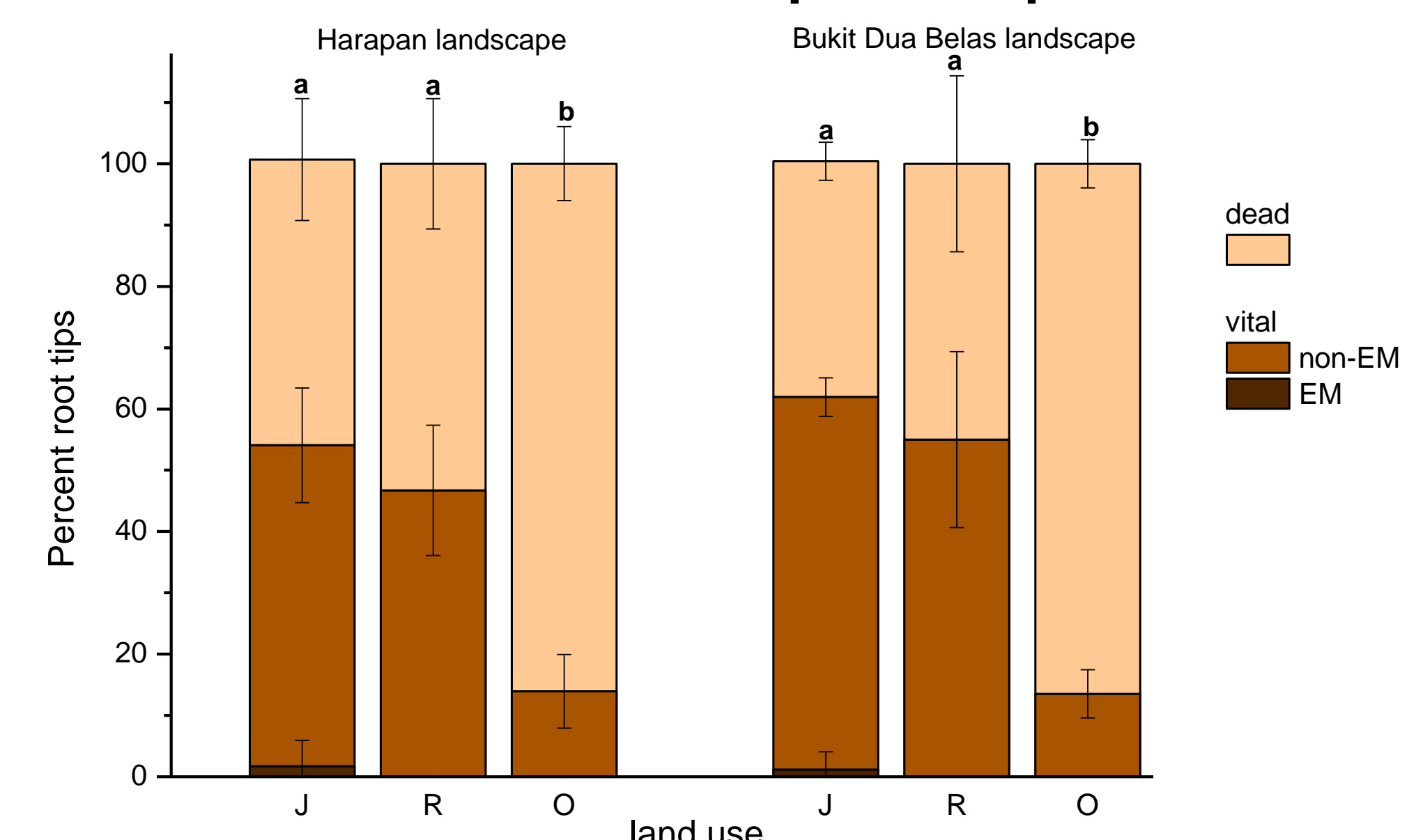
8: Dead root tips from O

Outlook

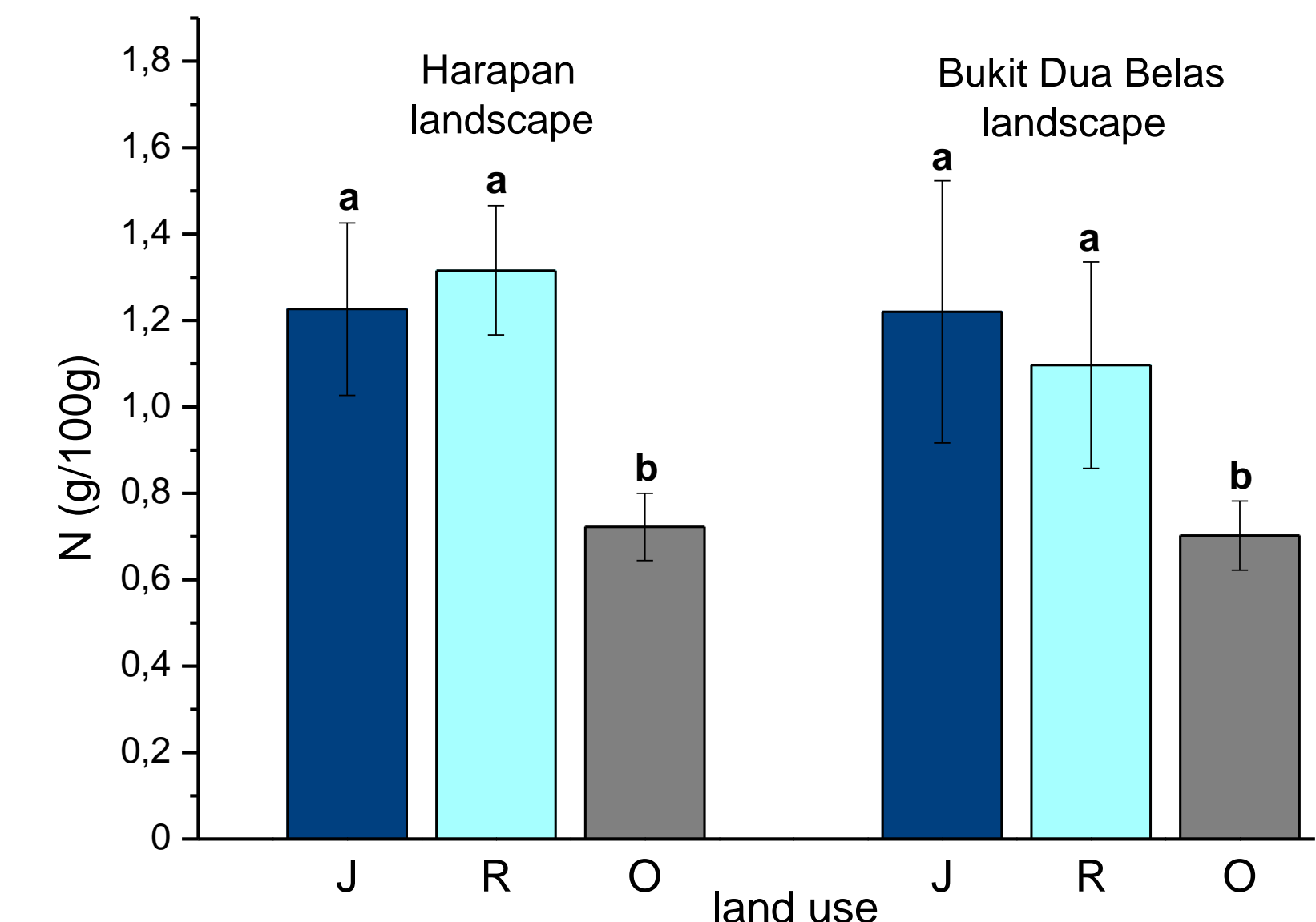
Molecular analyses (454 Sequencing) are running to determine the fungal diversity and to detect potential shifts in mycorrhizal and other fungal communities with increasing land use. In addition the colonization with arbuscular mycorrhizal fungi will be determined.

Preliminary Results

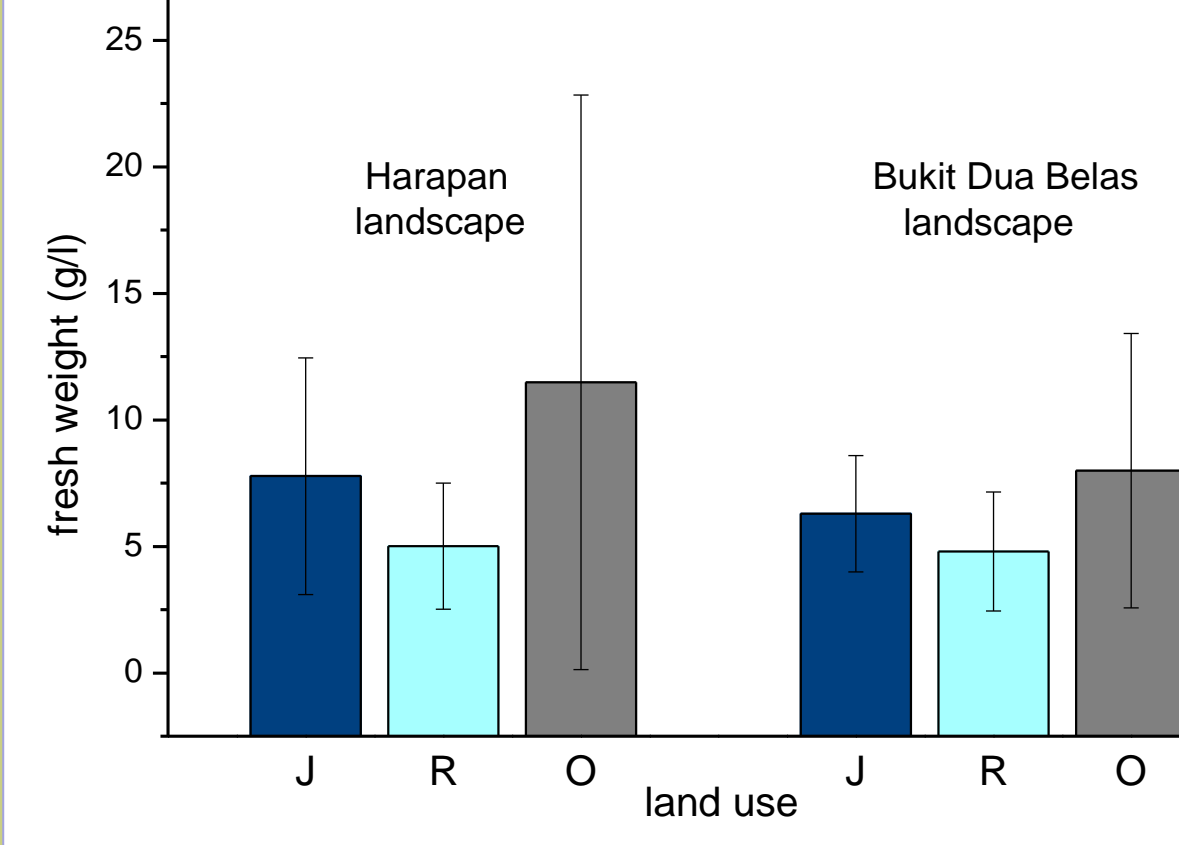
Ectomycorrhiza (EM) only found in Jungle-rubber and most dead root tips in Oil palms



Oil palms have less N concentrations in their roots



Fine root biomass



Number of arbuscular mycorrhizal spores

