

Microbiome Analysis of Alfalfa Rhizosphere Soils

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Question & Design

How is the alfalfa rhizosphere microbiome affected by the following:

- edaphic factors
- nutrient status
- alfalfa germplasm

Treatments

- Fertilization

+ P

+ K

- Germplasm

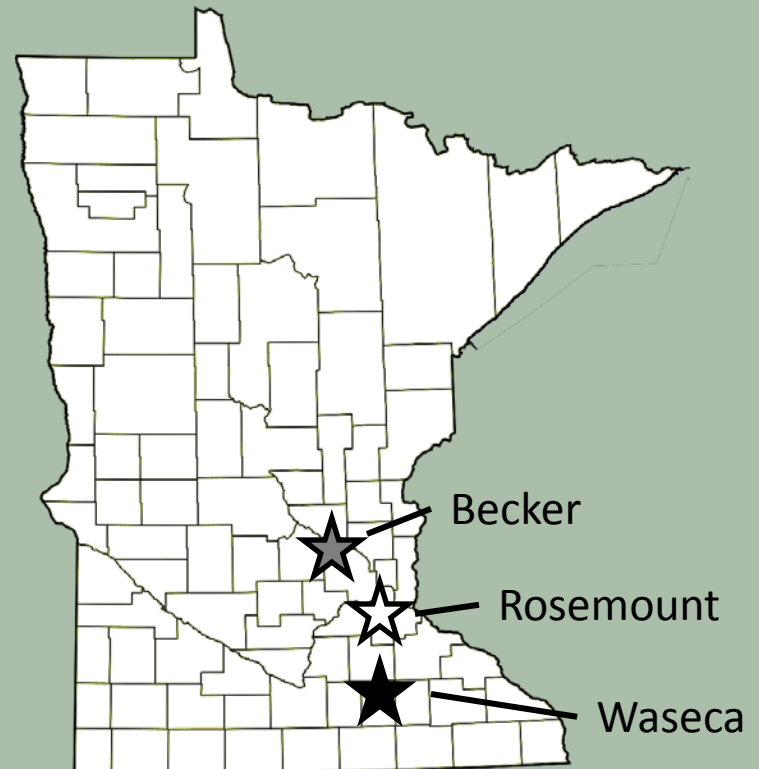
Tap Root

Branched Root

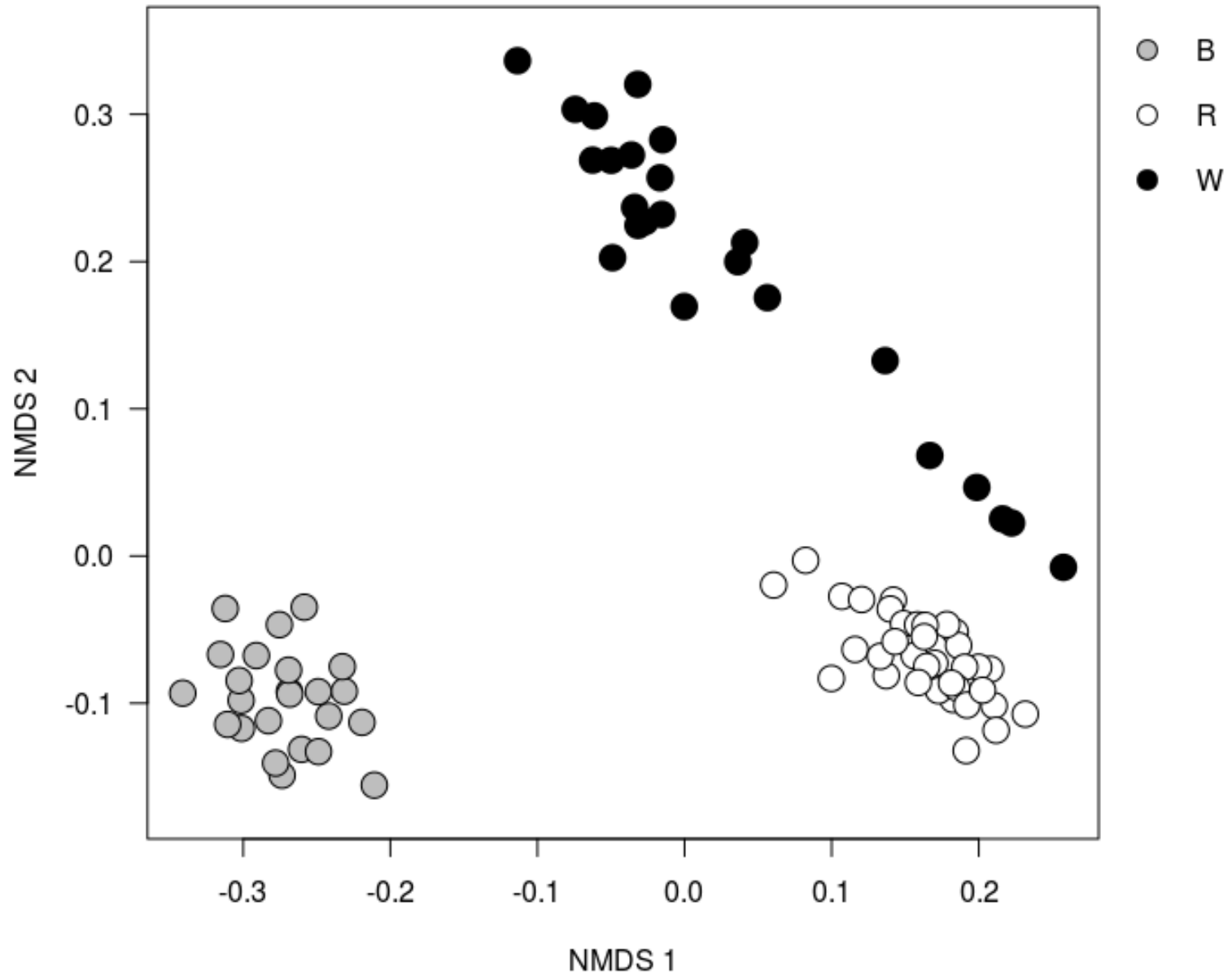
Analysis

- Illumina MiSeq
16S and ITS1 sequencing

Locations



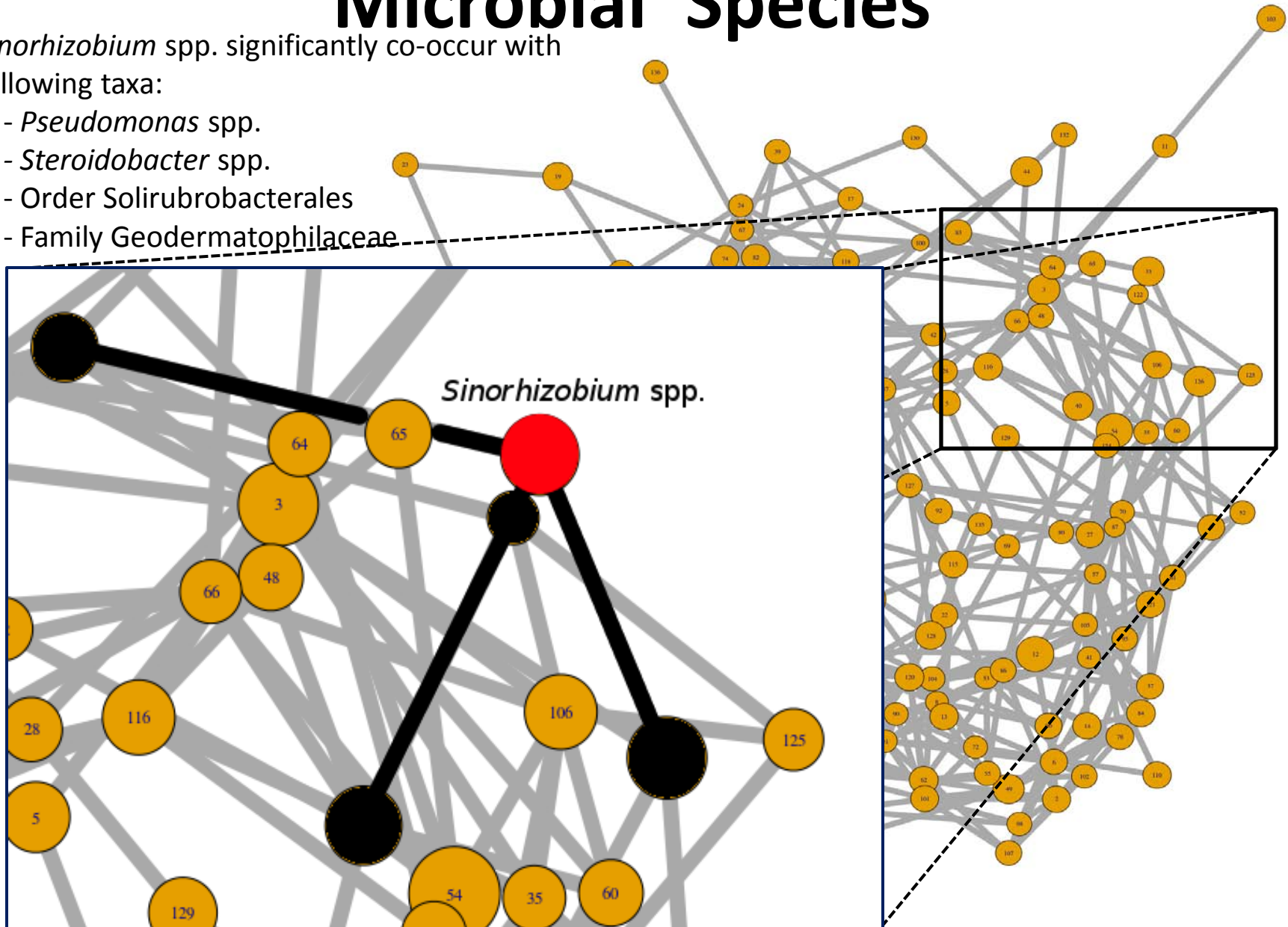
Bacterial Diversity Groups with Location



Correlated Abundance of Microbial 'Species'

Sinorhizobium spp. significantly co-occur with following taxa:

- *Pseudomonas* spp.
- *Steroidobacter* spp.
- Order Solirubrobacterales
- Family Geodermatophilaceae



Synthesis

- Soil environments structure microbial communities to a greater degree than fertilization or germplasm differences.
- Taxa with co-correlated abundance patterns hypothetically interact; aim for future explorations of their functional attributes.

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