Indices of alpha and beta diversity

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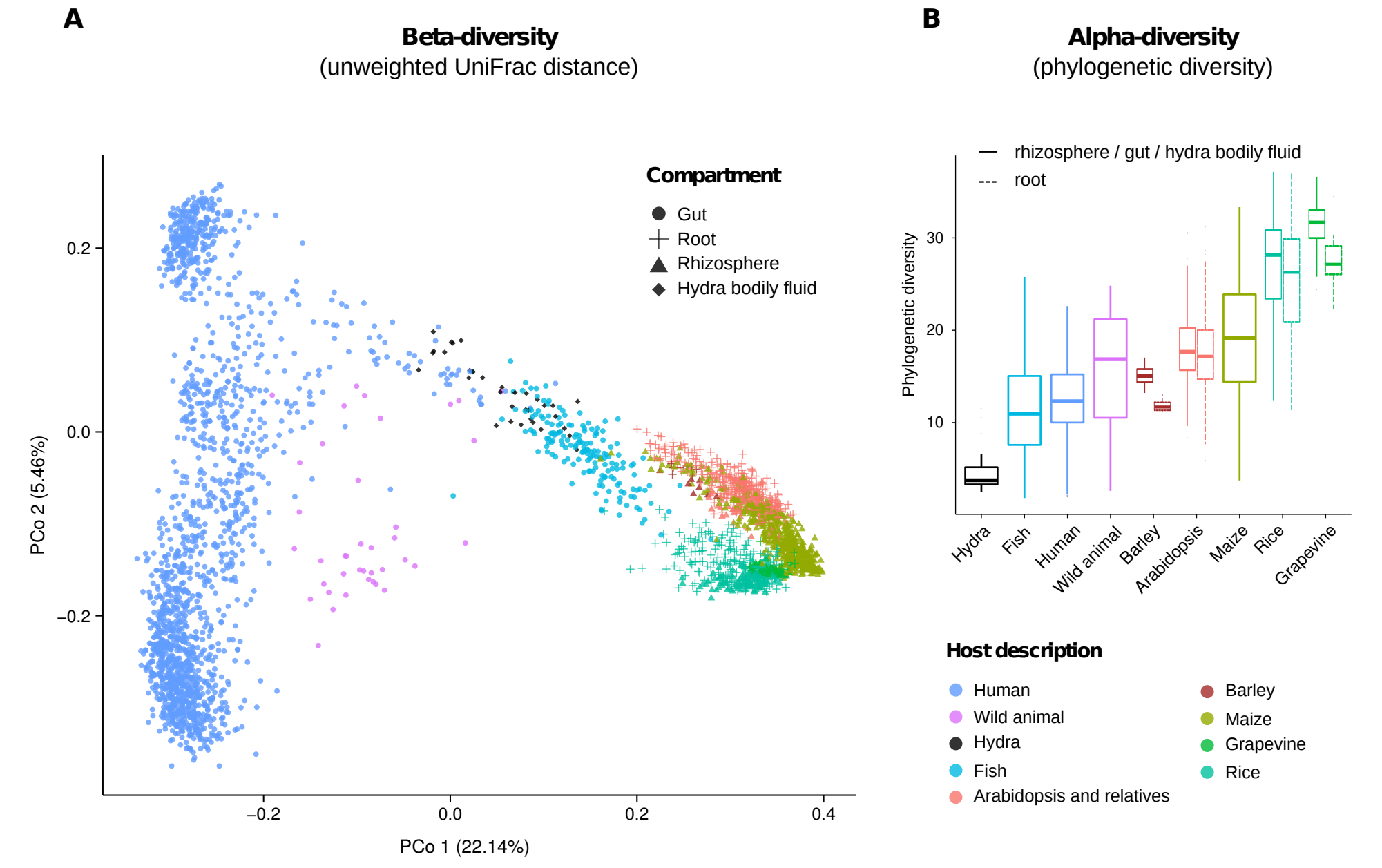
A
Beta-diversity
(unweighted UniFrac distance)
Compartment
Gut
Root
Rhizosphere
Hydra bodily fluid
PCo 2 (5.46%)
PCo 1 (22.14%)
0.2
0.0
−0.2
−0.2
0.0
0.2
0.4
B
Alpha-diversity
(phylogenetic diversity)
rhizosphere / gut / hydra bodily fluid
root
Phylogenetic diversity
10
20
30
Hydra
Fish
Human
Wild animal
Barley
Arabidopsis
Maize
Rice
Grapevine
Host description
Human
Wild animal
Hydra
Fish
Arabidopsis and relatives
Barley
Maize
Grapevine
Rice

Indices of alpha-diversity (within sample diversity)

Chao index (Chao, 1984) is based on the number of low abundance OTUs (rare biota) found in a sample.

The **Shannon** index is based on the concept of entropy.
It takes into account simultaneously how many species and how evenly distributed they are in a community.

Observed species consists on simply counting the number of detected OTUs in a sample.

Faith's Phylogenetic Diversity is related to the phylogenetic diversity of a community, assuming that communities of consisting of highly unrelated species are more complex.

Indices of beta-diversity (between samples diversity)

beta-diversity metrics provide a quantitative evaluation of how much samples differ from one another. They can be classified in multiple ways:

	quantitative (take into account relative abundances)	qualitative (considers only OTU presence / absence)
phylogenetic (considers OTU relatedness)	**weighted UniFrac**	**unweighted UniFrac**
non phylogenetic (assumes all species are qualy related)	**Bray-Curtis**	**Jaccard**

Indices of beta-diversity (between samples diversity) (cont.)