

01_biomass_BRI

Loïc Thurre

2024-09-06

Loading functions

0. Data importation

1. Biomass

1.1 ANOVA assumptions and data transformation

If normality is not respected for a unique combination of treatments, rank-transformation is applied. Results are displayed in the heatmap.

Heatmap of the distributions

1.2 ANOVA

We test for the effects of fertilisation, inoculation and their interaction on biomass

Model: $\text{total_dry_weight} \sim \text{soil_ID} + \text{fertilization} * \text{inoculation}$.

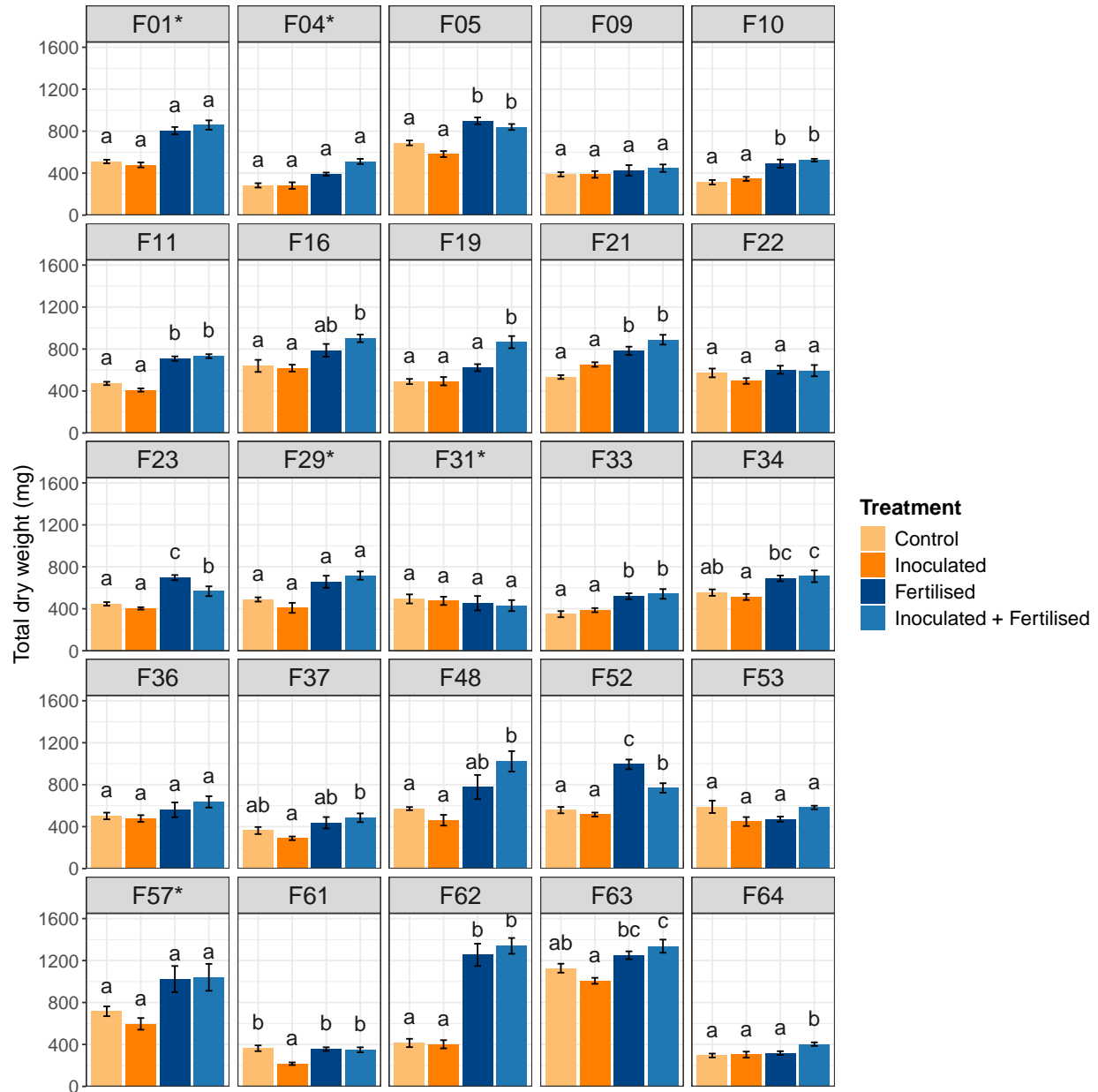
Table S2

Parameter	Df	Sum.Sq	Mean.Sq	F.value	Pr..F.
soil_ID	24	65811075.731	2742128.155	145.5709495	0.0000000
fertilization	1	5480336.813	5480336.813	290.9338252	0.0000000
inoculation	1	2154.645	2154.645	0.1143833	0.7353051
fertilization:inoculation	1	275271.038	275271.038	14.6132726	0.0001432
Residuals	731	13769888.073	18837.056	NA	NA

1.4 Posthoc tukey test for unique combination of treatments

Posthoc tukey test is applied between every pair of treatment in a given field. This data is displayed in figure S3.

1.5 Fig. S3



2. Biomass Response to Inoculation - BRI

2.1 Unfertilised

We compute the BRI (Biomass response to fungal inoculation) in unfertilised soils by following the equation in Köhl et al. 2016

```
## [1] "soil_IDF16"          "-3.75537711125225" "5.58392191405035"
## [4] "-0.67253395893716" "0.502190287835573" "-14.7810239994385"
## [7] "7.270269776934"
```

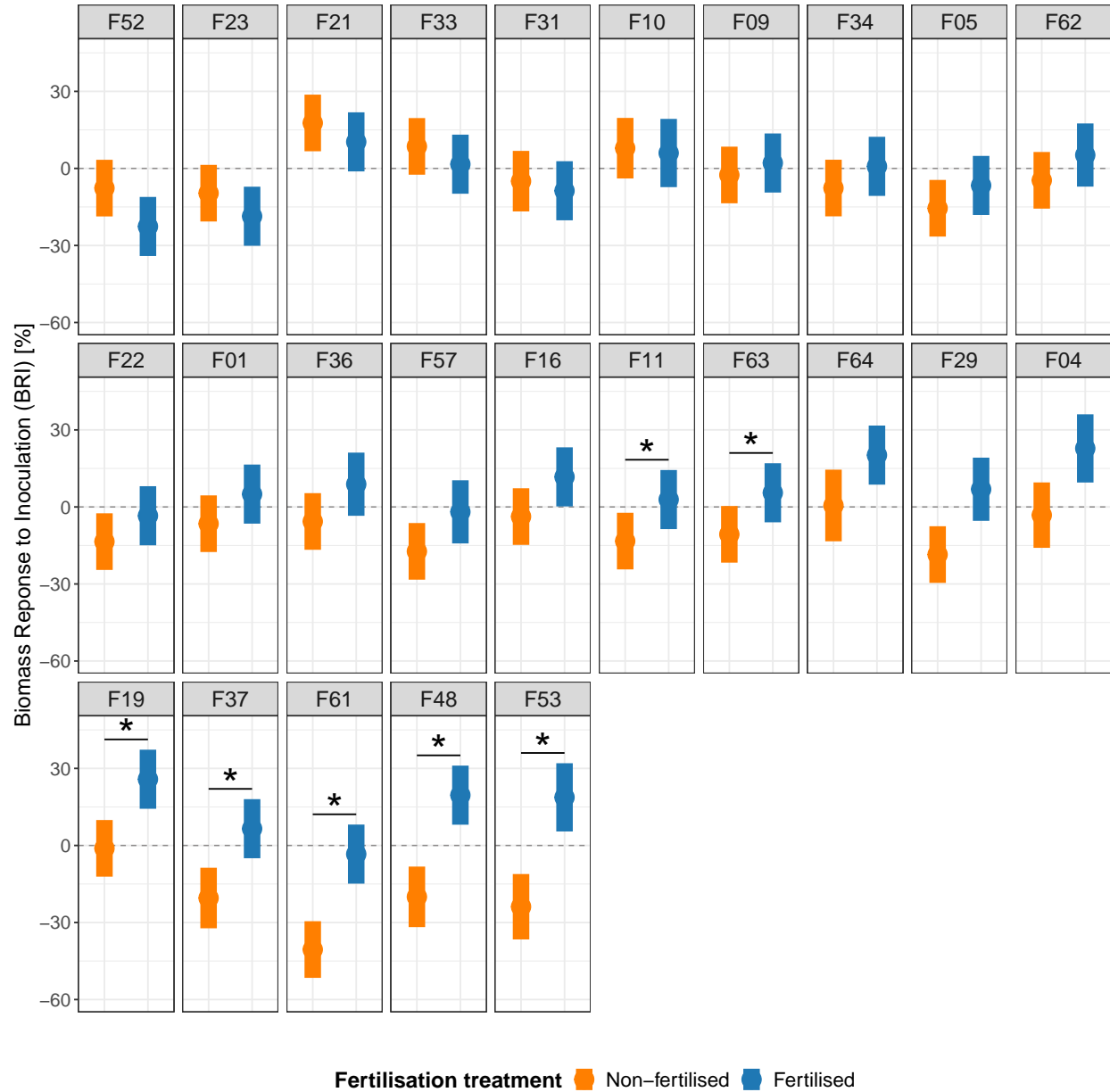
2.2 Fertilised

We compute the BRI (Biomass response to fungal inoculation) in unfertilised soils by following the equation in Köhl et al. 2016

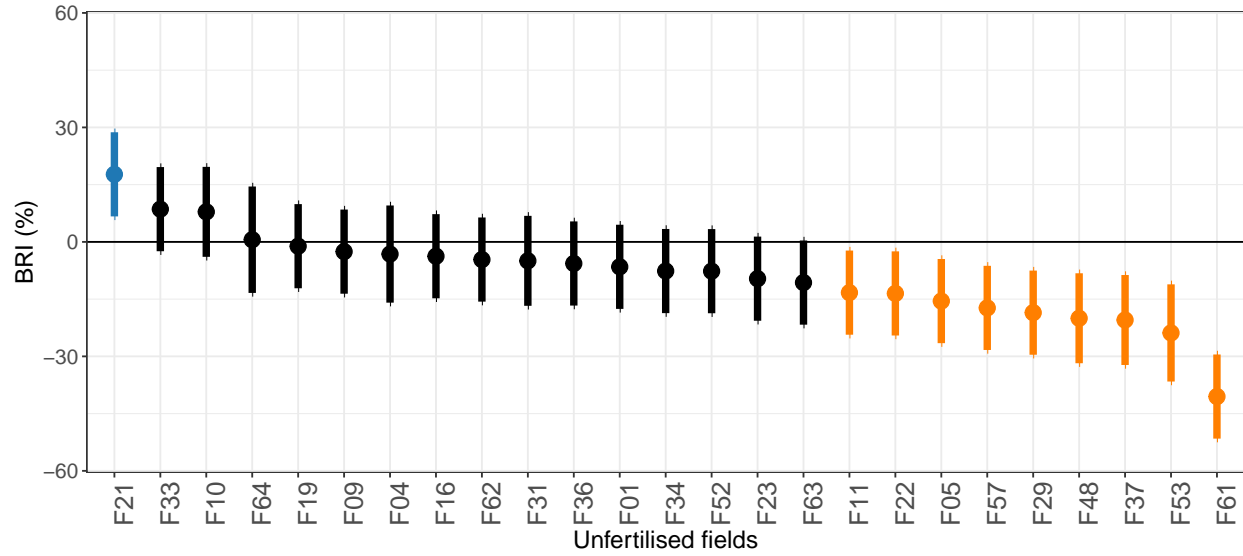
2.3 Pairwise comparison of BRI_fertilised ~ BRI_unfertilised.

For each field, a t-test is applied between fertilised and unfertilised values, p-values are corrected with Bonferroni-Hochberg. This data is displayed in figure 2A.

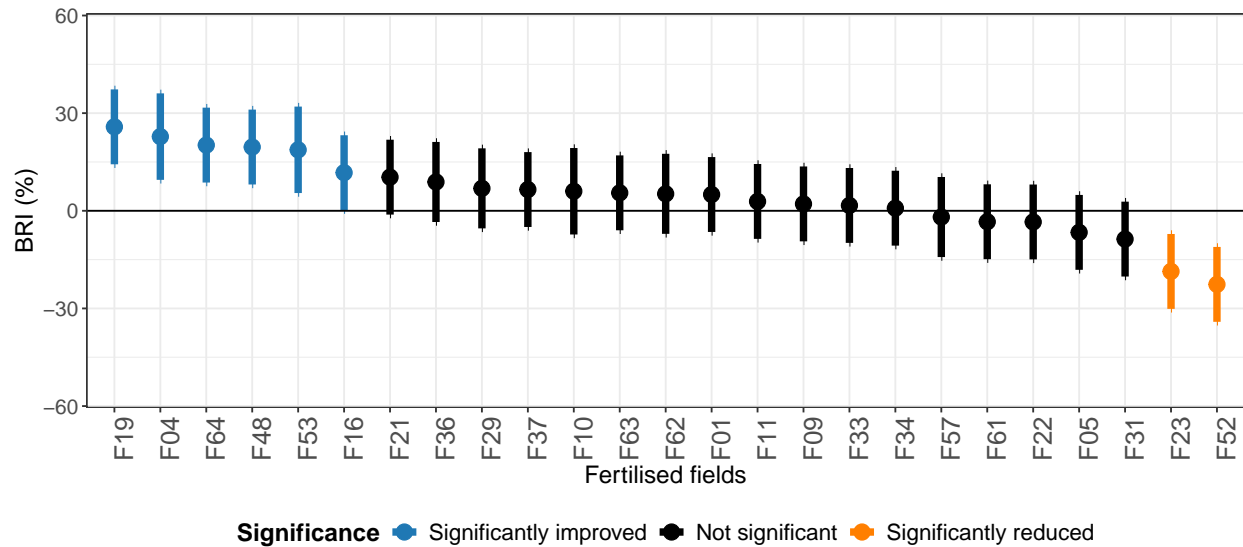
2.4 Figure 2A



2.5 Fig. S4A - Unfertilised



2.6 Fig. S4B - Fertilised



3. Soil fertility

Next, we investigated whether BRI is dependent on soil fertility.

We defined soil fertility based on the growth performance of control plants (mean dry weight of non-inoculated and non-fertilised plants) and examined its relationship with BRI.

3.1 Fig. 2B

The second finding is that within the non-fertilized samples a negative trend between native soil fertility and BRI was found. This suggested that BRI is larger in soils with a low fertility and smaller in more fertile soils

