



Data analysis DMF1C1 - 1env

Year 2023

202307DMF1C_tani

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Palmira, October 2023



@BiovIntCIAT_eng
@BiovIntCIAT_esp

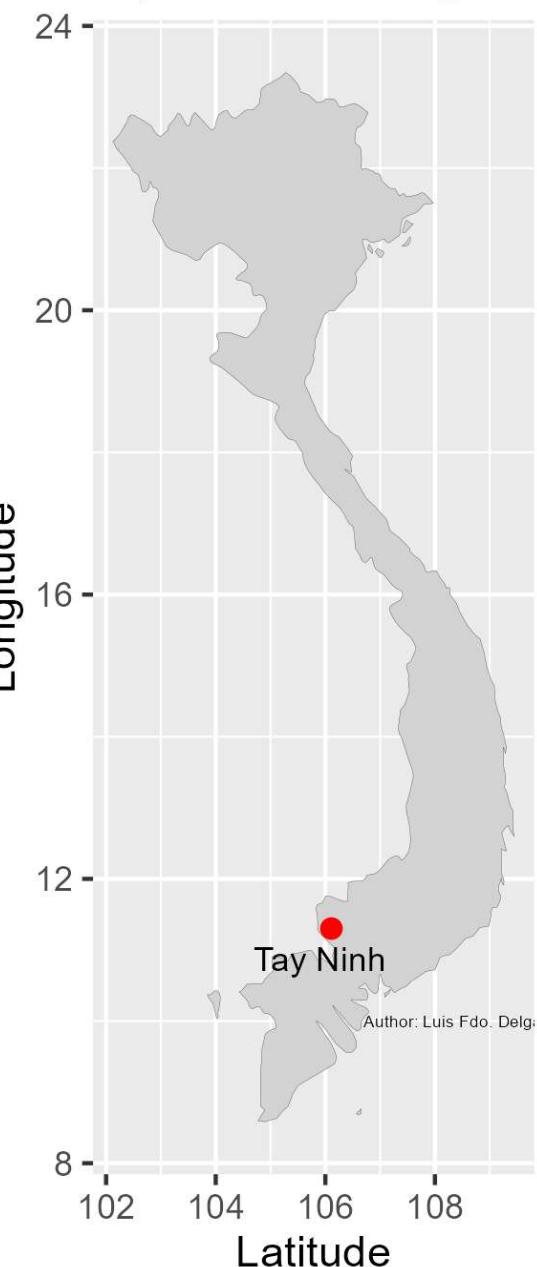
#Alliance4Science

Locations - Introduction

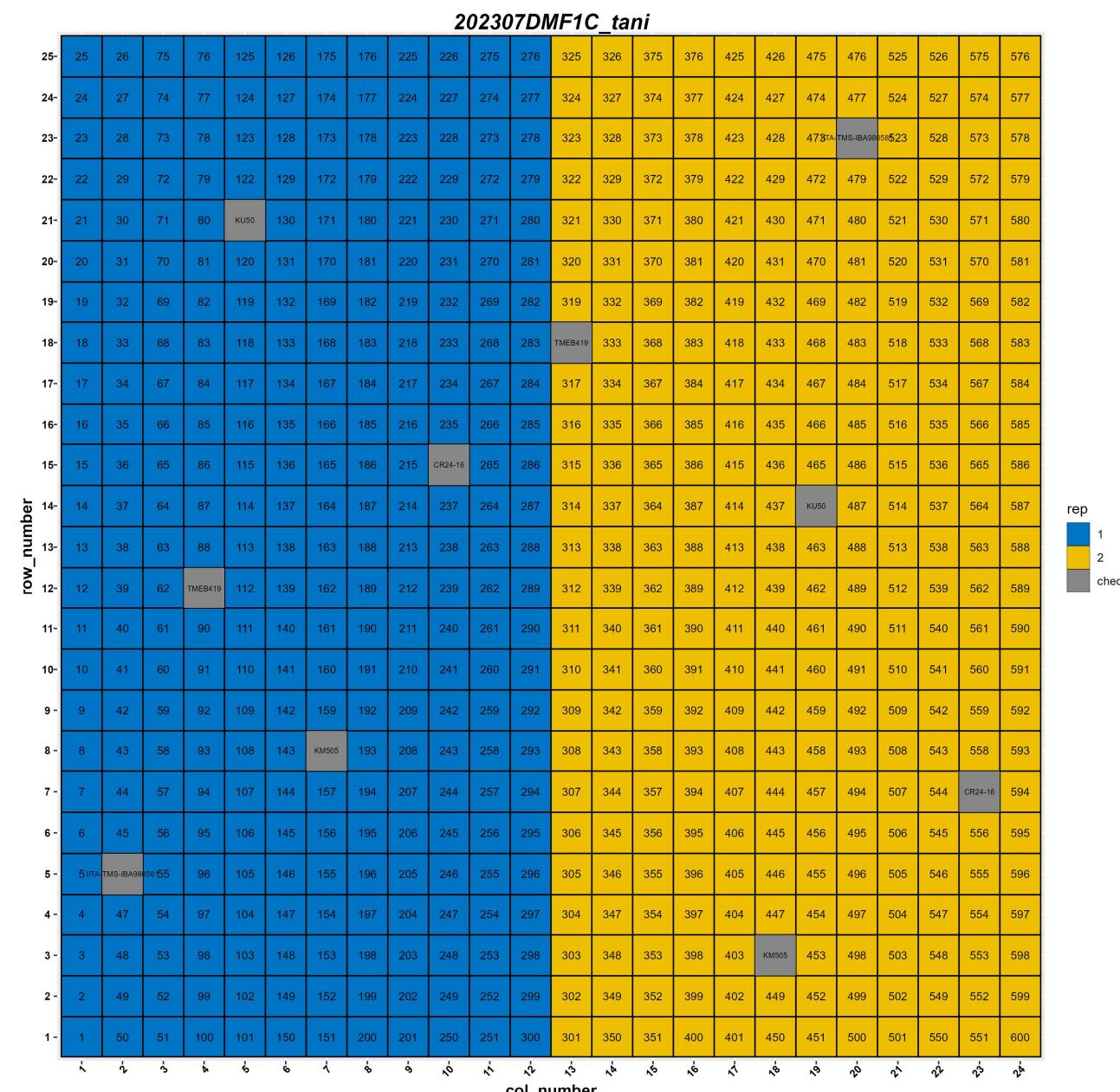
- Tay Ninh, Vietnam
- The F1C1 of the pipeline - CMD-resistance cassava for starch and animal feed
- TPE: subhumid
- locations: Tay Ninh, Vietnam
- Project: ACIAR, USAID
- Purpose:
- 1) Improve breeding populations;
- 2) Deliver variety candidates to NARES in Asia and Africa;
- 3) Perform "training-by-doing"

Locations in Vietnam

Tay Ninh and Dong Nai



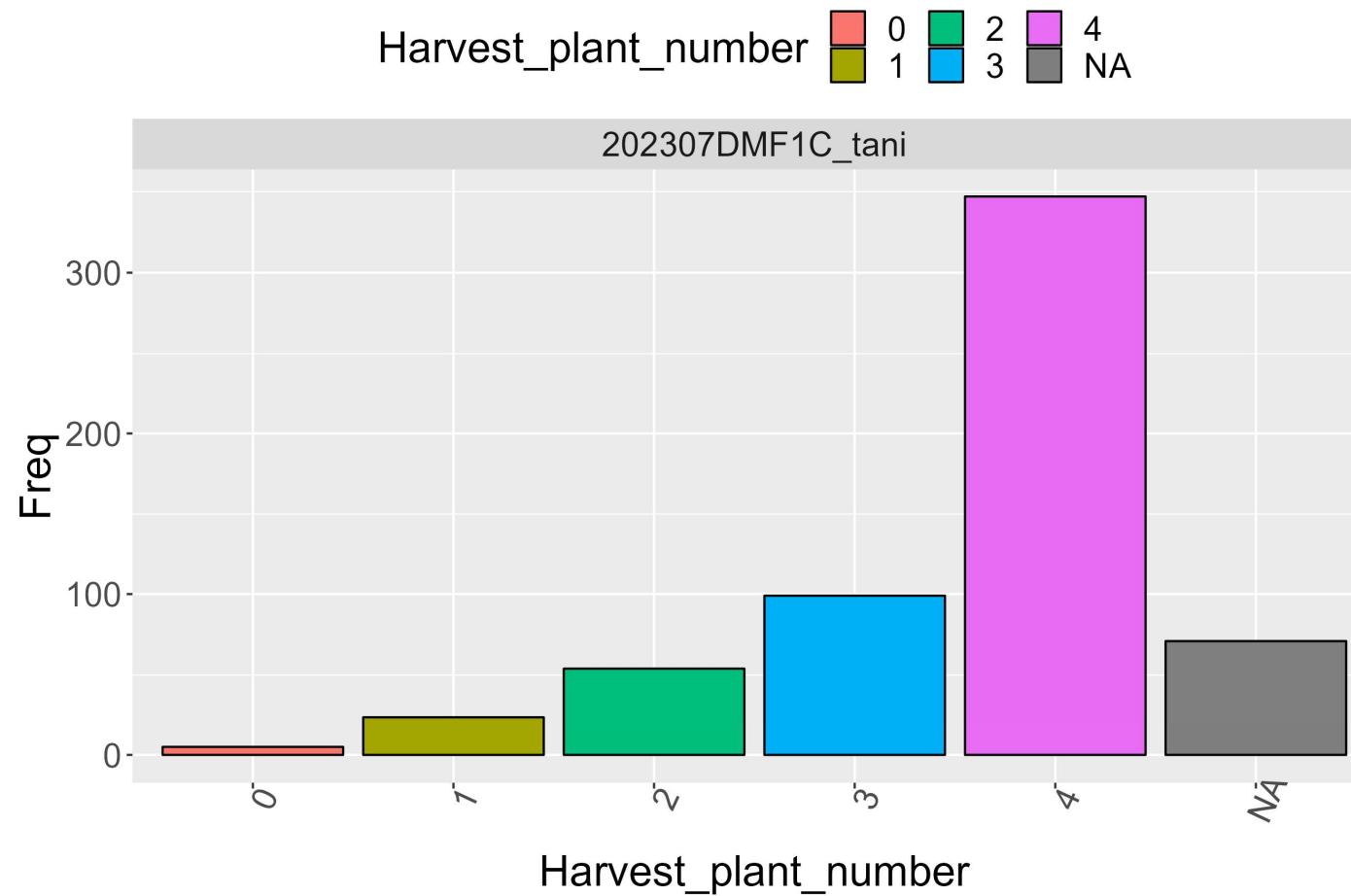
Year 2023: Trial Design – Resolvable Row col



rep
 1
 2
 check

Resolvable row-col with randomized checks

use_trial_name	use_plant_date	use_harvest_date	harvesting_time	use_location	n_gen
202307DMF1C_tani	2023-April-04	2023-December-08	8month 4day	Tay Ninh	300



Check genotypes

KU50_is_KM94

CR24-16

IITA-TMS-IBA980581

KM505

TMEB419



3 - Unloading cassava. Women processors, Korogho Côte d'Ivoire. Patricio Mendez del Villar / 3 - Déchargement de manioc Femmes transformatrices, Korogho Cote d'Ivoire. Patricio Mendez del Villar

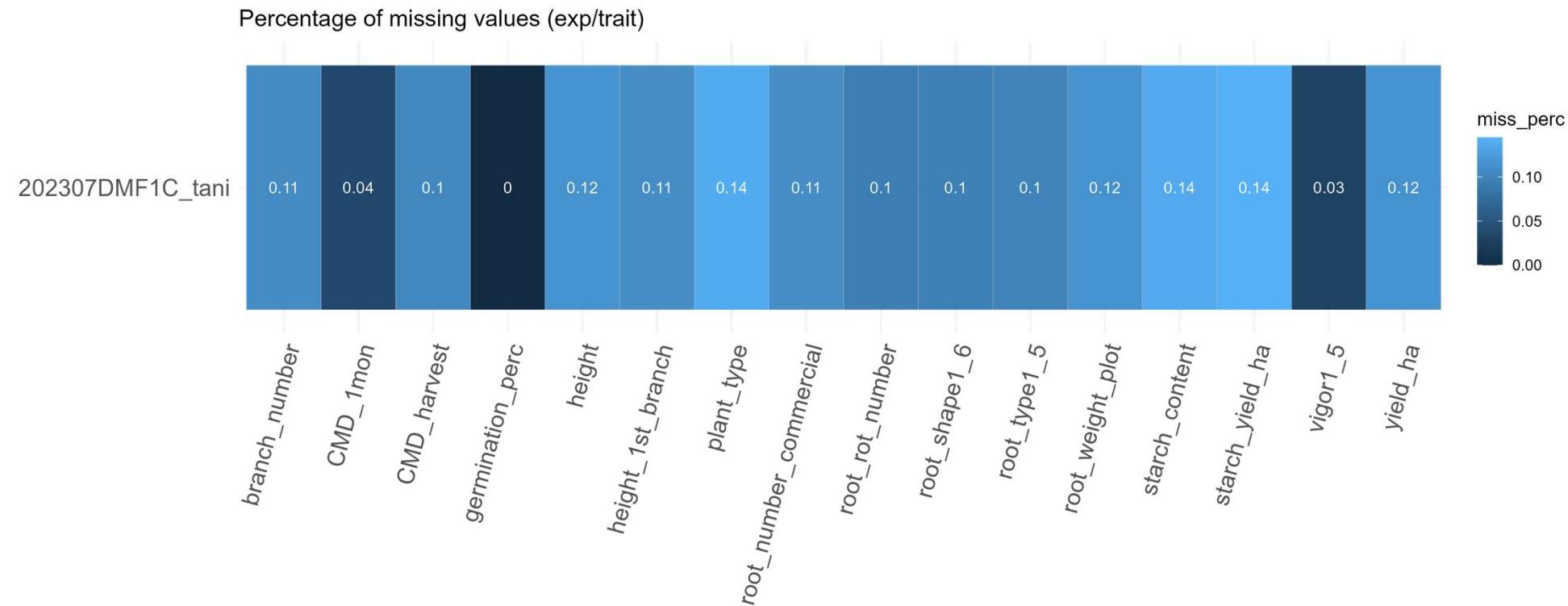


Exploratory data analysis

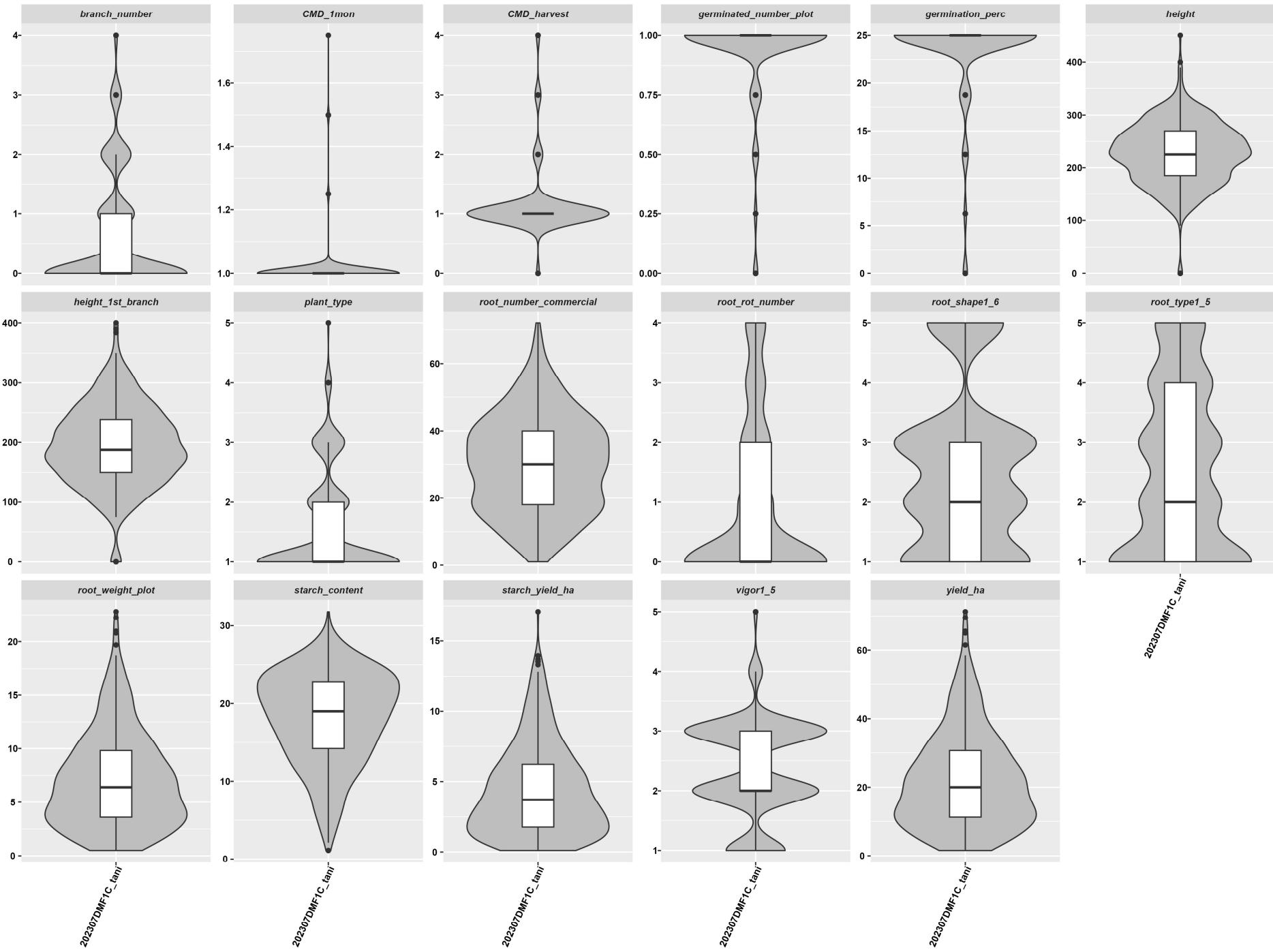
Traits evaluated – missing values



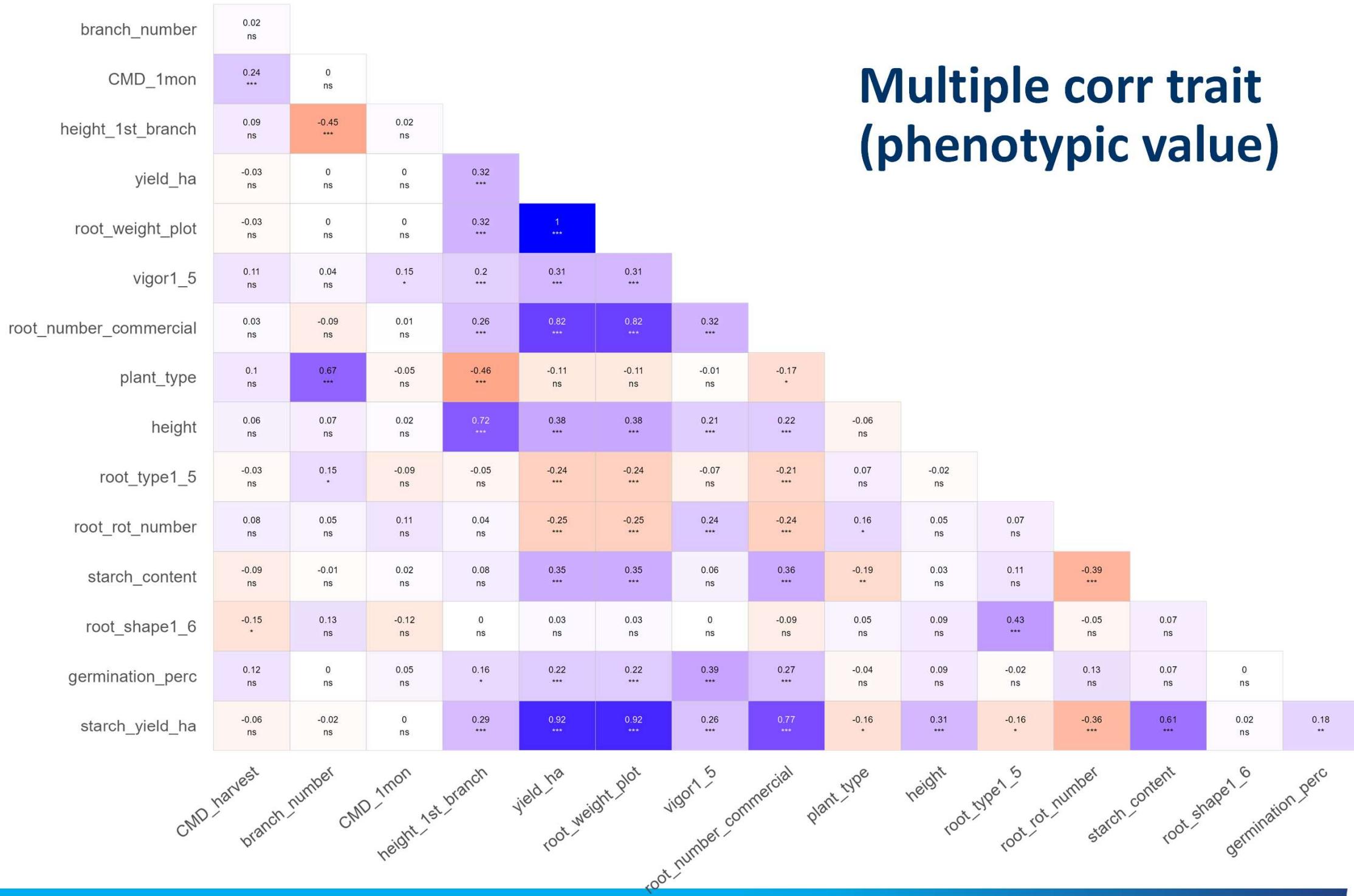
Agronomic traits
CMD_harvest
branch_number
CMD_1mon
height_1st_branch
yield_ha
root_weight_plot
vigor1_5
root_number_commercial
plant_type
height
root_type1_5
root_rot_number
starch_content
root_shape1_6
germination_perc
starch_yield_ha
CMD_harvest
branch_number
CMD_1mon
height_1st_branch

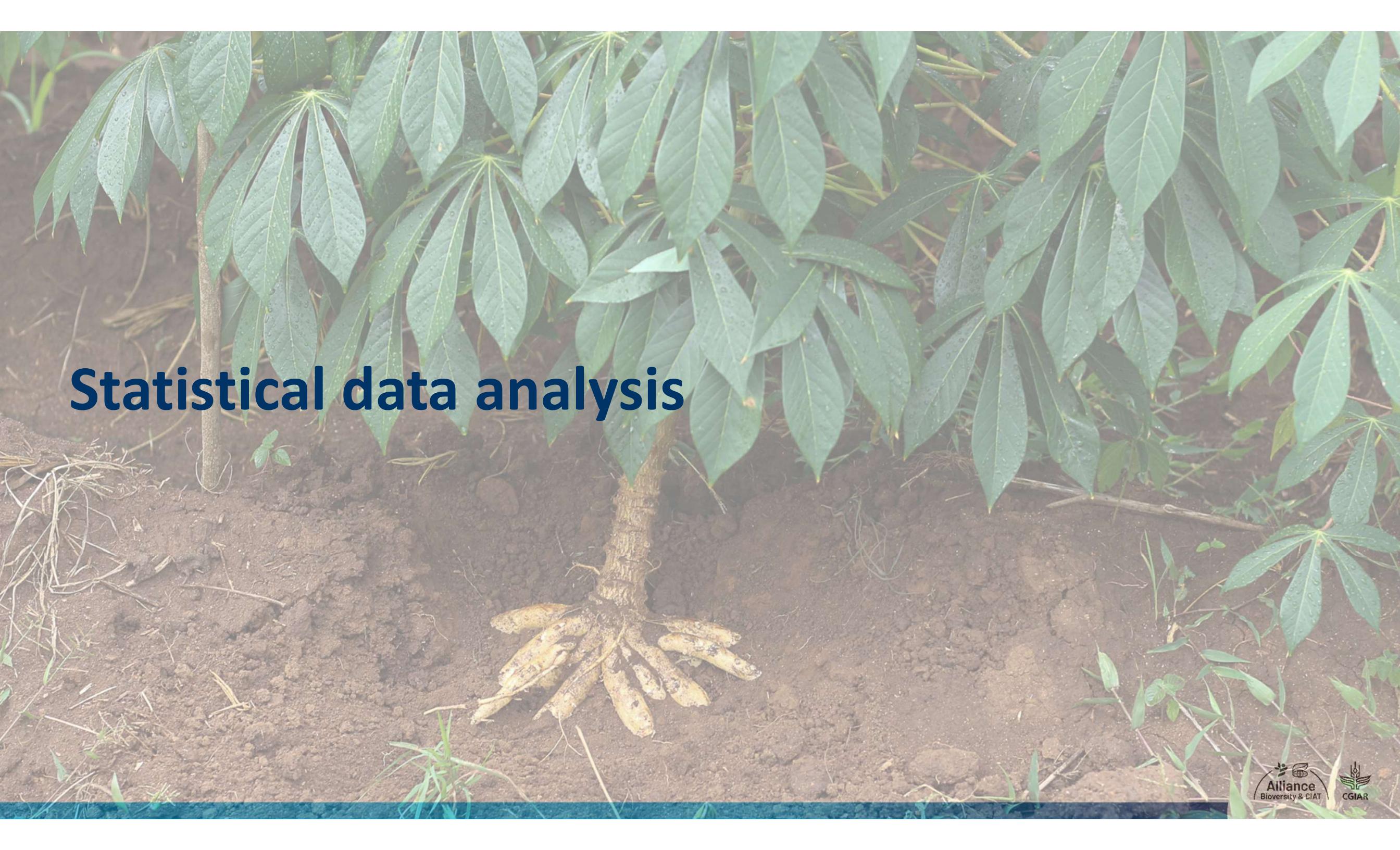


Trait variation across trials (phenotypic value)



Multiple corr trait (phenotypic value)



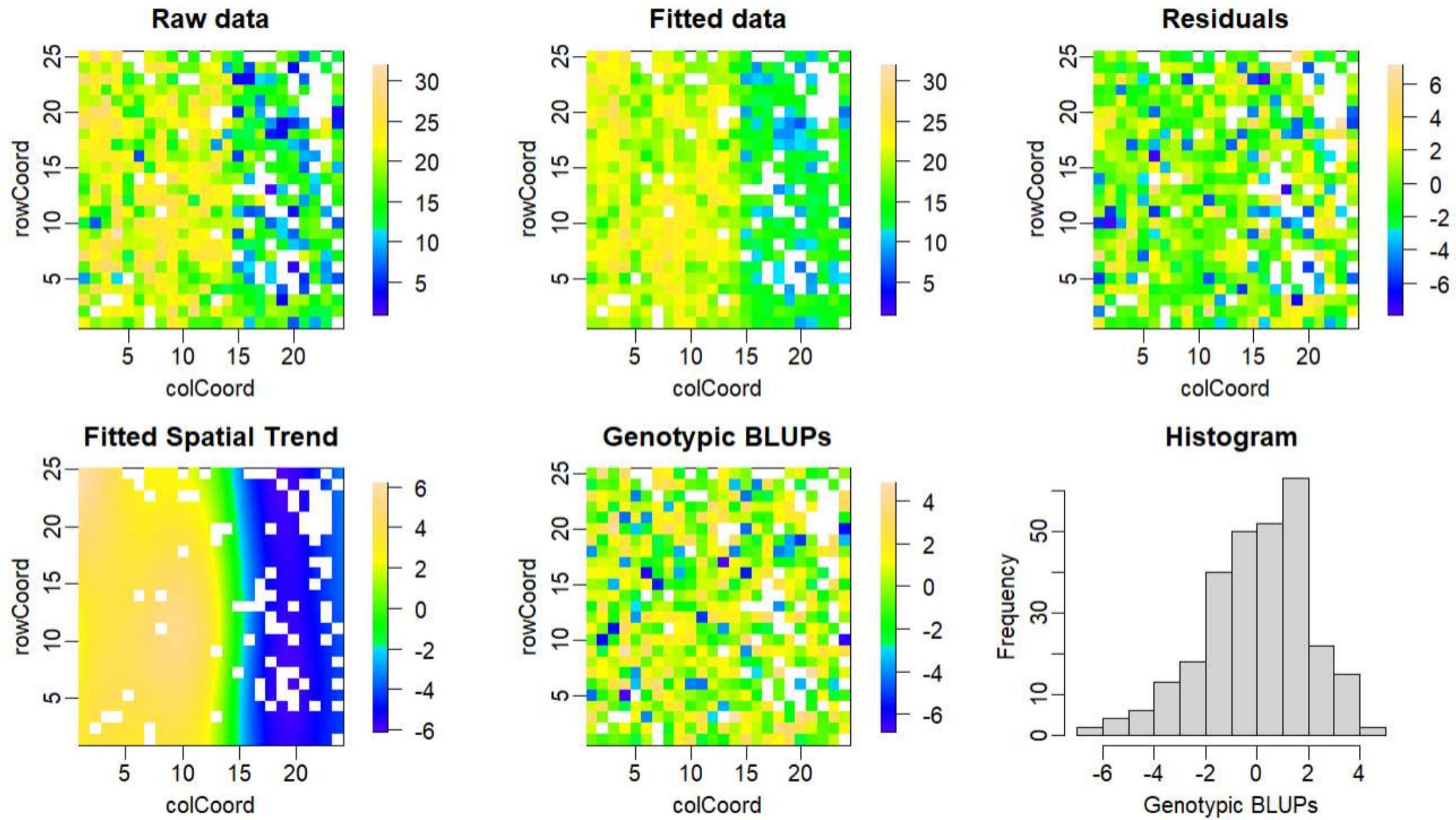
A photograph of a cassava plant growing in soil. The plant has several green leaves with prominent veins. A thick, brown, fibrous root system is visible at the base of the plant, partially buried in the dark brown soil. Some yellowish, dried plant material lies on the ground near the roots.

Statistical data analysis

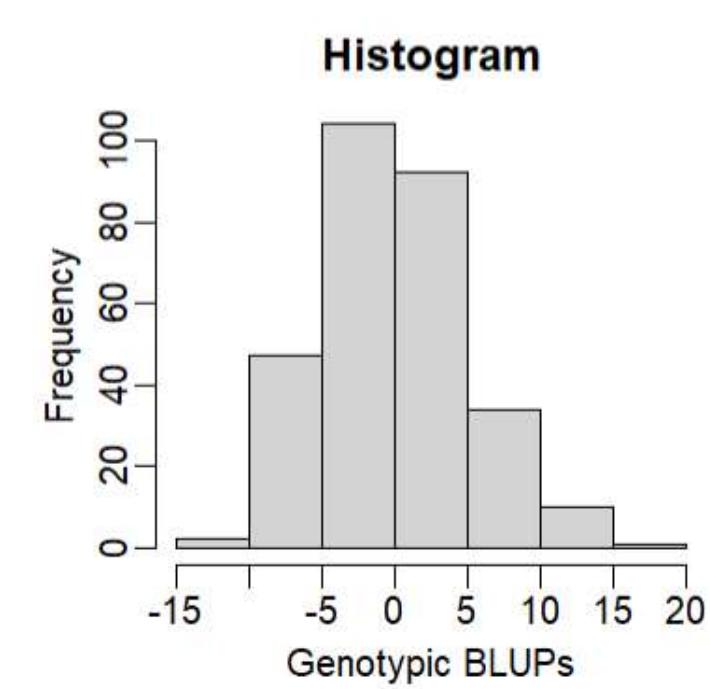
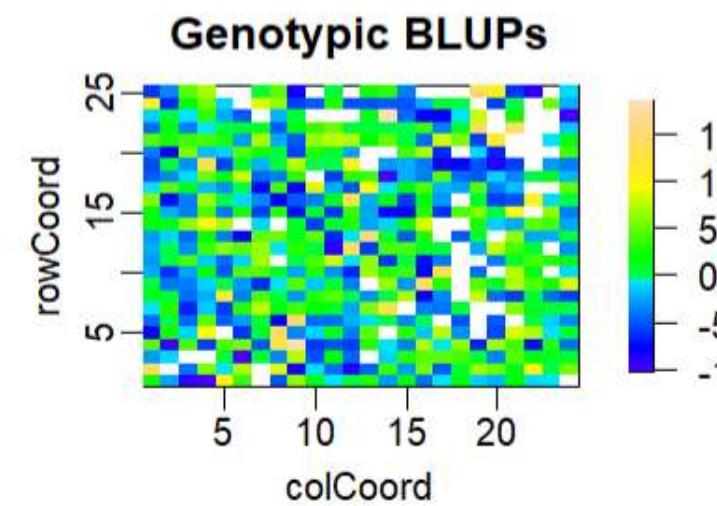
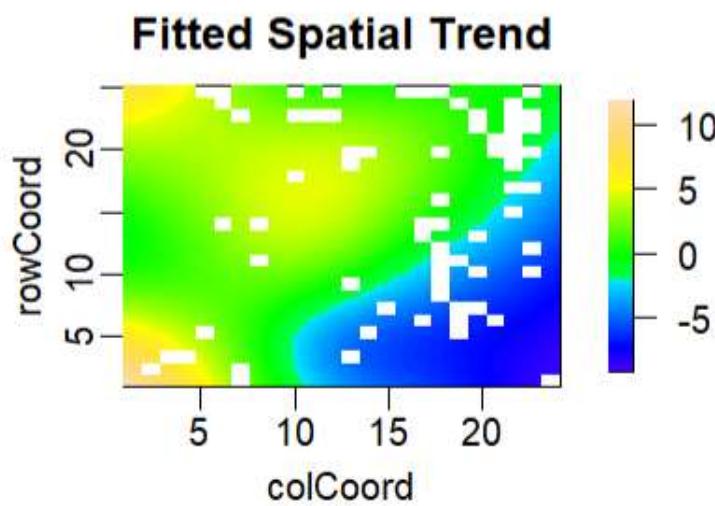
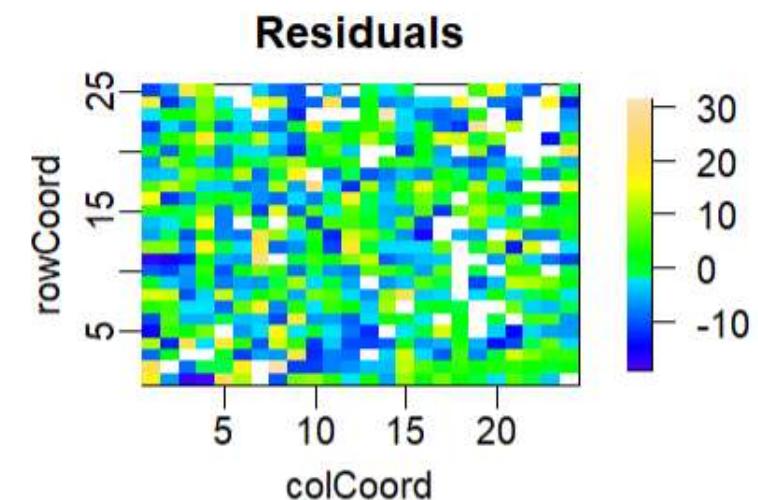
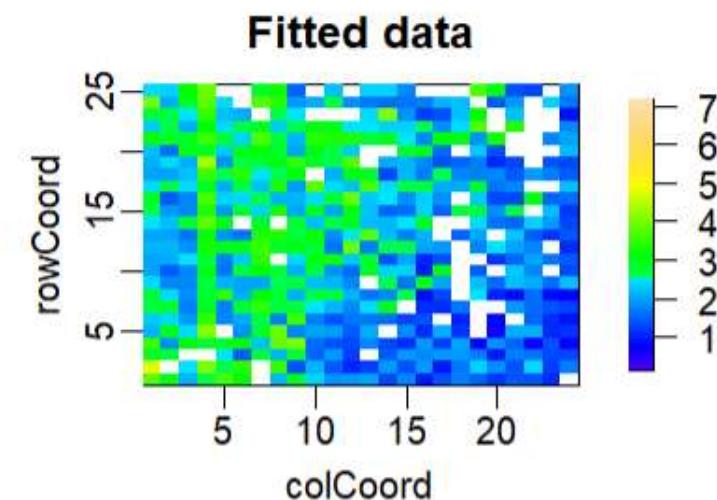
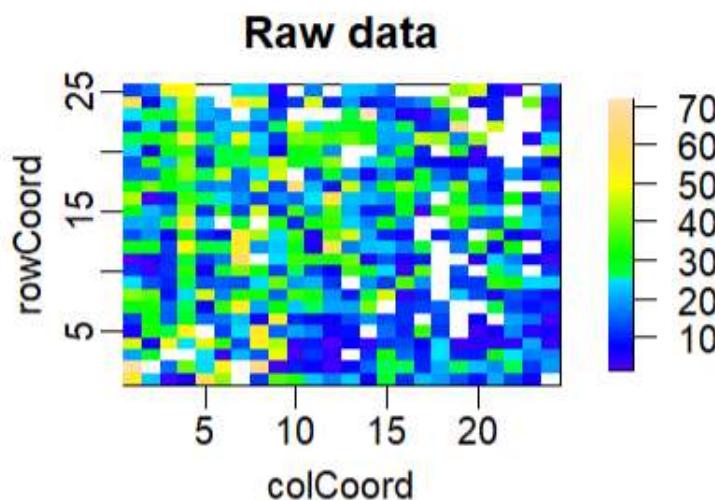
Single heritability

trial	branch_number	CMD_1mon	CMD_harvest	germination_perc	height_branch	height_1st_branch	plant_type	root_number_commercial	root_number_e1_6	root_shape_e1_6	root_type_e1_5	root_weight_t_plot	starch_content	starch_yield_d_ha	vigor_1_5	yield_ha
202307DMF 1C_tani	0.79	0.14	0.77	0.69	0.76	0.76	0.69	0.37	0.03	0.31	0.49	0.47	0.55	0.49	0.62	0.47

Trait: starch_content - Trial: 202307DMF1C_tani

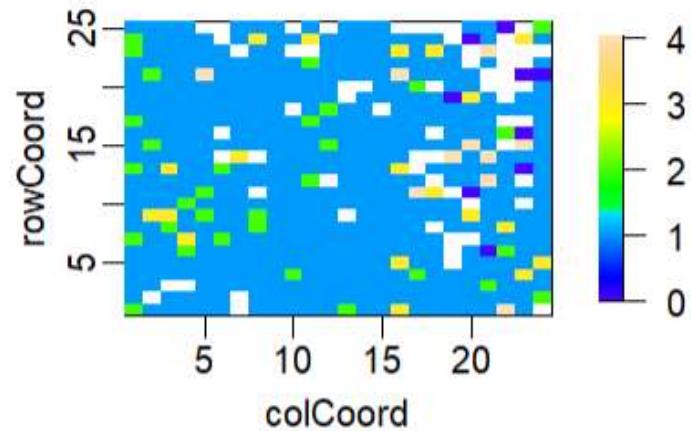


Trait: yield_ha - Trial: 202307DMF1C_tani

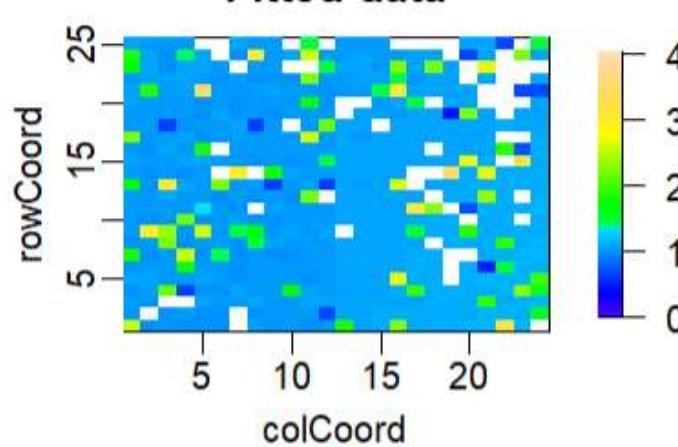


Trait: CMD_harvest - Trial: 202307DMF1C_tani

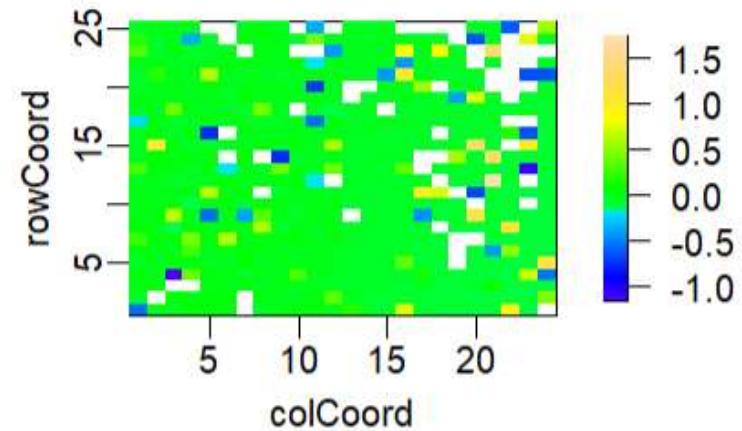
Raw data



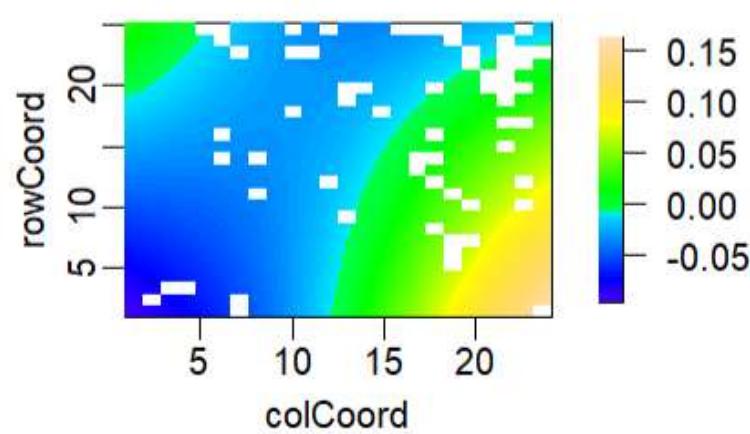
Fitted data



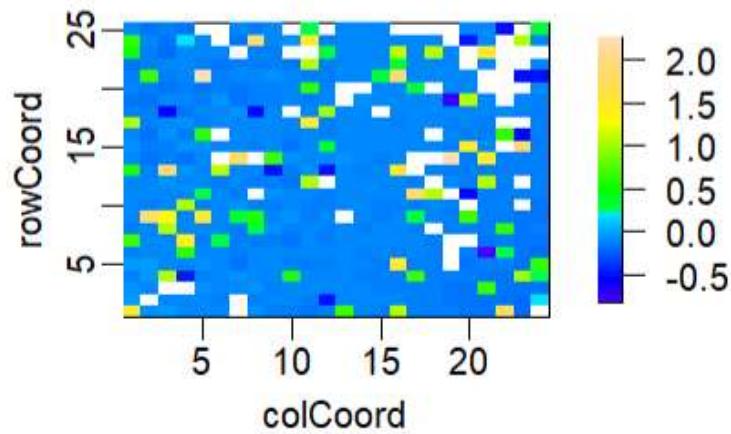
Residuals



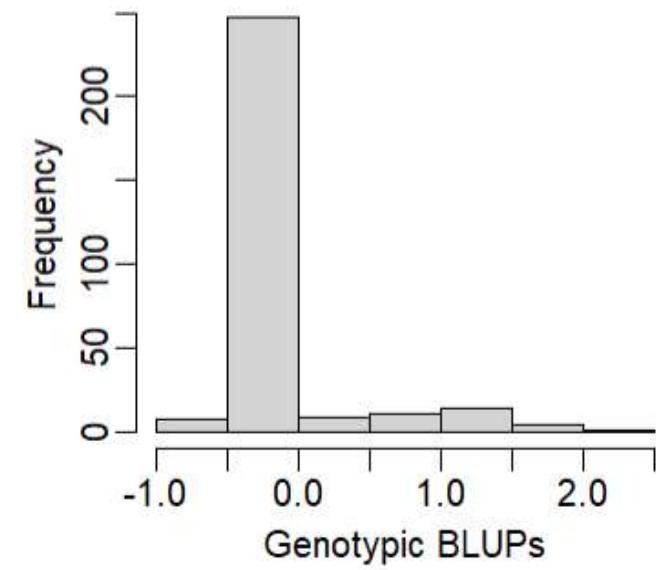
Fitted Spatial Trend



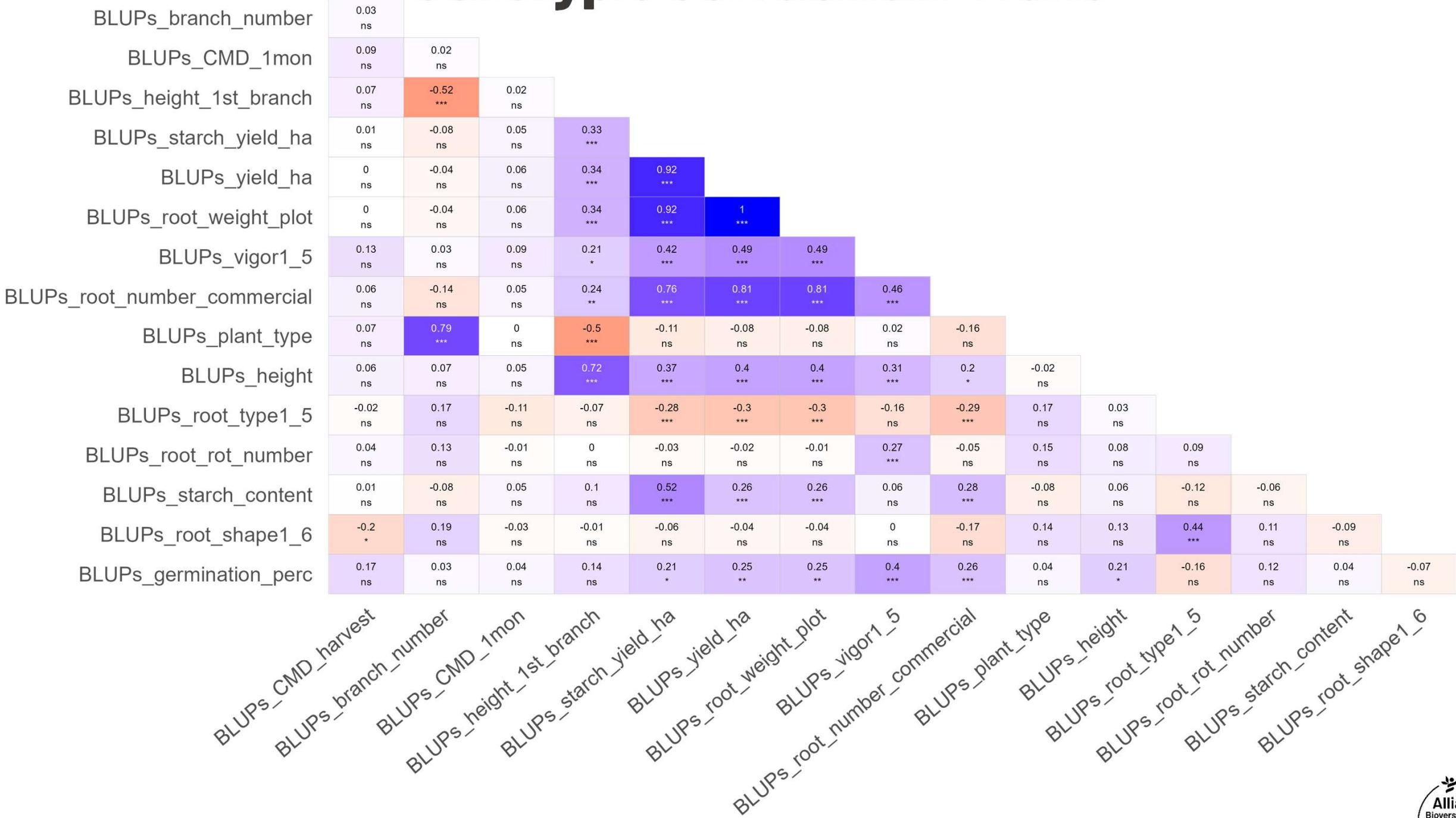
Genotypic BLUPs



Histogram



Genotypic Correlation: Traits

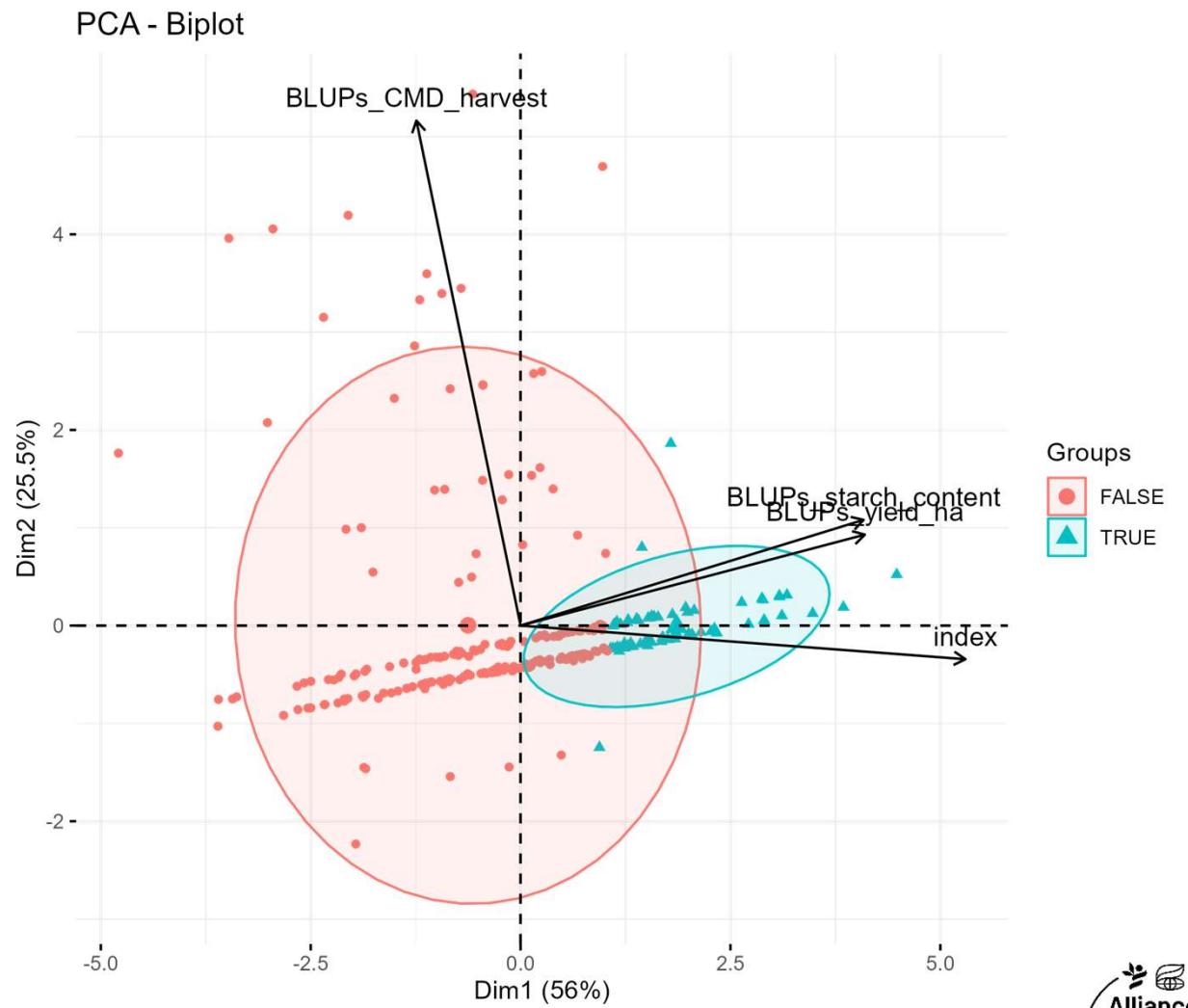


Index Selection

- 1) **BLUPs_starch_content, BLUPs_yield_ha, BLUPs_CMD_harvest** were used to calculate index selection.

- 2) Scores given were:
 - **BLUPs_starch_content = 10**
 - **BLUPs_yield_ha = 10**
 - **BLUPs_CMD_harvest = -5**

- 3) Percentage to be selected: **25%**



GitHub repo

2023DMF1C1env Public

Watch 1

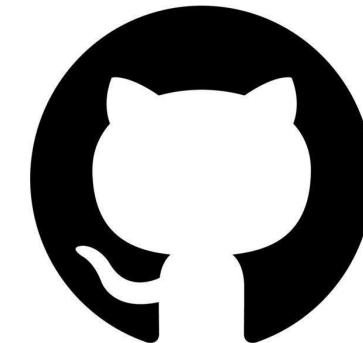
main 1 Branch 0 Tags Go to file Add file Code

Delgado Munoz and Delgado Munoz Merge branch 'main' of https://github.com/Cassava20... 13440b0 · 11 hours ago 3 Commits

data	first commit and data analysis done	11 hours ago
images	first commit and data analysis done	11 hours ago
output	first commit and data analysis done	11 hours ago
.gitignore	first commit and data analysis done	11 hours ago
2023DMF1C1env.Rproj	first commit and data analysis done	11 hours ago
README.md	Initial commit	11 hours ago
statistical_analysis.R	first commit and data analysis done	11 hours ago
tidying_data_up.R	first commit and data analysis done	11 hours ago

README

2023DMF1C1env



GitHub

<https://github.com/Cassava2050/2023DMF1C1env.git>



Thank you!