

# Comparing Domestication

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July 4, 2018

## Information

- Significance testing for these values were done with one-way-ANOVA
  - Bayesian estimations were used to fit the data to a normal distribution
    - \* From 40,000 estimated data points, sampling was done on every 1000th point
    - \* These points were used for the ANOVA parameters.
- Quantifying the differences were done with the Bayesian T-Test on estimated data.

## Initial Thoughts

- Einkorn seems most interesting with significant changes across the board, with the exception of length (this has been previously reported?), length is also not significantly different in Emmer either.
- Einkorn and Emmer both see significant changes in the length,depth,width ratio showing that this is a consistently significant change/indicator.
- Einkorn and Emmer depth is significant too - I think John/Candida mentioned this being interesting as previous studies haven't been able to examine this trait fully?
- Oddly, the surface area in Emmer isn't highly significant ( $<0.05, >0.01$ ), yet the ratio trait (length,width,depth) is. Indicating it's perhaps a better measurement to consider when looking at 3D traits.
  - Perhaps, like in previous studies, an interaction trait of lengthXwidth could be used for the marvin data, this might make a good proxy for comparing?
- Numbers for the Emmer, spike-wise, are too low. With 3 data points for the wild, it's not sufficient to grasp anything meaningful
  - The grain averages, I think are still useful enough
- I don't know how best to interpret / relate the barley and it's meaning with wheat?

## Summary Tables

### *T. boeoticum* Vs. *T. monococcum* (Einkorn)

#### Grains

	T. monococcum+T. beoticum
length	0.7045
width	< 0.001
depth	< 0.001
volume	< 0.001
surface_area	< 0.001
length_depth_width	< 0.001

#### Spike Averages

	T. monococcum+T. beoticum
mean_length	0.1848
mean_width	< 0.001
mean_depth	< 0.001
mean_volume	< 0.001
mean_surface_area	< 0.001
mean_length_depth_width	< 0.001

***T. dicoccum* Vs. *T. dicoccoides* (Emmer)****Grains**

	T. dicoccum+T. dicoccoides
length	0.1106
width	0.0141
depth	0.0035
volume	< 0.001
surface_area	0.0401
length_depth_width	< 0.001

**Spike Averages**

	T. dicoccum+T. dicoccoides
mean_length	0.4605
mean_width	0.3065
mean_depth	< 0.001
mean_volume	< 0.001
mean_surface_area	0.192
mean_length_depth_width	< 0.001

***H. spontaneum* Vs. *H. vulgare* (Barley)****Grains**

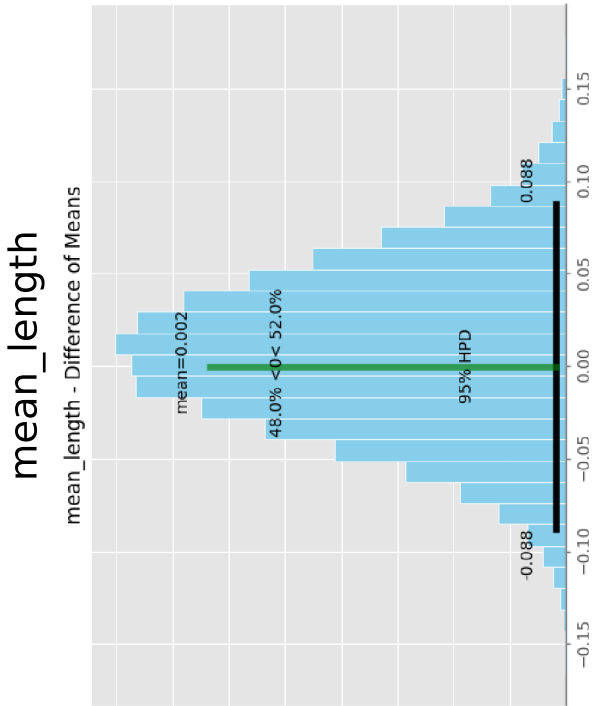
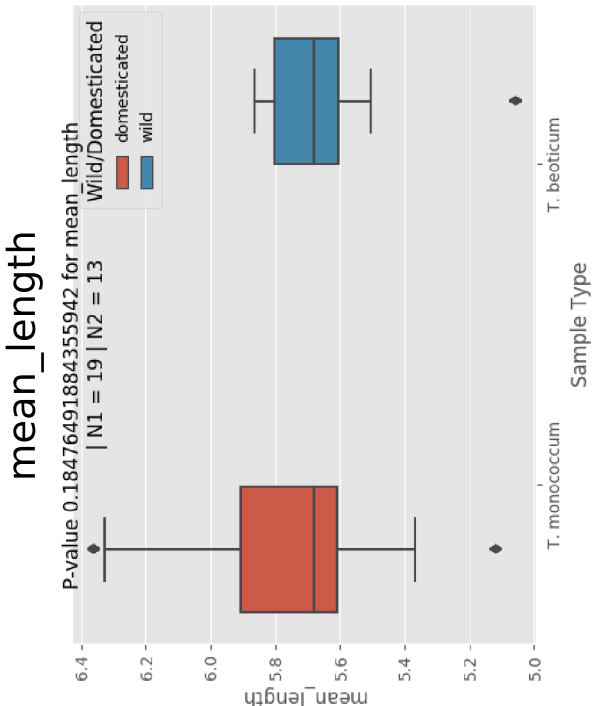
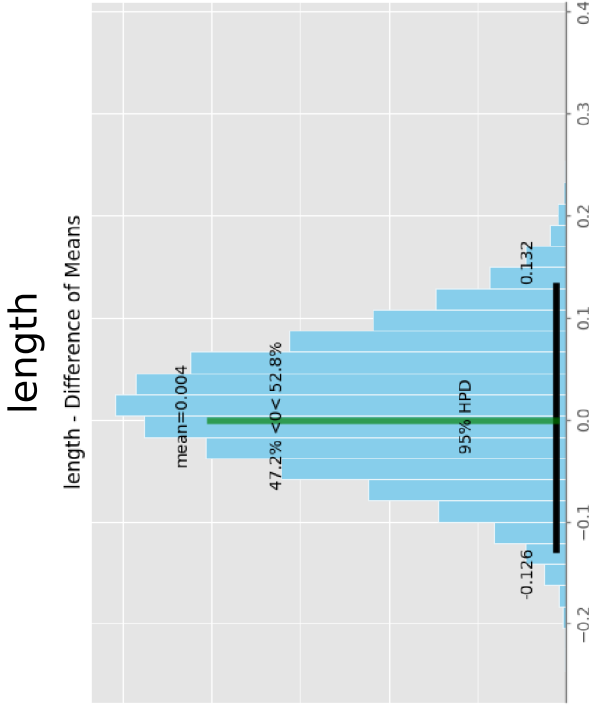
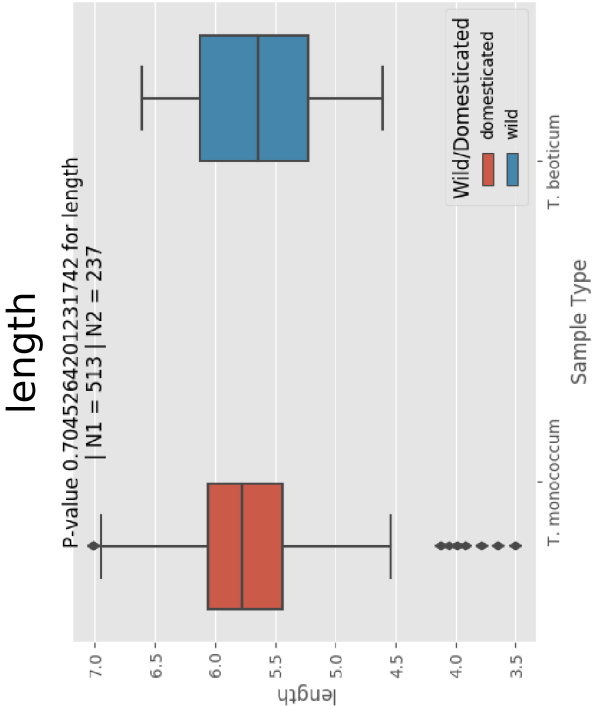
	H. spontaneum+H. vulgare
length	< 0.001
width	0.2417
depth	0.0001
volume	0.6158
surface_area	0.0629
length_depth_width	0.3784

**Spike Averages**

	H. spontaneum+H. vulgare
mean_length	0.0067
mean_width	0.4459
mean_depth	0.0149
mean_volume	0.2436
mean_surface_area	0.0575
mean_length_depth_width	0.2752

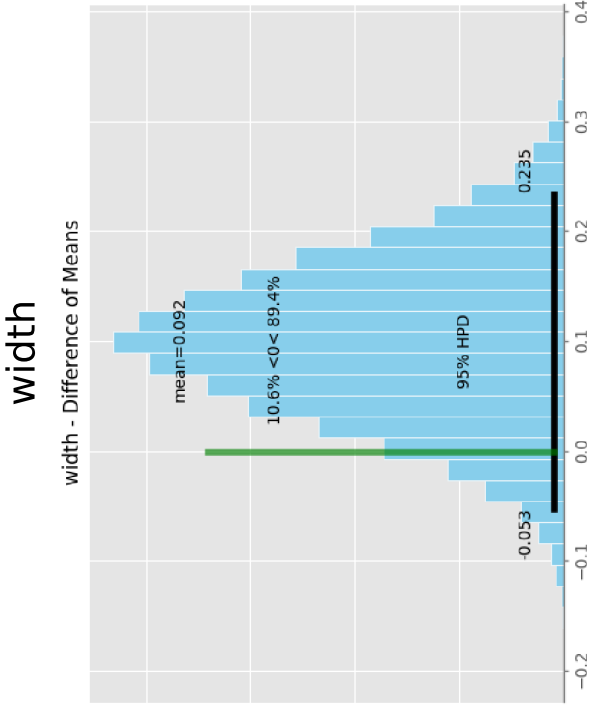
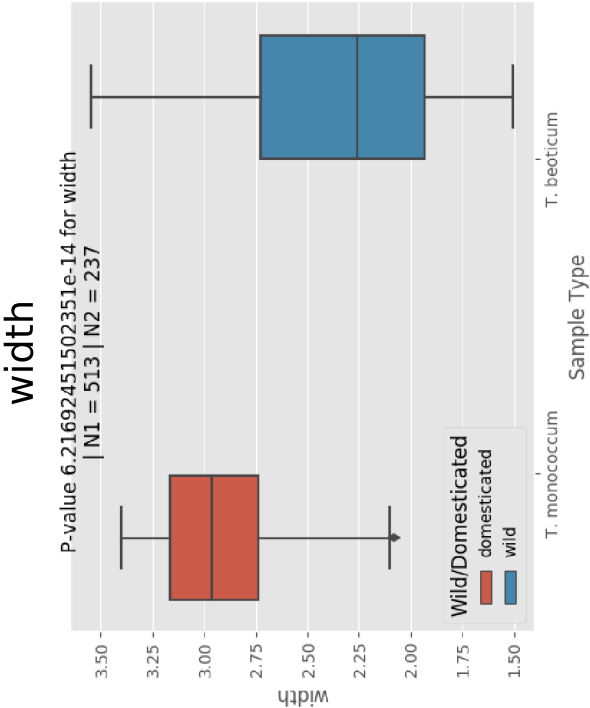
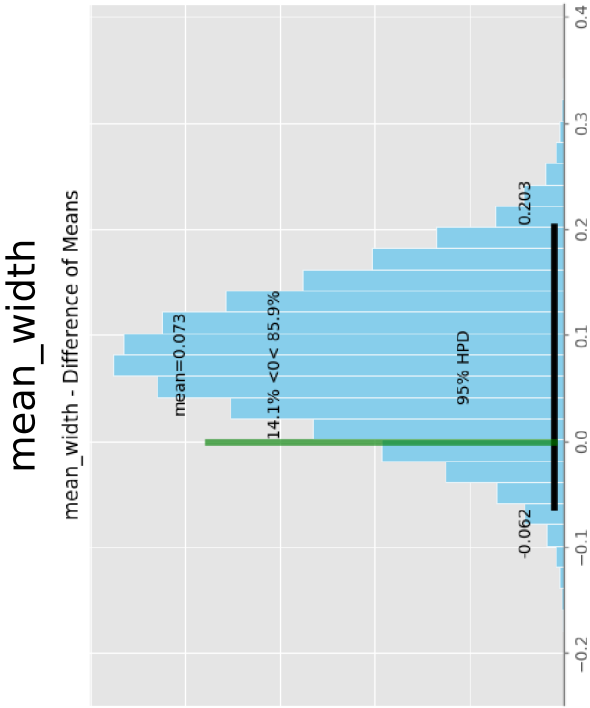
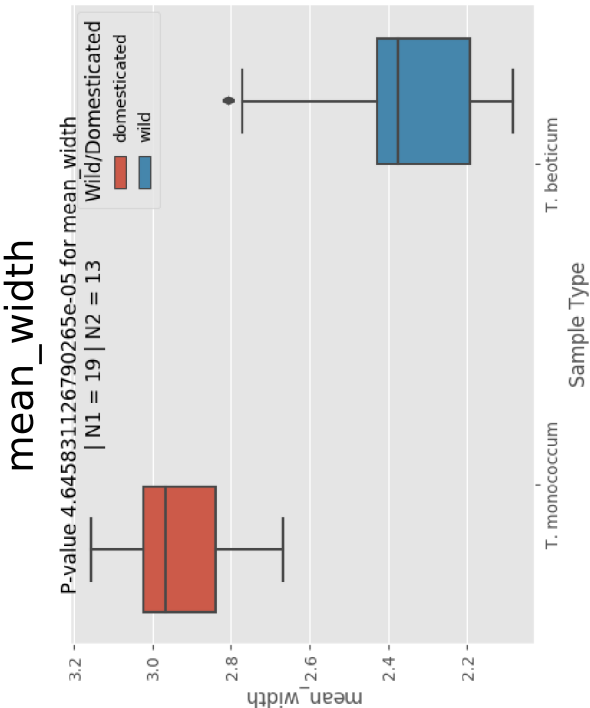
T. monococcum\_T. beoticum

1 Einkorn



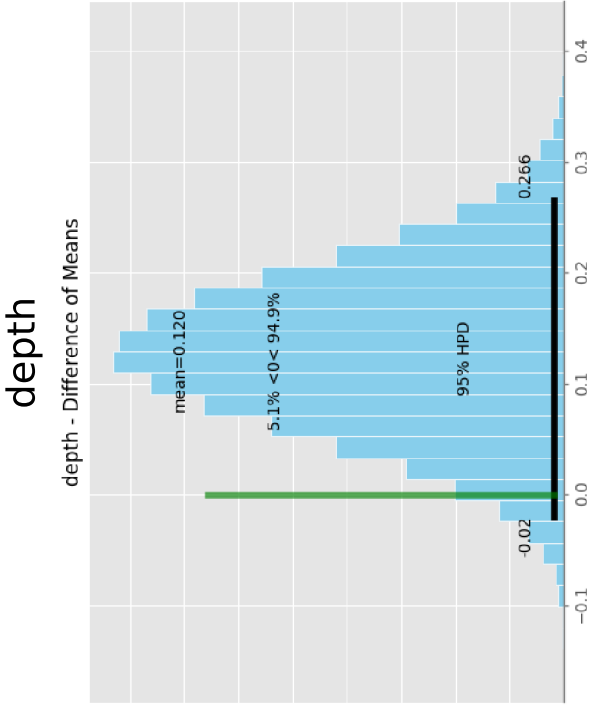
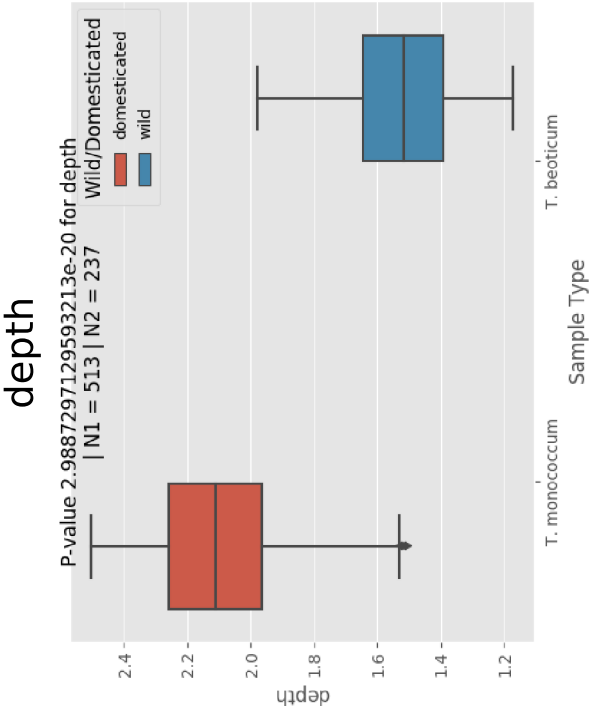
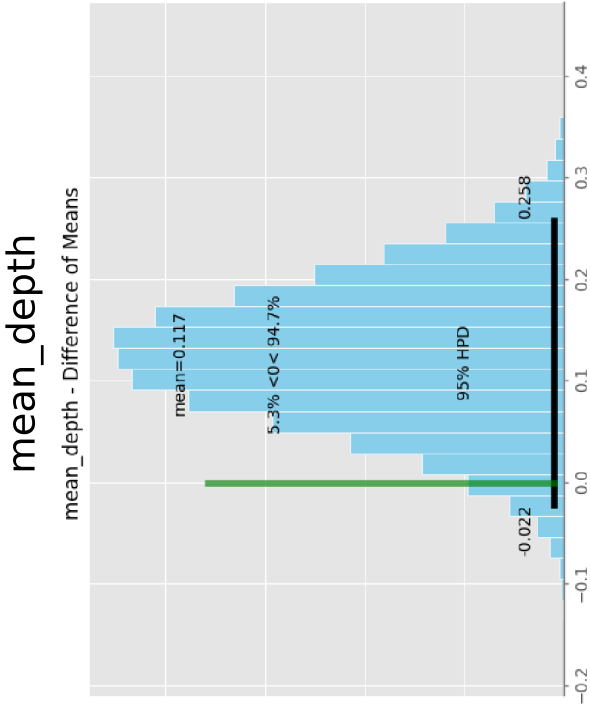
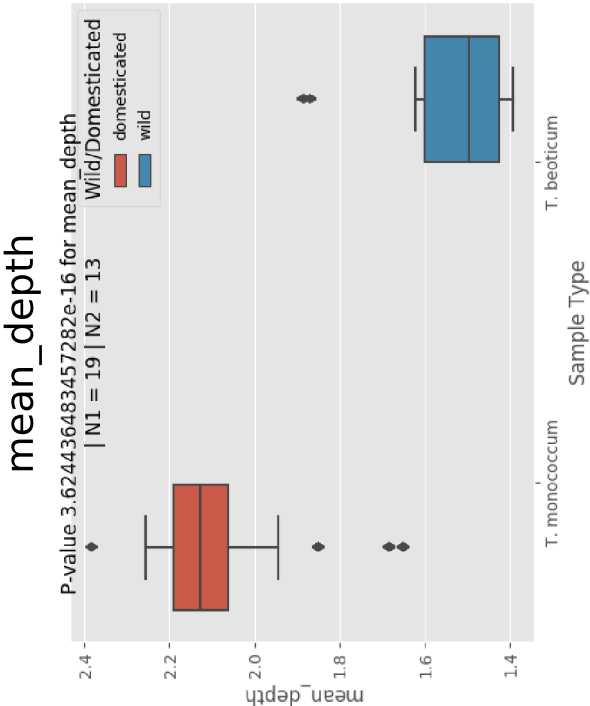
T. monococcum\_T. beoticum

2 Einkorn



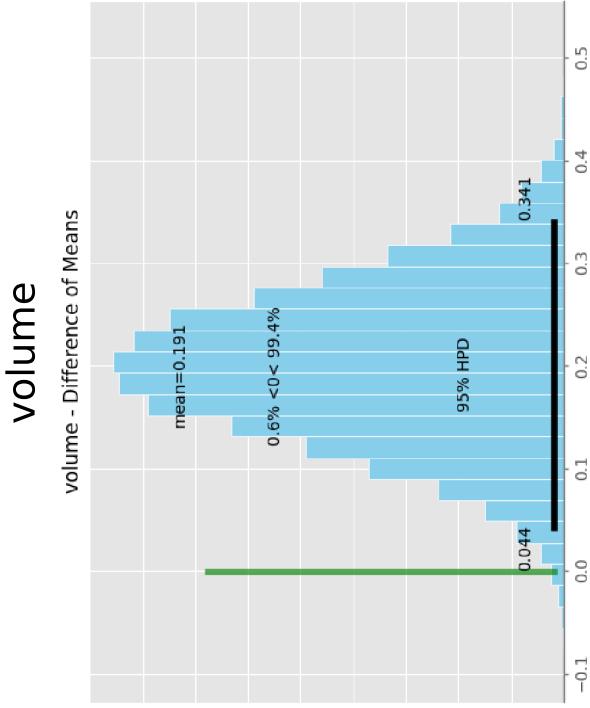
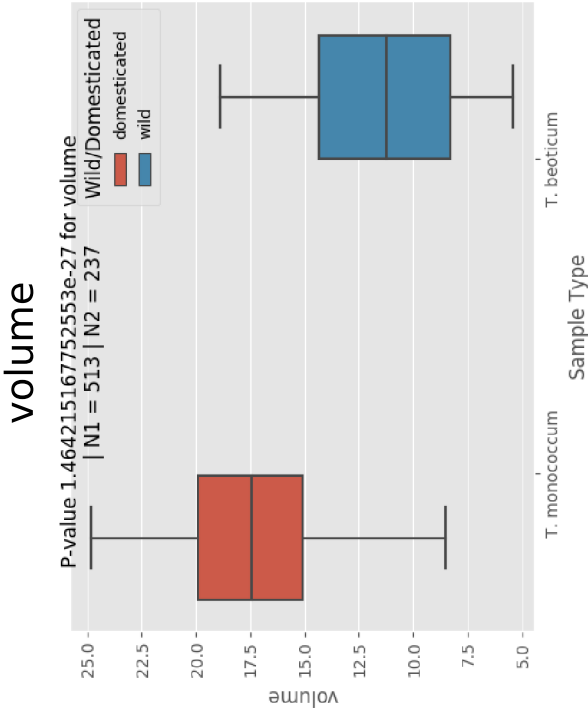
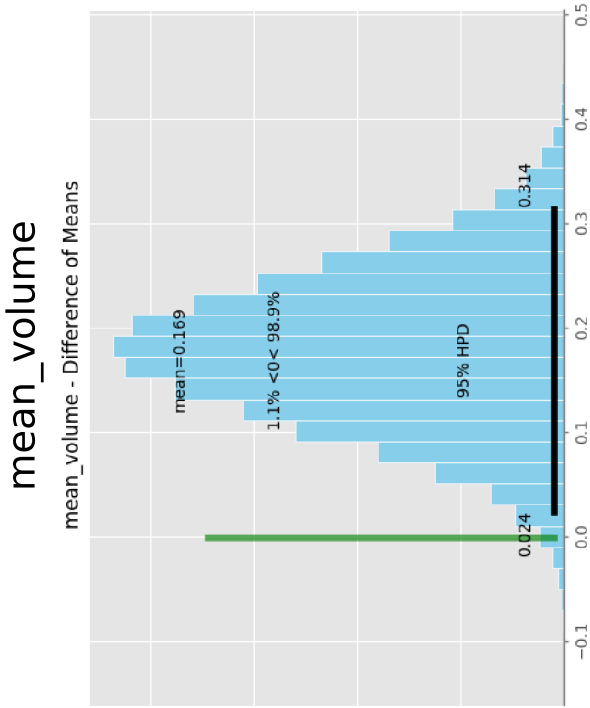
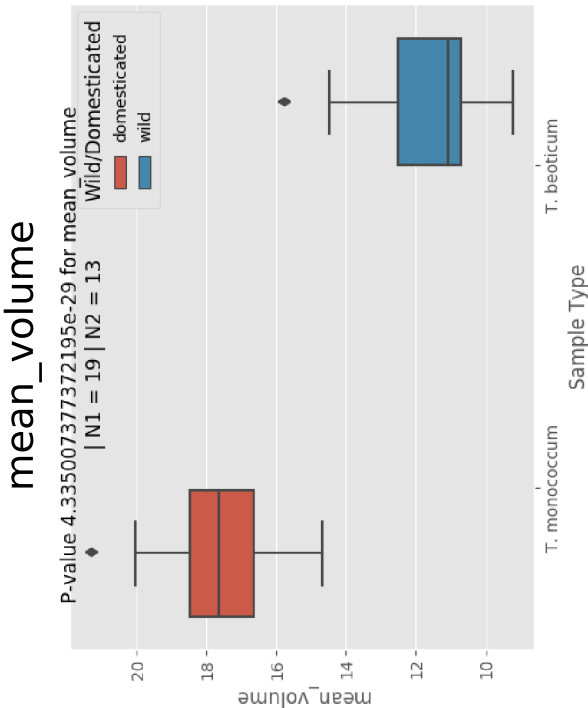
T. monococcum\_T. beoticum

3 Einkorn



T. monococcum\_T. beoticum

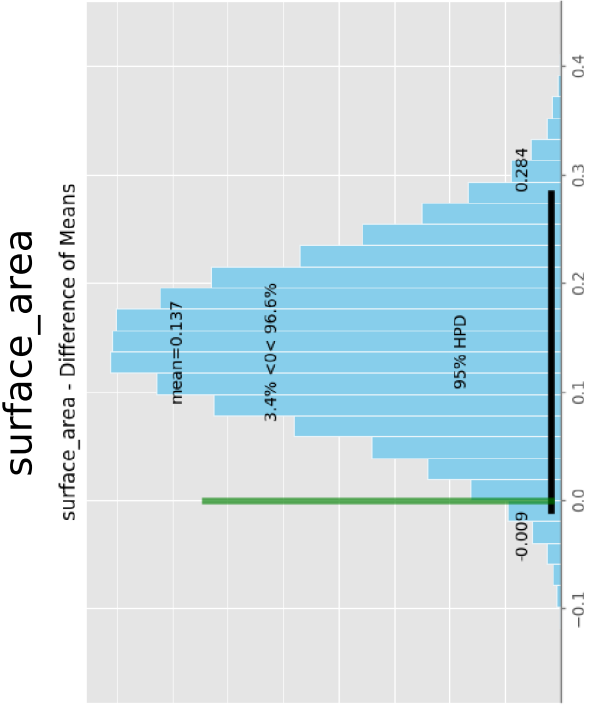
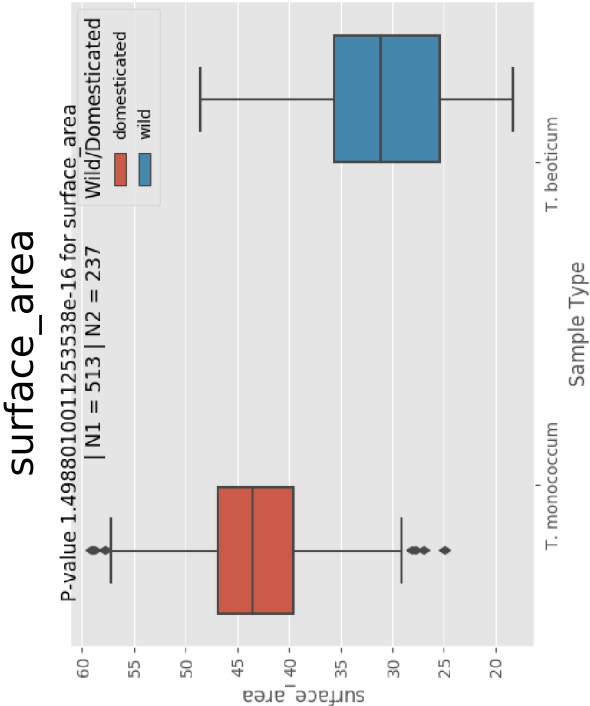
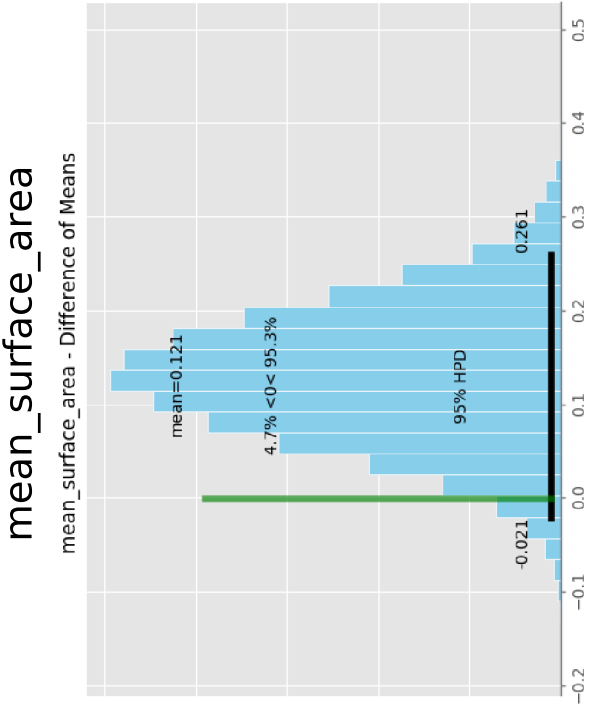
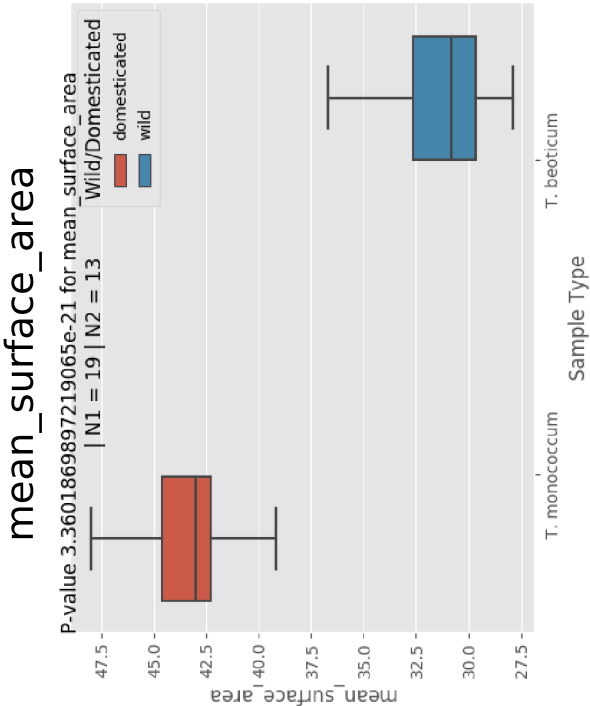
4 Einkorn





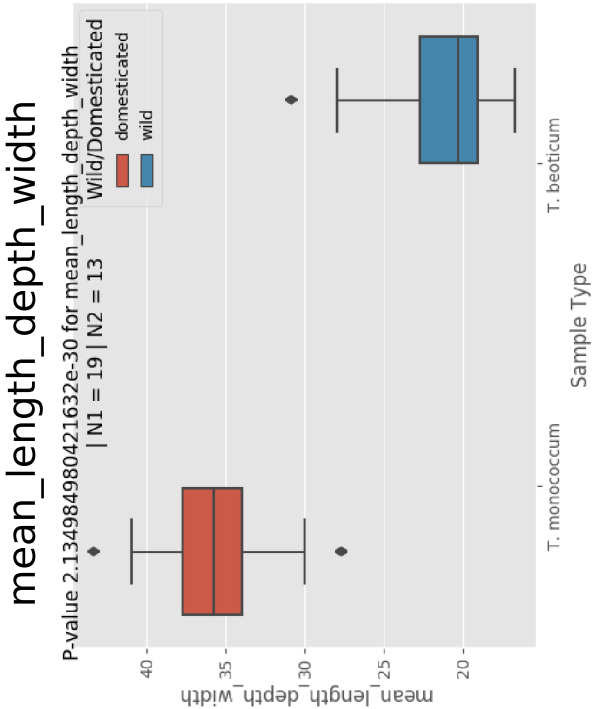
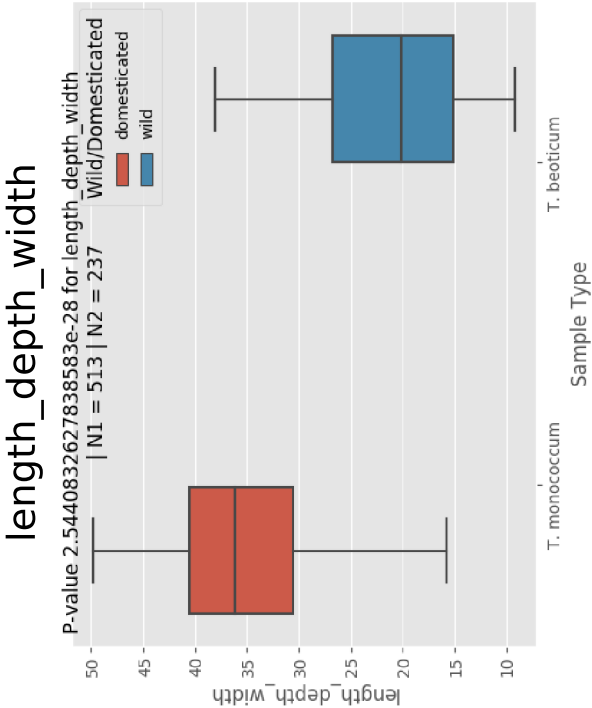
T. monococcum\_T. beoticum

5 Einkorn

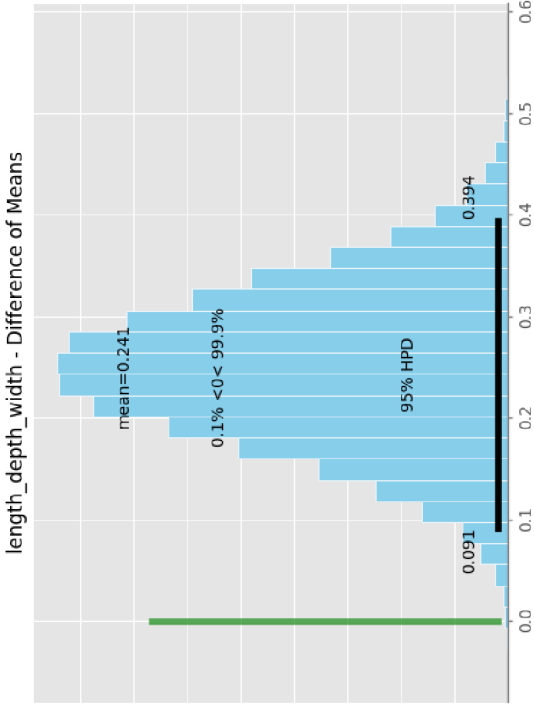


T. monococcum\_T. beoticum

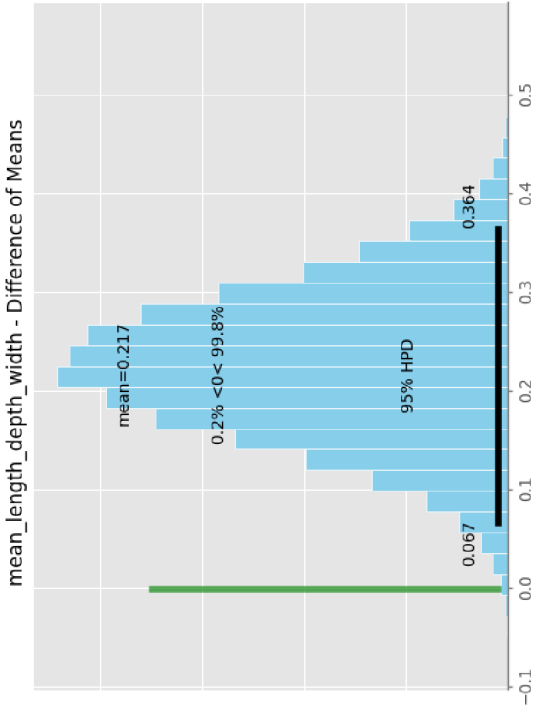
6 Einkorn



length\_depth\_width

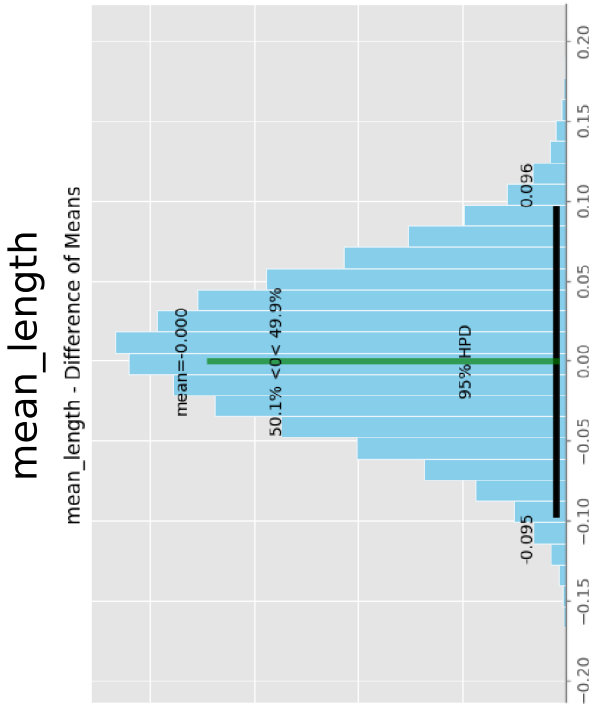
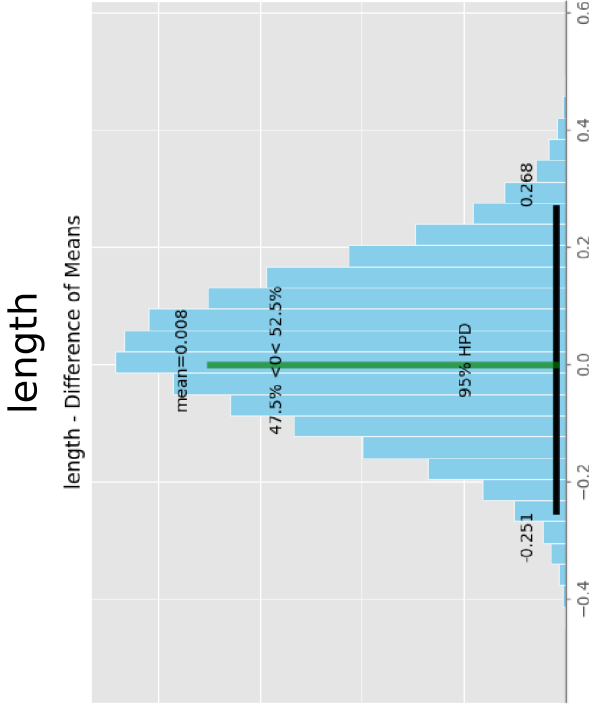
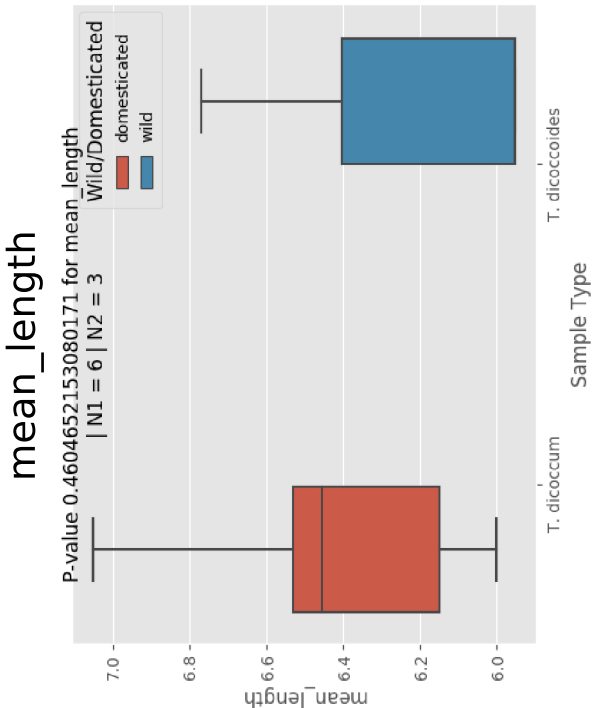
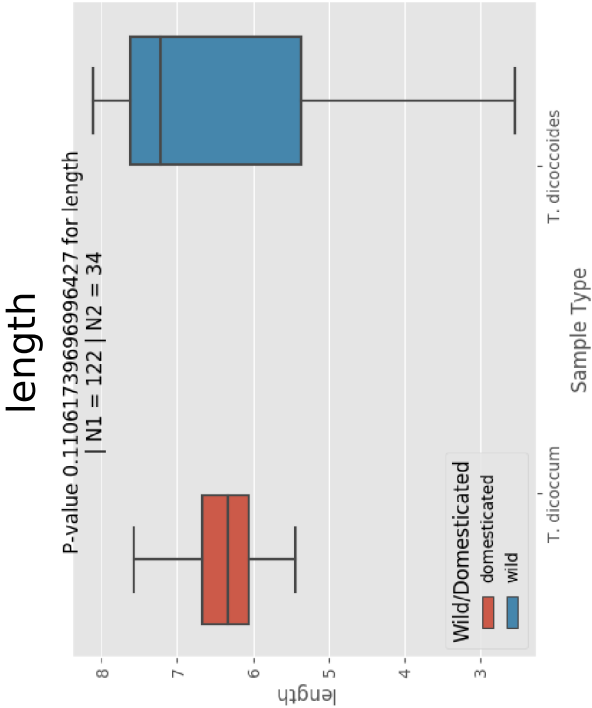


mean\_length\_depth\_width



7 Emmer

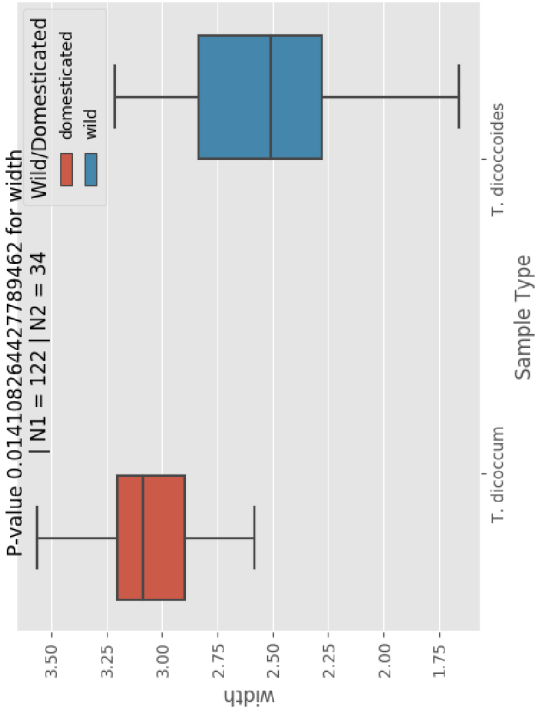
T. dicoccum\_T. dicoccoides



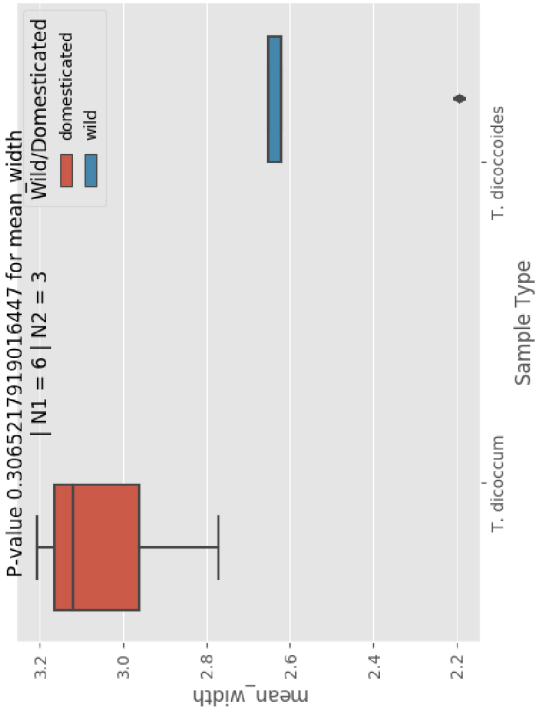
8 Emmer

T. dicoccum\_T. dicoccoides

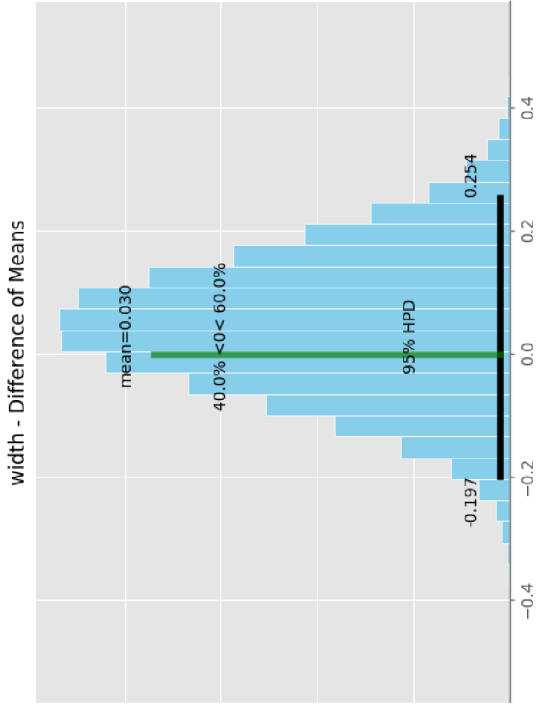
width



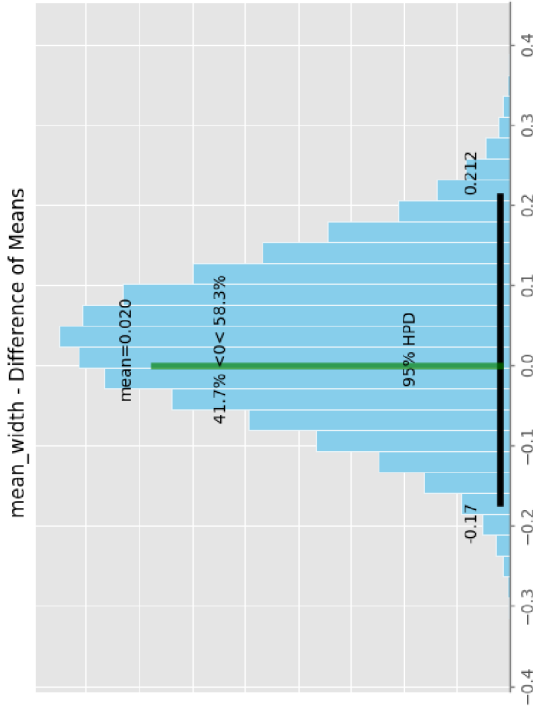
mean\_width



width

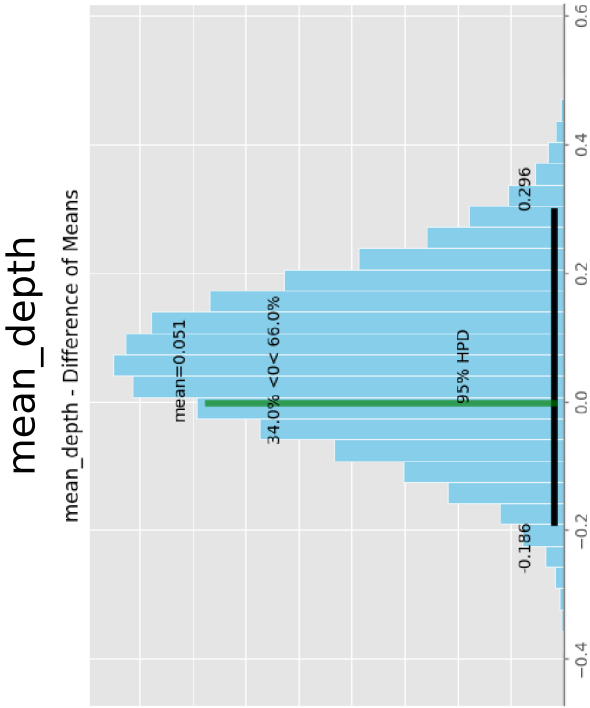
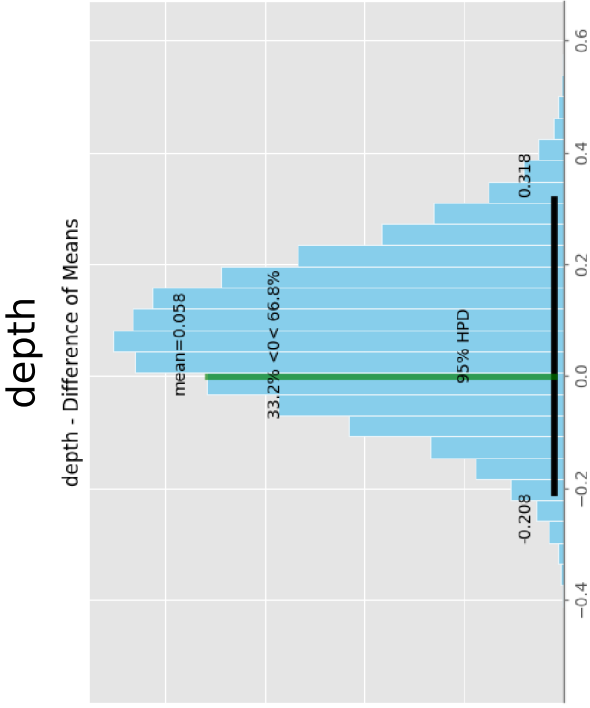
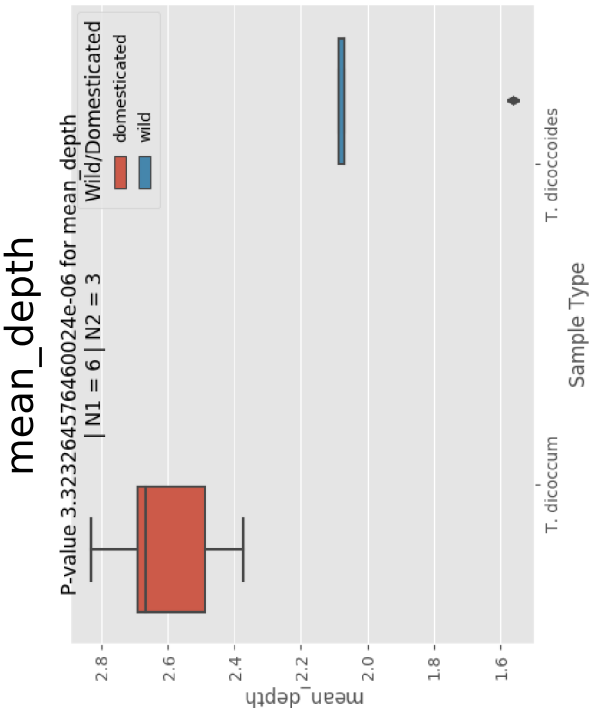
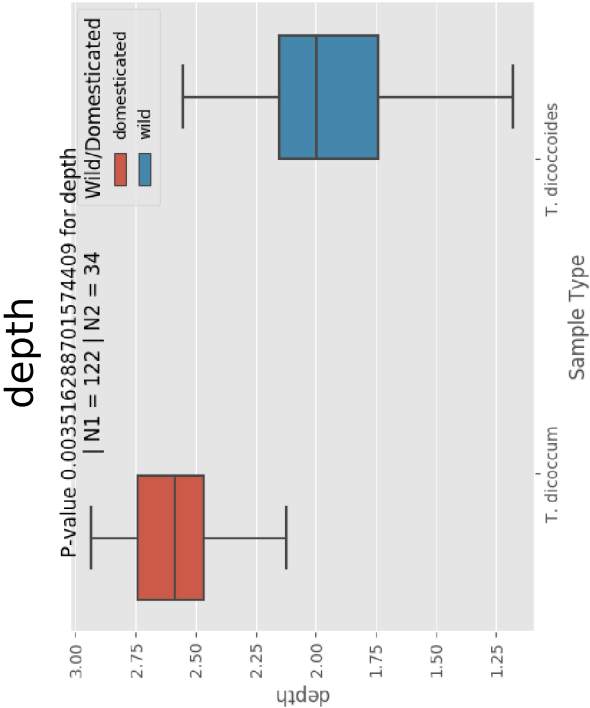


mean\_width



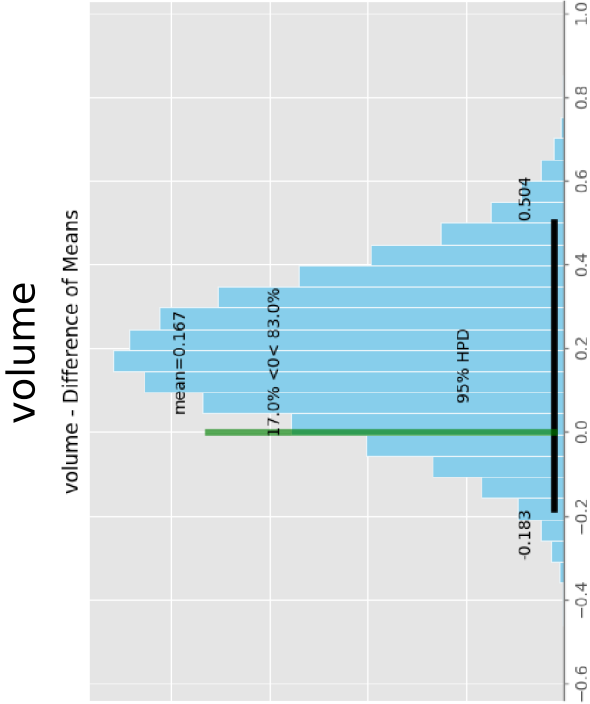
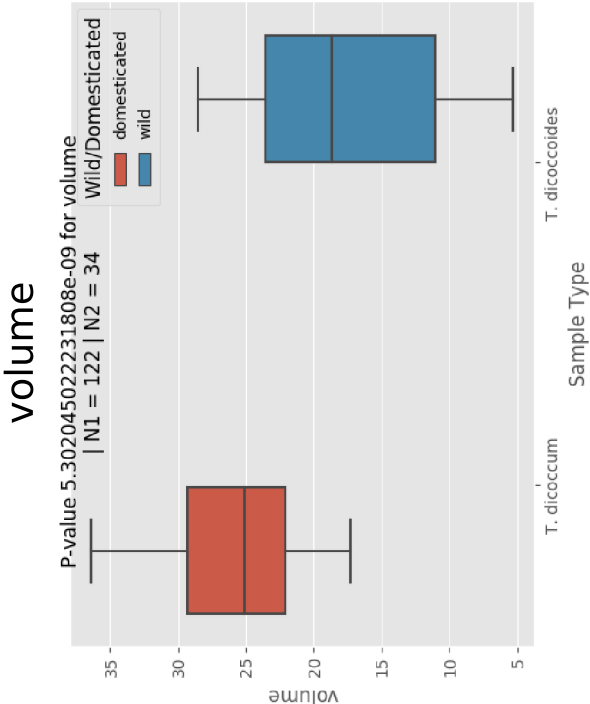
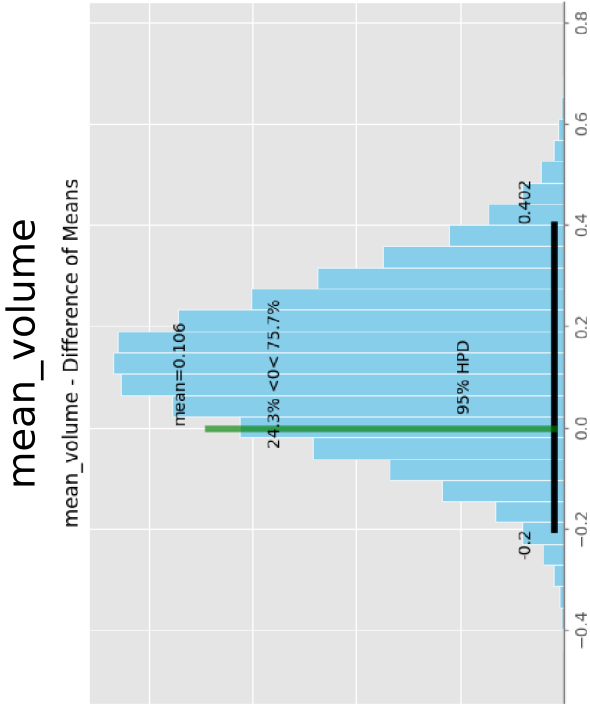
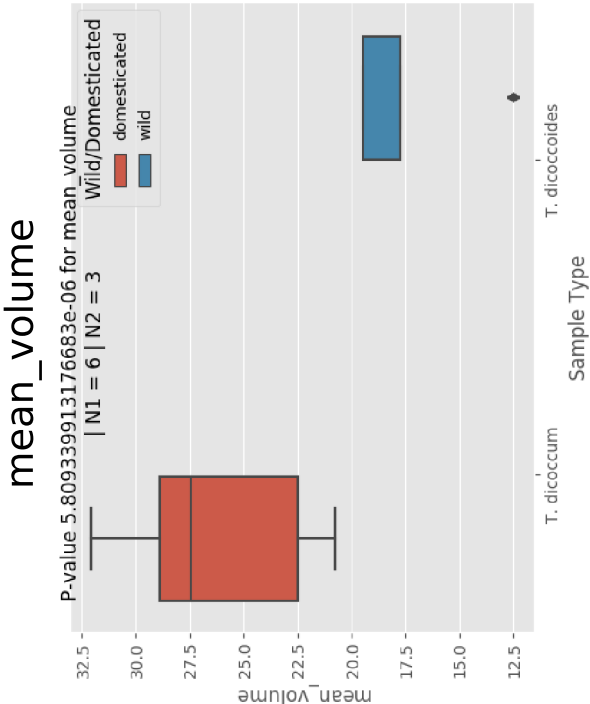
9 Emmer

T. dicoccum\_T. dicoccoides



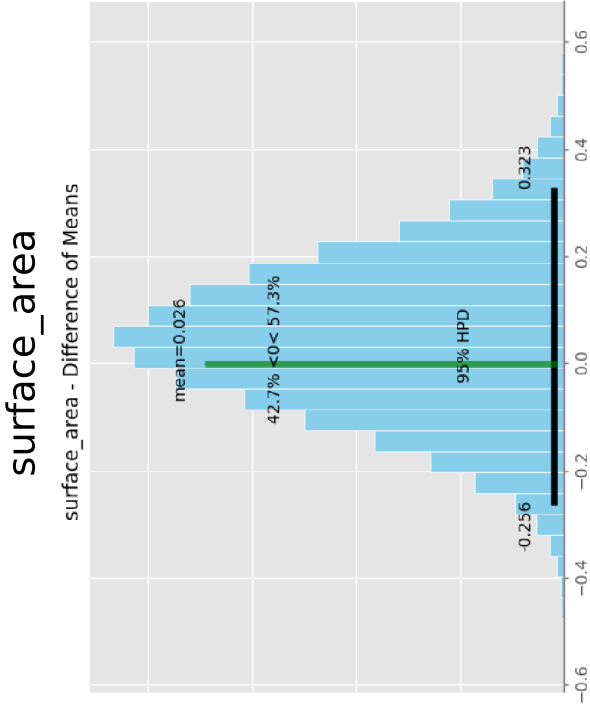
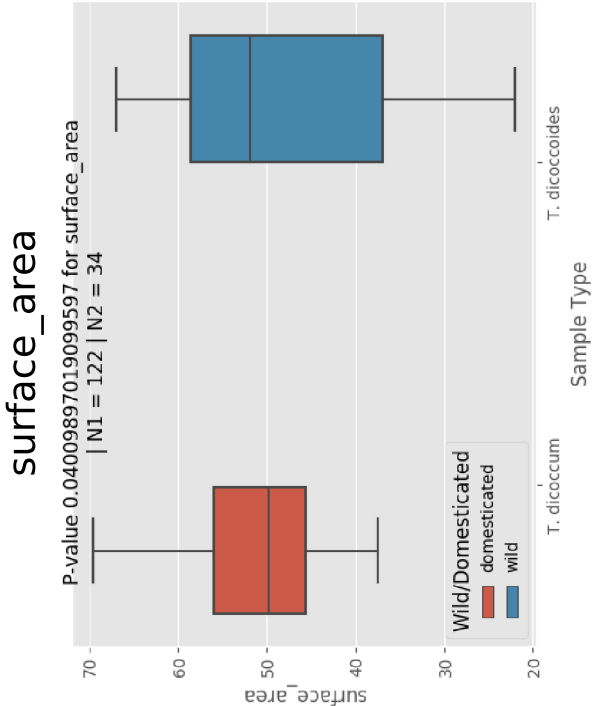
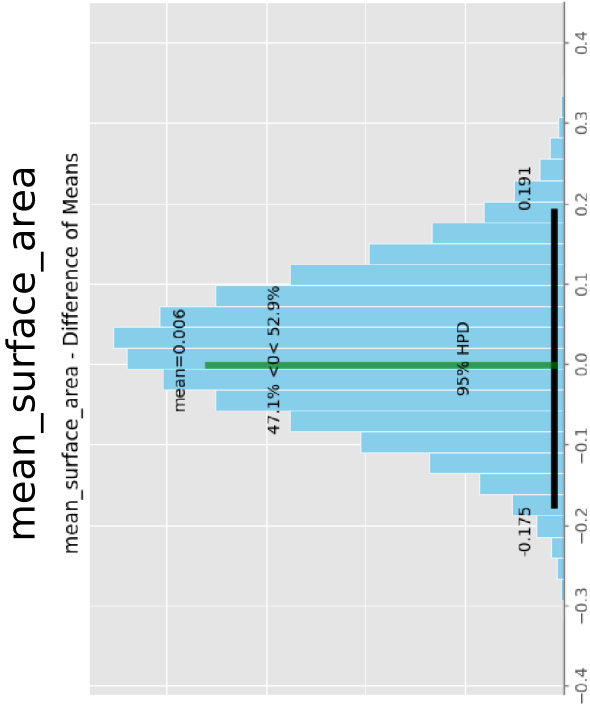
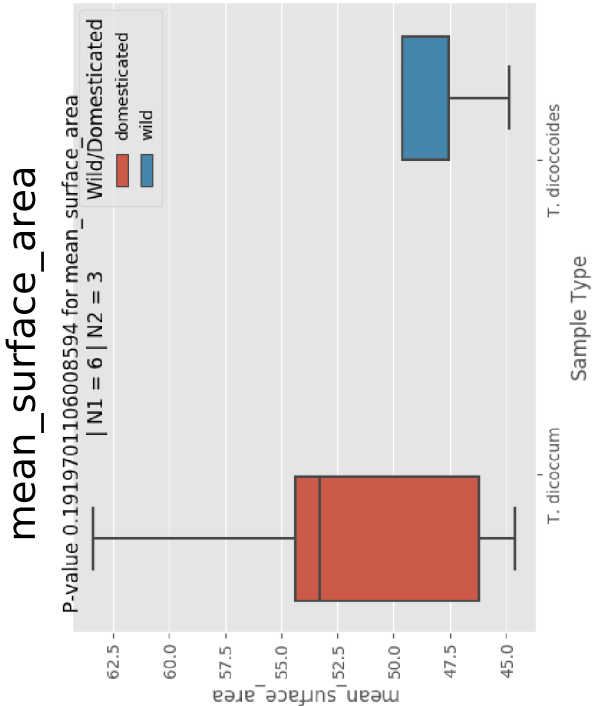
T. dicoccum\_T. dicoccoides

10 Emmer



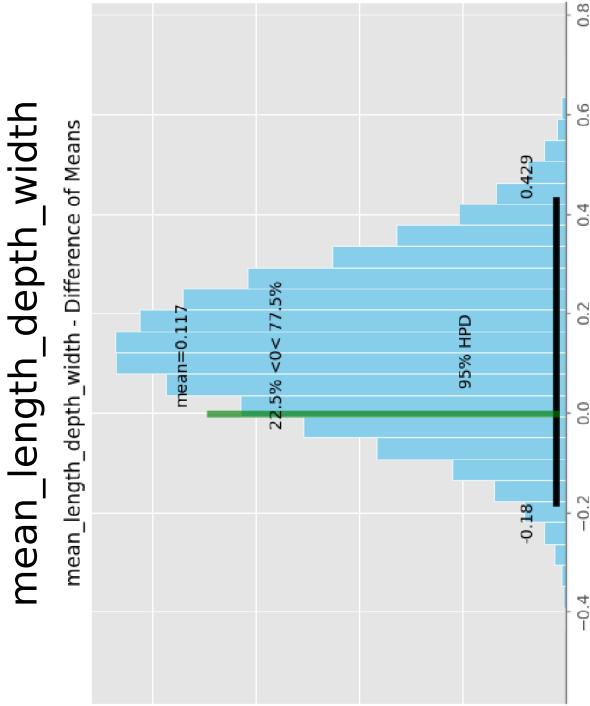
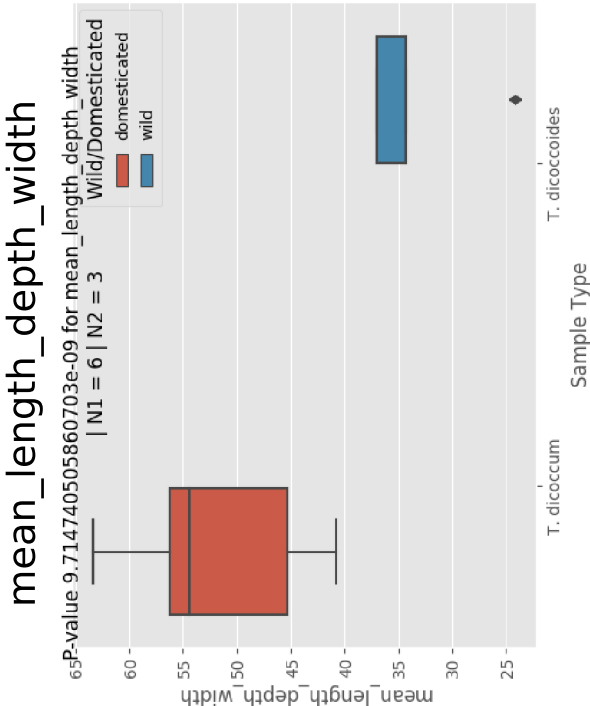
11 Emmer

T. dicoccum\_T. dicoccoides



T. dicoccum\_T. dicoccoides

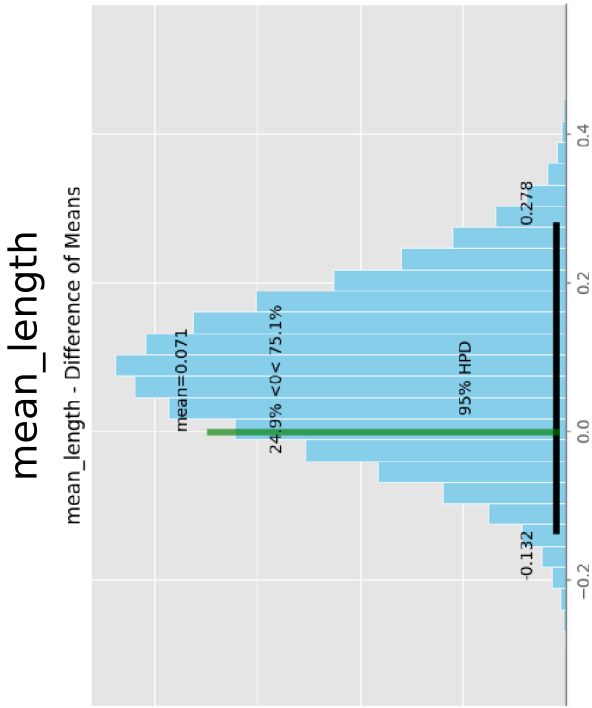
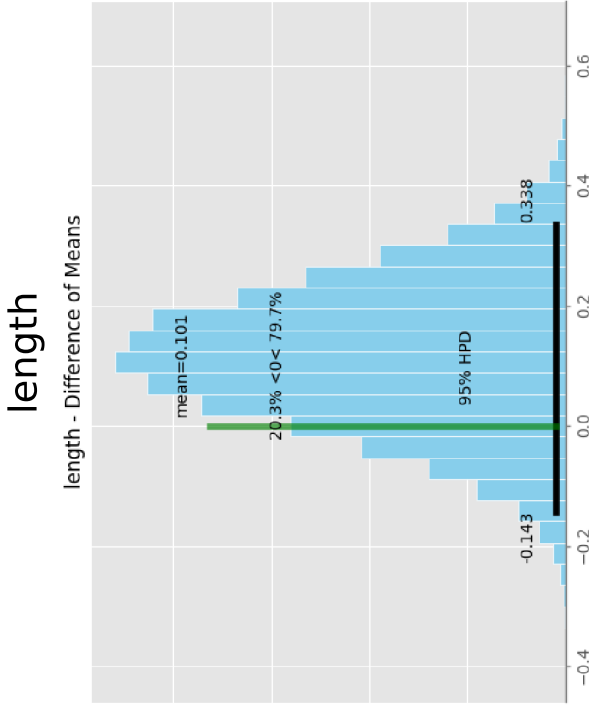
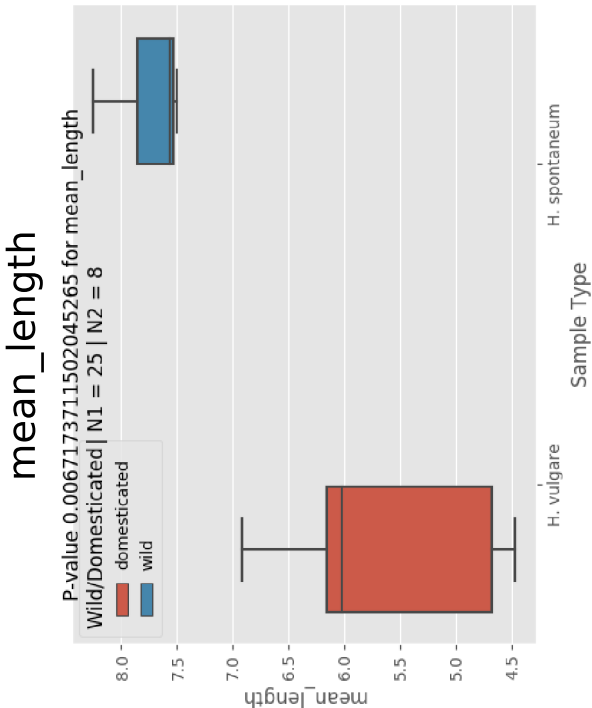
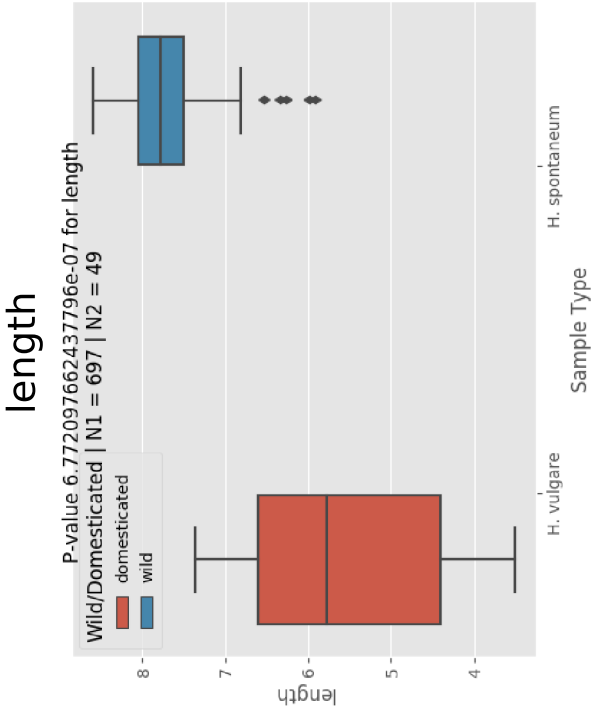
12 Emmer





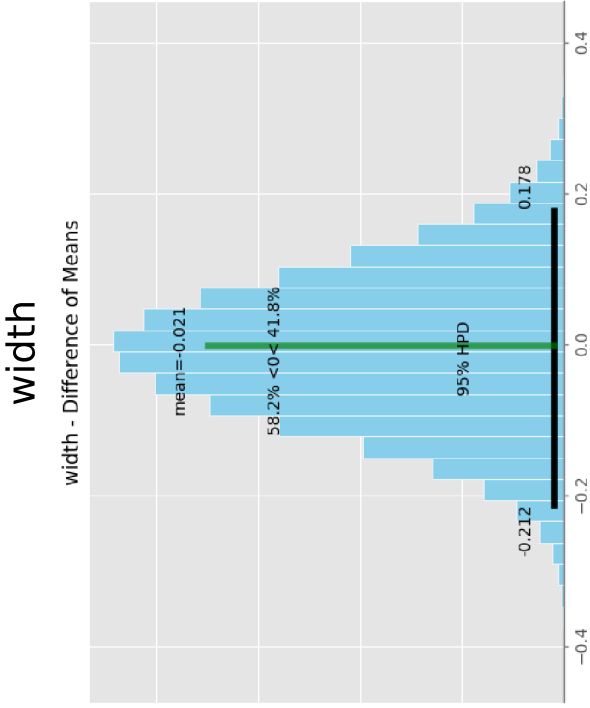
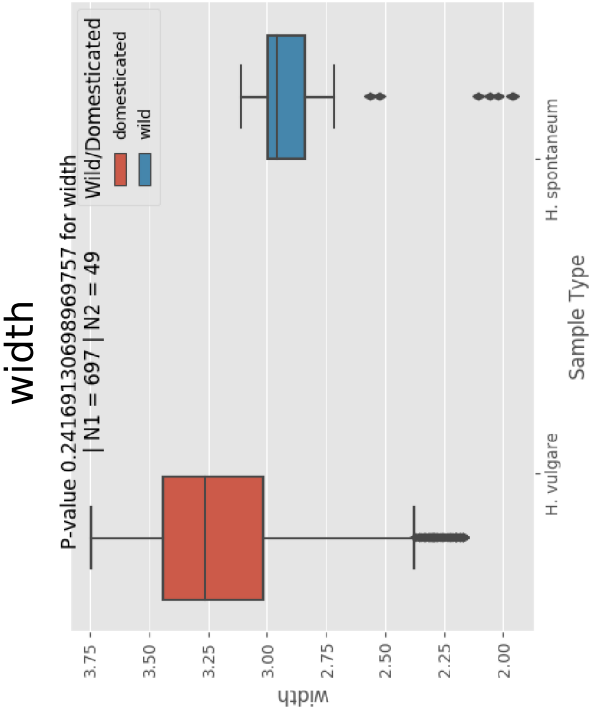
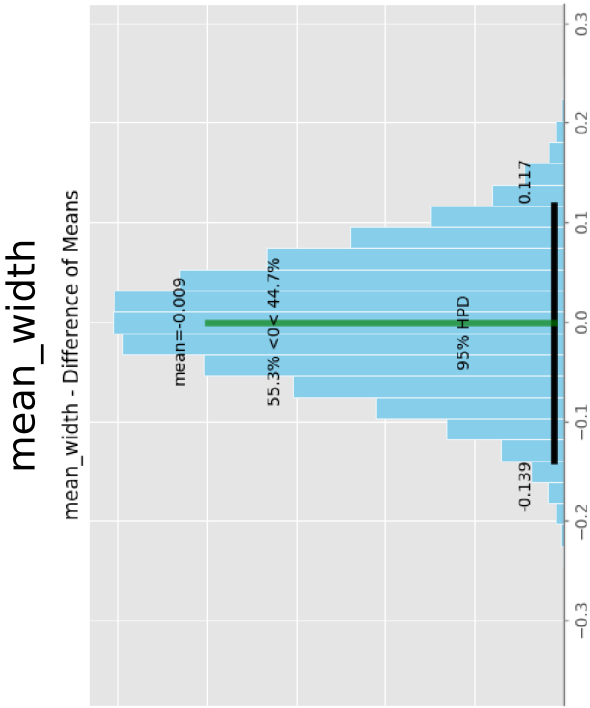
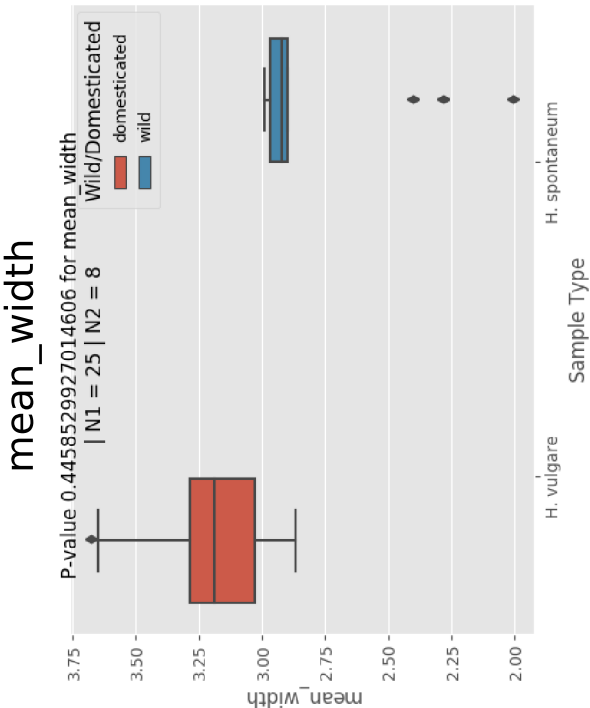
H. spontaneum\_H. vulgare

13 Barley



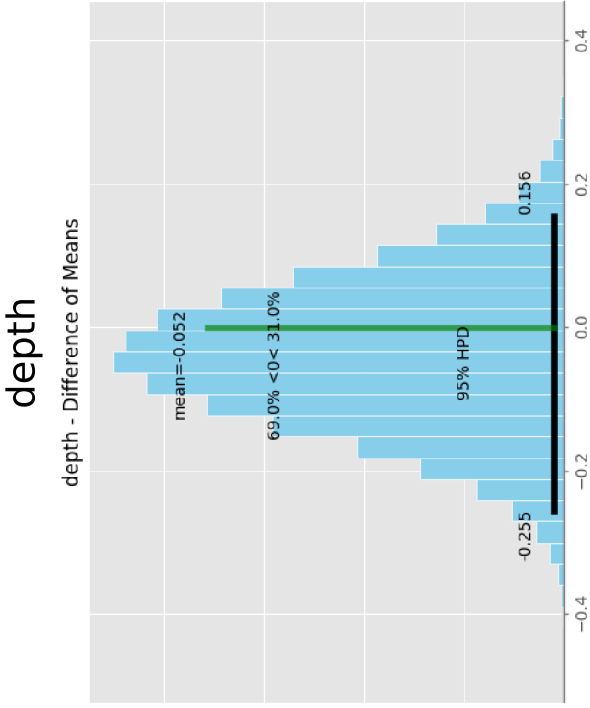
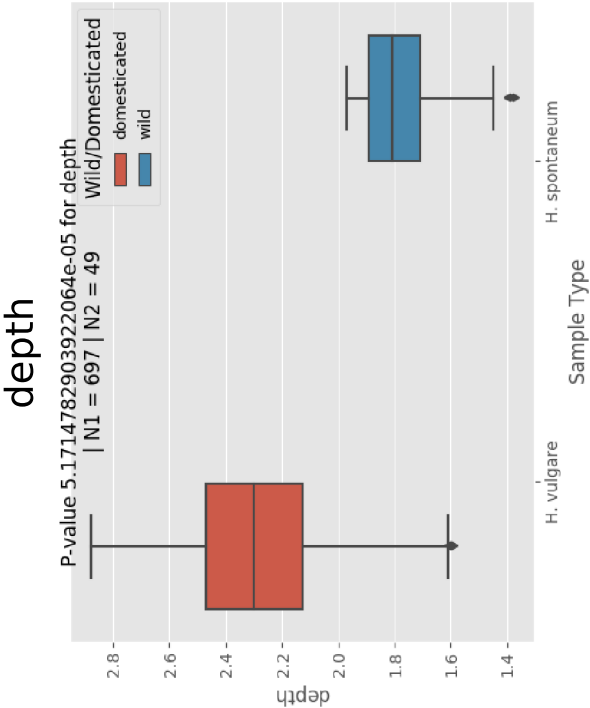
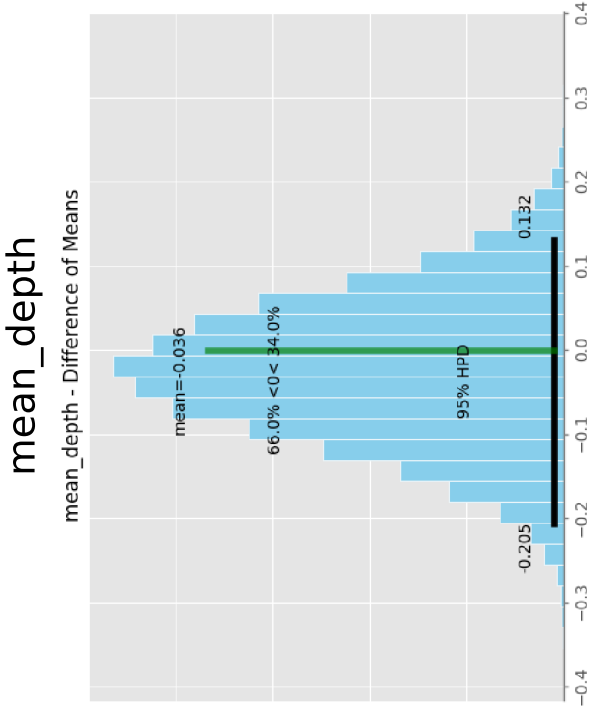
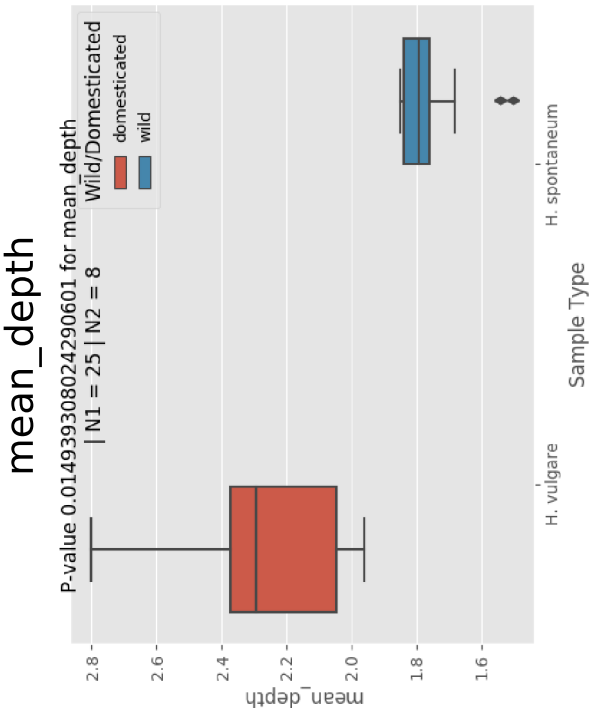
H. spontaneum\_H. vulgare

14 Barley



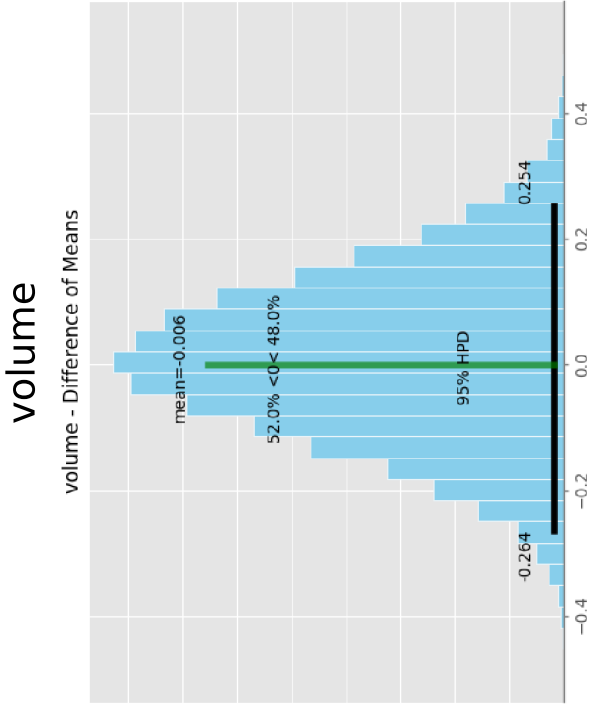
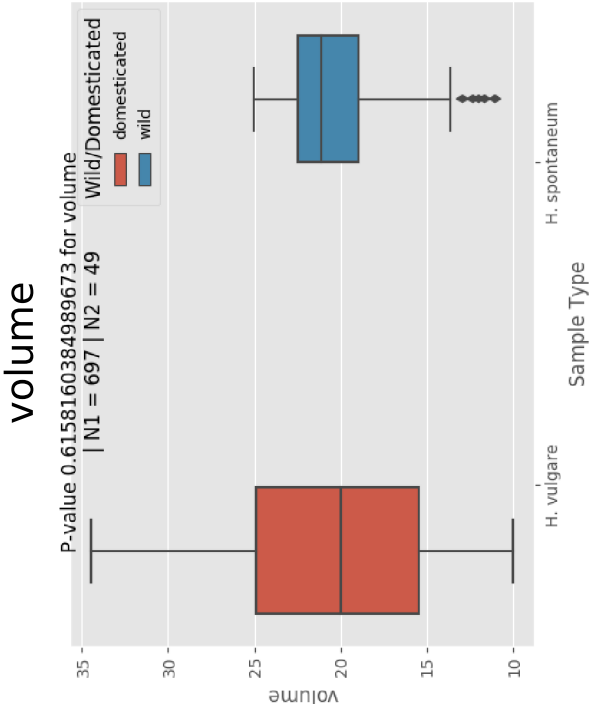
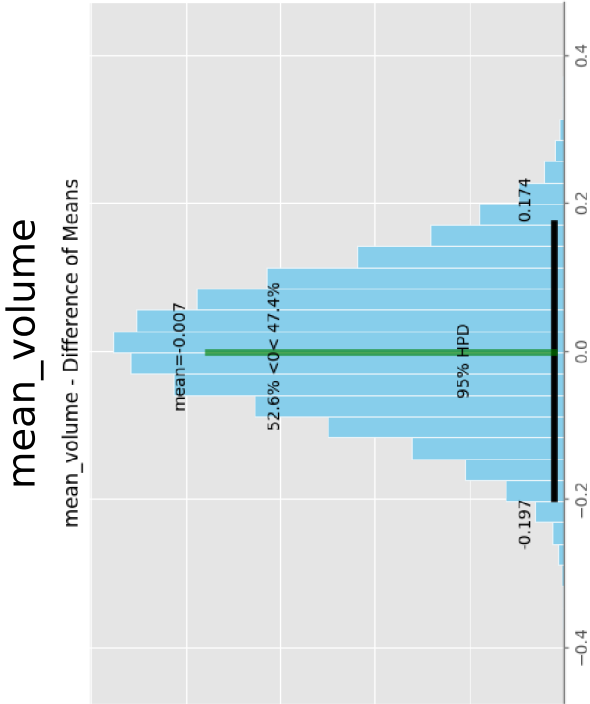
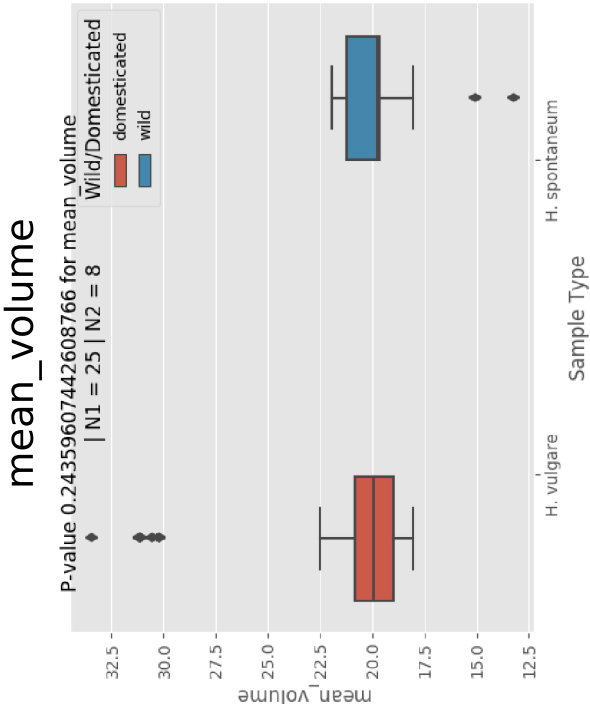
H. spontaneum\_H. vulgare

15 Barley



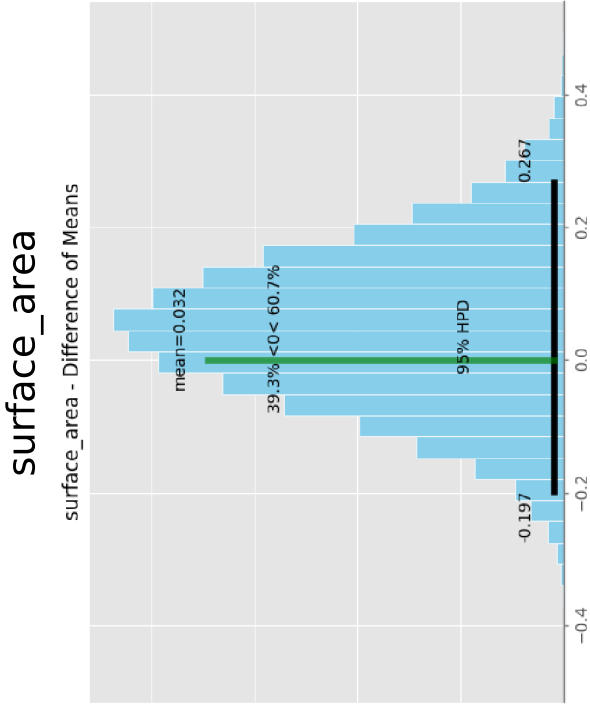
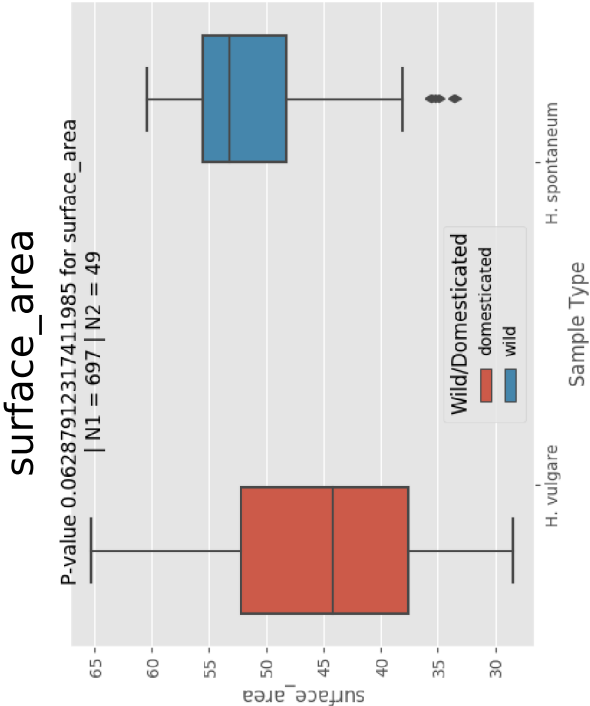
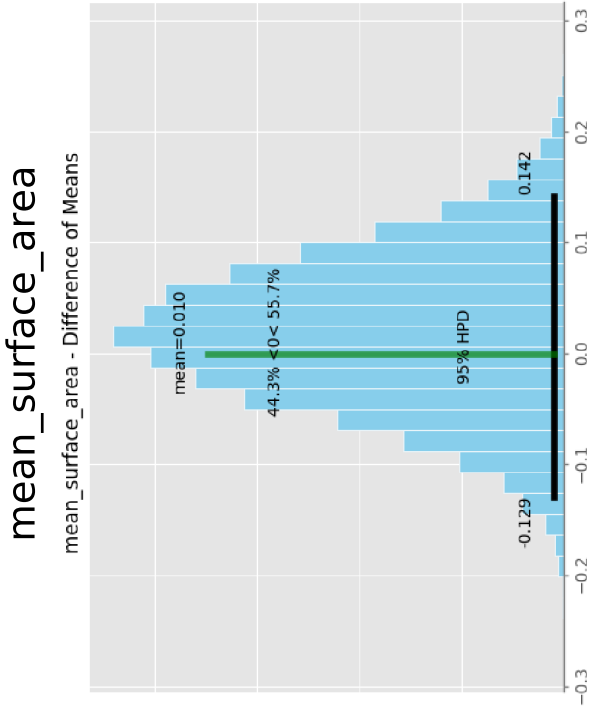
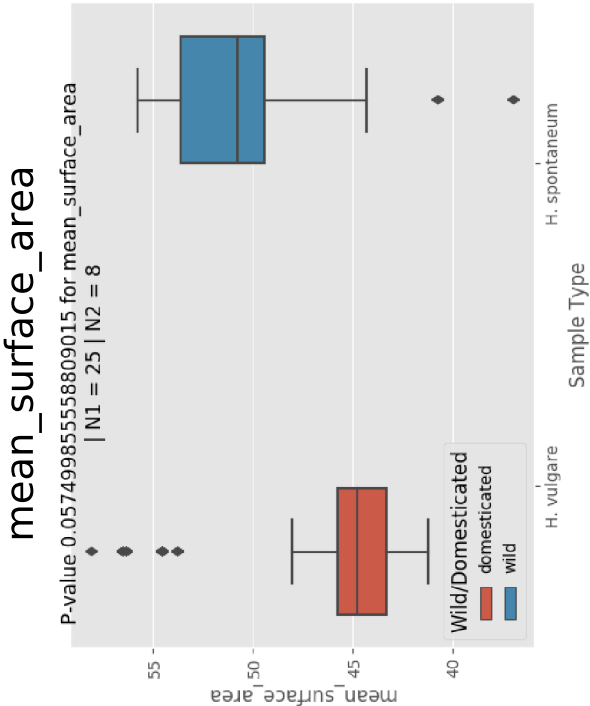
H. spontaneum\_H. vulgare

16 Barley



H. spontaneum\_H. vulgare

17 Barley



H. spontaneum\_H. vulgare

18 Barley

