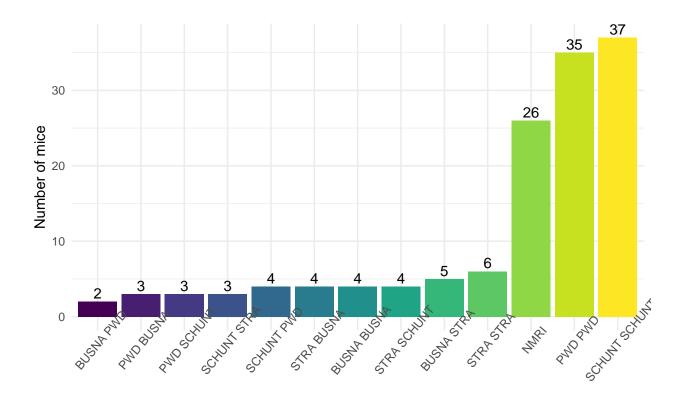
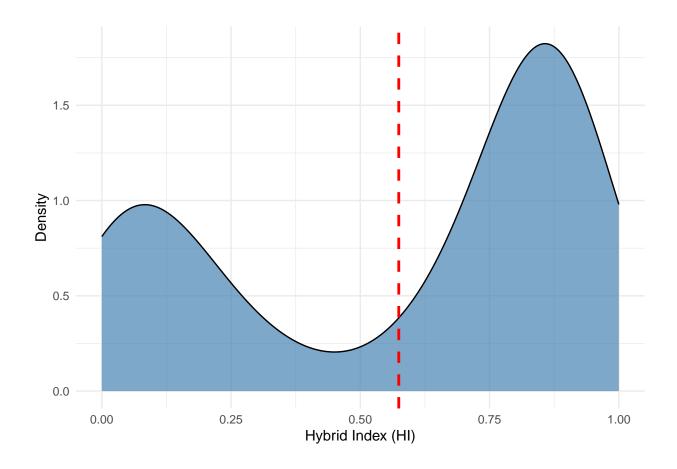
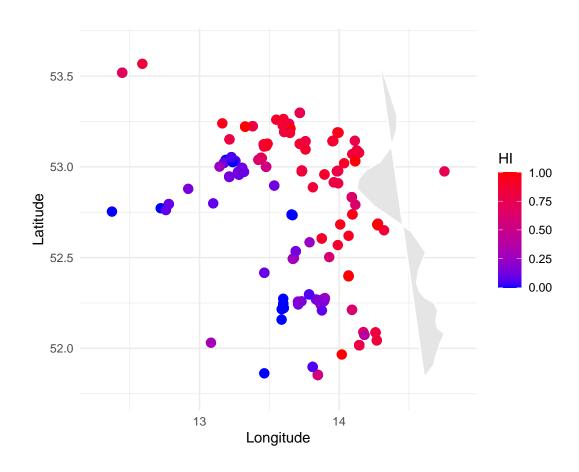
Weight_problems

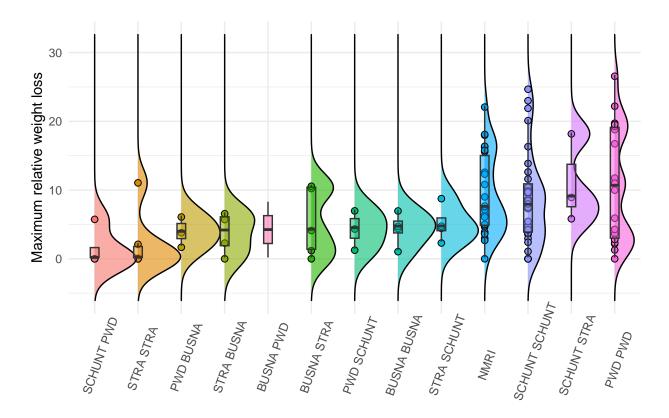
Fay 2024-04-24



Mouse Strain





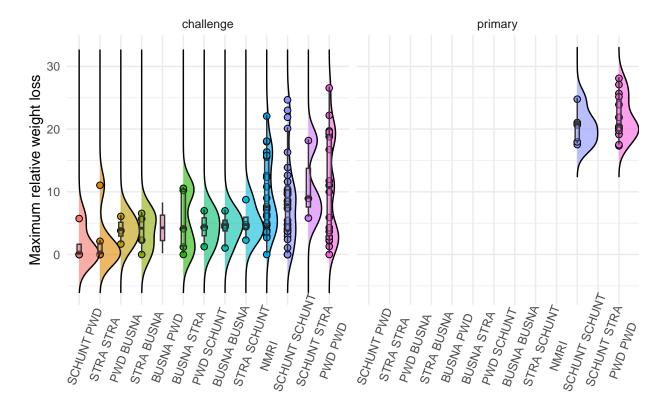


Mouse Strain

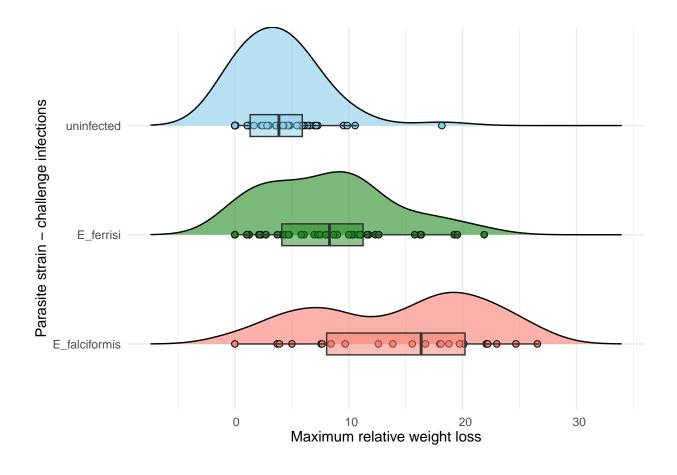
```
## Call:
   lm(formula = max_WL ~ mouse_strain * infection, data = lab)
##
  Residuals:
##
       Min
                1Q
                    Median
                                 3Q
                                         Max
   -16.214
            -3.195
                      1.036
                              4.033
                                     10.586
##
  Coefficients: (11 not defined because of singularities)
##
                                                Estimate Std. Error t value Pr(>|t|)
##
## (Intercept)
                                                 98.5663
                                                              2.9645
                                                                      33.248
                                                                              < 2e-16
                                                                      -0.201
## mouse_strainSTRA STRA
                                                 -0.7698
                                                              3.8272
                                                                              0.84093
## mouse_strainPWD BUSNA
                                                 -2.4180
                                                              4.5284
                                                                      -0.534
                                                                              0.59435
## mouse_strainSTRA BUSNA
                                                 -2.1998
                                                              4.1925
                                                                      -0.525
                                                                              0.60075
                                                 -2.6190
                                                              5.1347
                                                                      -0.510
                                                                              0.61094
## mouse_strainBUSNA PWD
## mouse_strainBUSNA STRA
                                                 -3.7786
                                                              3.9774
                                                                      -0.950
                                                                              0.34399
                                                              4.5284
## mouse_strainPWD SCHUNT
                                                 -2.7512
                                                                      -0.608
                                                                              0.54463
                                                 -2.8474
                                                              4.1925
                                                                      -0.679
                                                                              0.49833
## mouse_strainBUSNA BUSNA
## mouse_strainSTRA SCHUNT
                                                 -3.6208
                                                              4.1925
                                                                      -0.864
                                                                              0.38950
                                                              3.1844
## mouse_strainNMRI
                                                 -7.8072
                                                                      -2.452
                                                                              0.01565
## mouse_strainSCHUNT SCHUNT
                                                 -7.0206
                                                              3.1444
                                                                      -2.233
                                                                              0.02741
                                                                              0.03724
                                                 -9.5383
                                                              4.5284
                                                                      -2.106
## mouse_strainSCHUNT STRA
## mouse_strainPWD PWD
                                                 -9.1524
                                                              3.2475
                                                                      -2.818
                                                                              0.00564
                                                -11.2439
                                                              2.0252
                                                                      -5.552
                                                                              1.7e-07
## infectionprimary
## mouse strainSTRA STRA:infectionprimary
                                                                  NA
                                                                          NA
                                                                                    NA
                                                      NA
## mouse_strainPWD BUSNA:infectionprimary
                                                                  NA
                                                      NA
                                                                          NA
                                                                                    NA
```

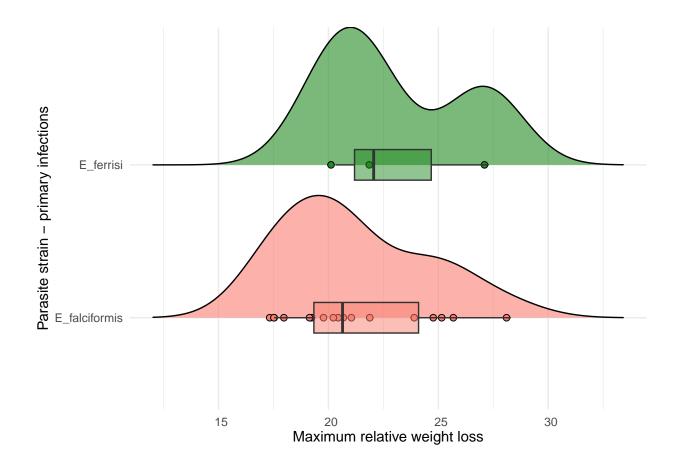
##

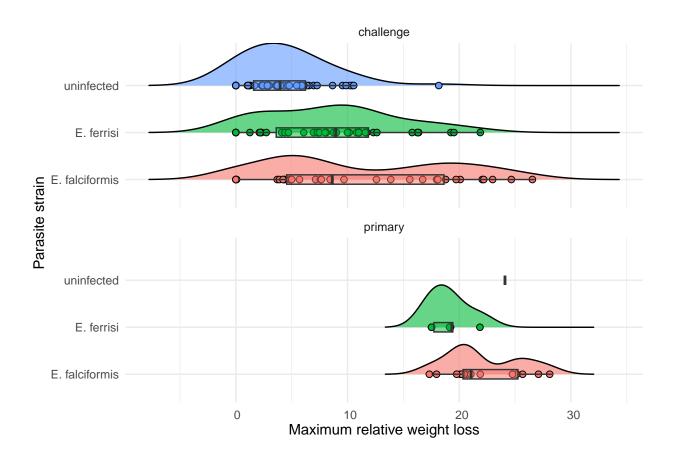
```
## mouse strainSTRA BUSNA:infectionprimary
                                                    NA
                                                                NA
                                                                        NA
                                                                                 NA
## mouse_strainBUSNA PWD:infectionprimary
                                                    NΑ
                                                                NΑ
                                                                        NΑ
                                                                                 NΑ
## mouse strainBUSNA STRA:infectionprimary
                                                    NA
                                                                NA
                                                                        NA
                                                                                 NA
## mouse_strainPWD SCHUNT:infectionprimary
                                                                NA
                                                                        NA
                                                                                 NA
                                                    NΑ
## mouse strainBUSNA BUSNA:infectionprimary
                                                    NΑ
                                                                        NΑ
                                                                                 NΑ
## mouse strainSTRA SCHUNT:infectionprimary
                                                                NA
                                                                        NA
                                                    NΑ
                                                                                 NA
## mouse strainNMRI:infectionprimary
                                                    NΑ
                                                                NA
                                                                        NΑ
                                                                    -0.200
## mouse_strainSCHUNT SCHUNT:infectionprimary -0.7003
                                                                            0.84164
                                                            3.4972
## mouse_strainSCHUNT STRA:infectionprimary
                                                                NA
                                                                        NA
                                                                                 NA
## mouse_strainPWD PWD:infectionprimary
                                                                                 NA
                                                    NA
                                                                NA
                                                                        NA
##
## (Intercept)
## mouse_strainSTRA STRA
## mouse_strainPWD BUSNA
## mouse_strainSTRA BUSNA
## mouse_strainBUSNA PWD
## mouse_strainBUSNA STRA
## mouse strainPWD SCHUNT
## mouse_strainBUSNA BUSNA
## mouse strainSTRA SCHUNT
## mouse_strainNMRI
## mouse strainSCHUNT SCHUNT
## mouse_strainSCHUNT STRA
## mouse strainPWD PWD
## infectionprimary
## mouse_strainSTRA STRA:infectionprimary
## mouse_strainPWD BUSNA:infectionprimary
## mouse_strainSTRA BUSNA:infectionprimary
## mouse_strainBUSNA PWD:infectionprimary
## mouse_strainBUSNA STRA:infectionprimary
## mouse_strainPWD SCHUNT:infectionprimary
## mouse_strainBUSNA BUSNA:infectionprimary
## mouse_strainSTRA SCHUNT:infectionprimary
## mouse_strainNMRI:infectionprimary
## mouse strainSCHUNT SCHUNT:infectionprimary
## mouse_strainSCHUNT STRA:infectionprimary
## mouse_strainPWD PWD:infectionprimary
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 5.929 on 121 degrees of freedom
## Multiple R-squared: 0.4953, Adjusted R-squared: 0.4369
## F-statistic: 8.482 on 14 and 121 DF, p-value: 1.68e-12
```

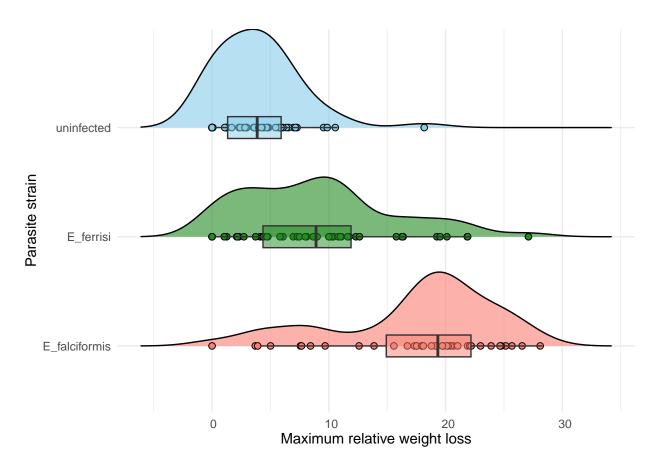


Mouse Strain



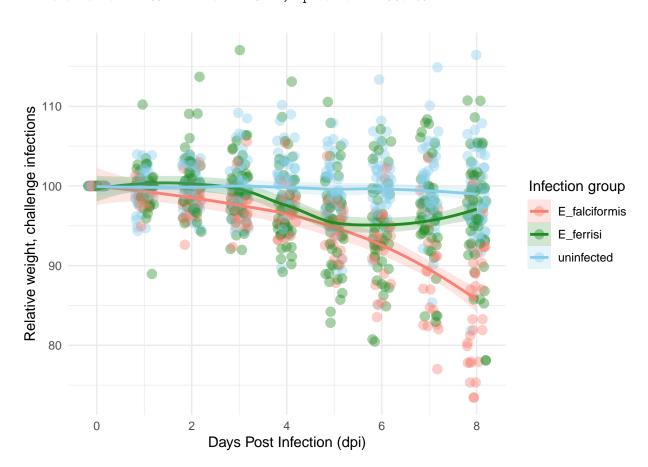


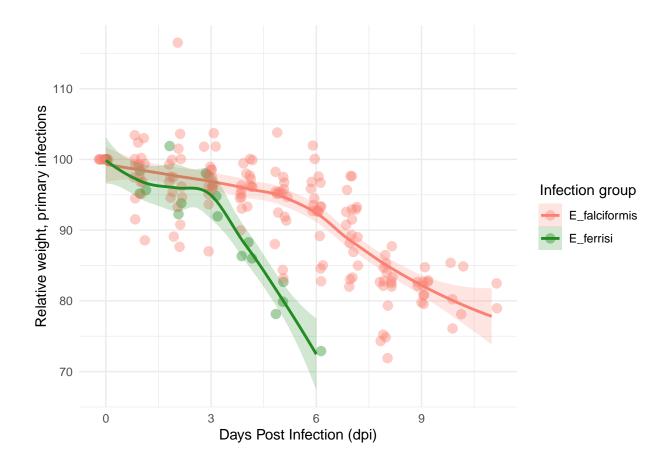


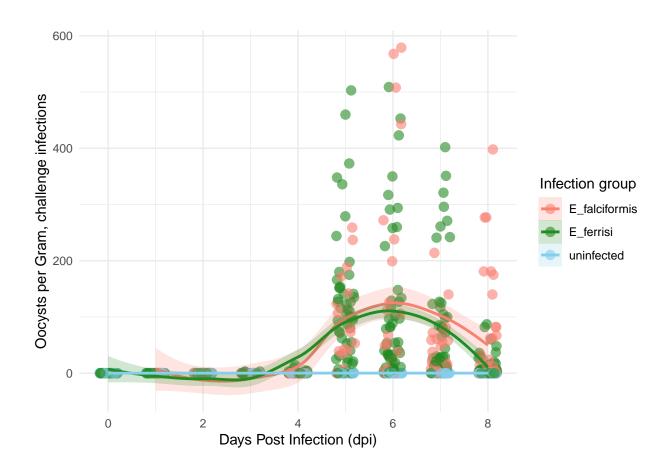


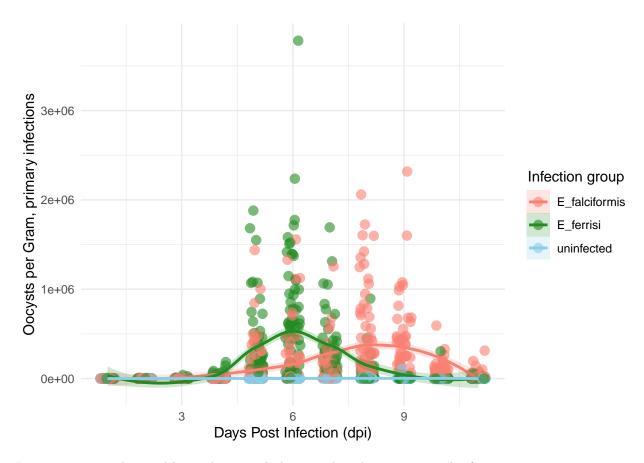
```
##
## Call:
## lm(formula = WL_max ~ current_infection, data = lab)
## Residuals:
                 1Q
                     Median
                                   3Q
## -14.6407 -4.7977 -0.1096
                               5.2067 19.1025
## Coefficients:
##
                              Estimate Std. Error t value Pr(>|t|)
                                            1.018 14.384 < 2e-16 ***
## (Intercept)
                                14.641
## current_infectionE. ferrisi
                                -4.876
                                            1.448 -3.368 0.00099 ***
## current_infectionuninfected
                                -9.843
                                            1.424 -6.912 1.8e-10 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 6.828 on 133 degrees of freedom
## Multiple R-squared: 0.2643, Adjusted R-squared: 0.2533
## F-statistic: 23.9 on 2 and 133 DF, p-value: 1.361e-09
##
## lm(formula = WL_max ~ mouse_strain, data = lab)
## Residuals:
```

```
##
        Min
                  1Q
                       Median
##
  -15.4049
             -4.4243
                      -0.4518
                                 4.3301
                                        14.7010
##
  Coefficients:
##
##
                             Estimate Std. Error t value Pr(>|t|)
## (Intercept)
                                1.4337
                                           3.4788
                                                    0.412 0.680967
## mouse strainSTRA STRA
                                0.7698
                                           4.4911
                                                    0.171 0.864185
## mouse_strainPWD BUSNA
                                                    0.455 0.649893
                                2.4180
                                           5.3140
                                                    0.447 0.655563
## mouse_strainSTRA BUSNA
                                2.1998
                                           4.9198
## mouse_strainBUSNA PWD
                                2.6190
                                           6.0255
                                                    0.435 0.664575
                                                    0.810 0.419739
## mouse_strainBUSNA STRA
                                3.7786
                                           4.6673
## mouse_strainPWD SCHUNT
                                2.7512
                                           5.3140
                                                    0.518 0.605575
## mouse_strainBUSNA BUSNA
                                2.8474
                                           4.9198
                                                    0.579 0.563809
                                           4.9198
## mouse_strainSTRA SCHUNT
                                3.6208
                                                    0.736 0.463151
## mouse_strainNMRI
                                7.8072
                                           3.7368
                                                    2.089 0.038746 *
## mouse_strainSCHUNT SCHUNT
                                8.6346
                                           3.6620
                                                    2.358 0.019957 *
                                9.5383
                                           5.3140
                                                    1.795 0.075117
## mouse_strainSCHUNT STRA
  mouse_strainPWD PWD
                               13.9712
                                           3.6722
                                                    3.805 0.000223 ***
##
                     '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## Signif. codes:
##
## Residual standard error: 6.958 on 123 degrees of freedom
## Multiple R-squared: 0.2935, Adjusted R-squared: 0.2246
## F-statistic: 4.259 on 12 and 123 DF, p-value: 1.298e-05
```

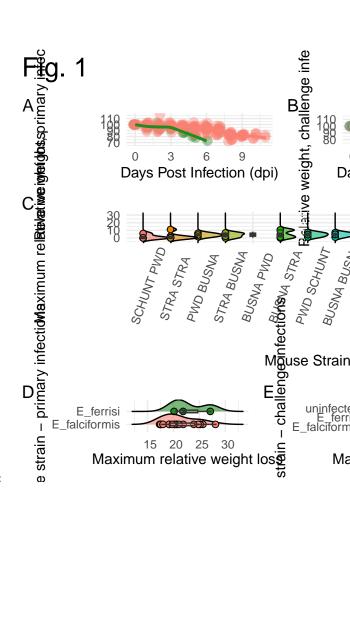








I am trying to understand here what exactly happened in the experimental infections.



Here is my original suggestion of a plot for the experimental design: