Final Overcompensation Stats

Team Rabbit

2022-4-7

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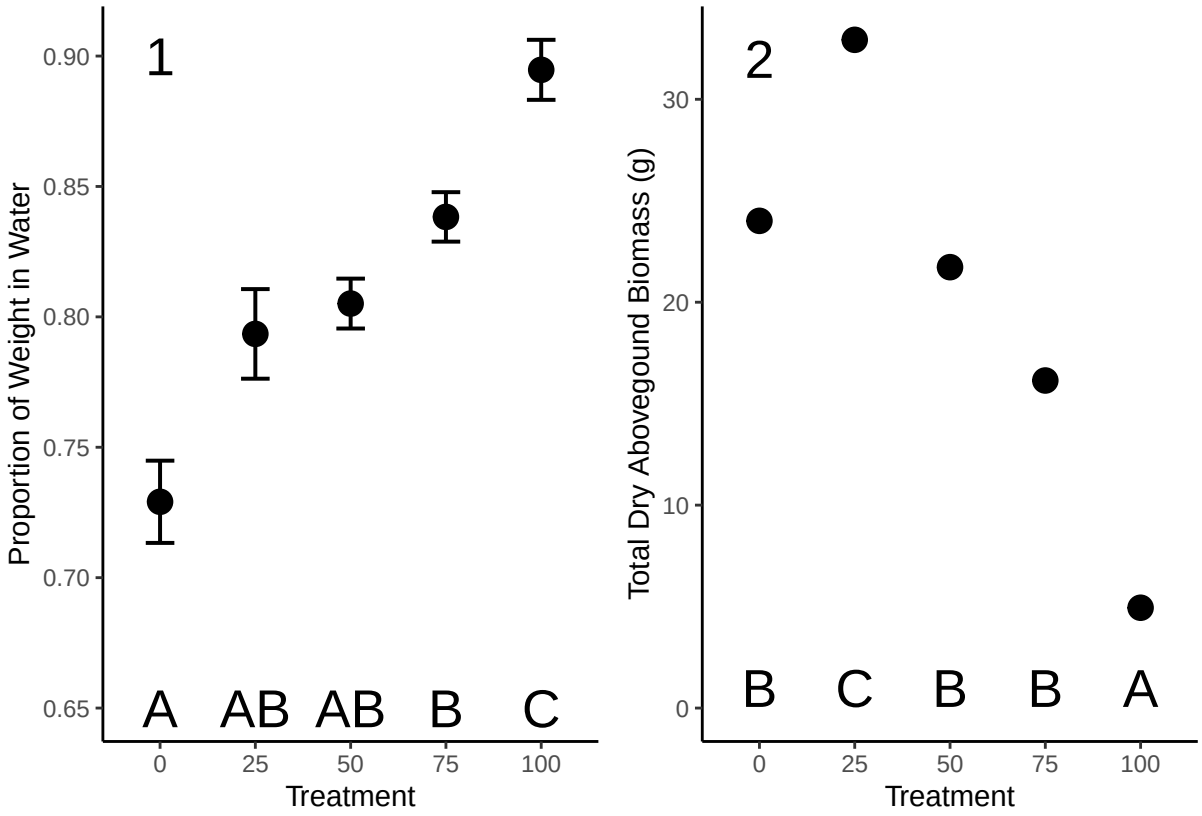
Final plots

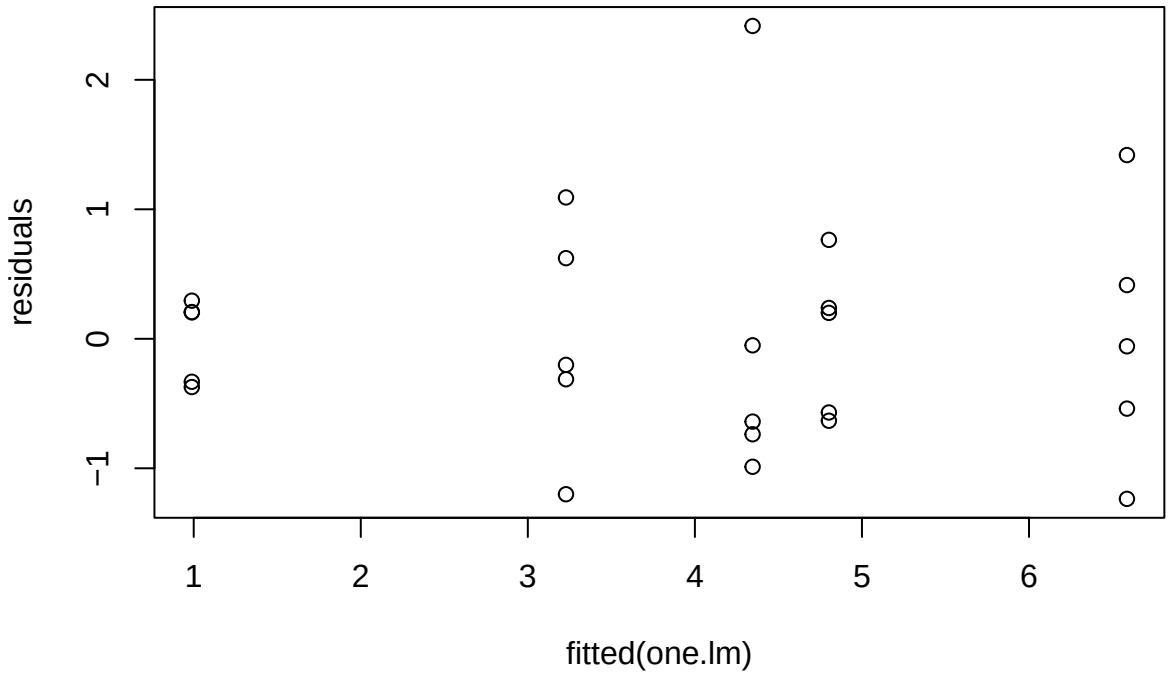


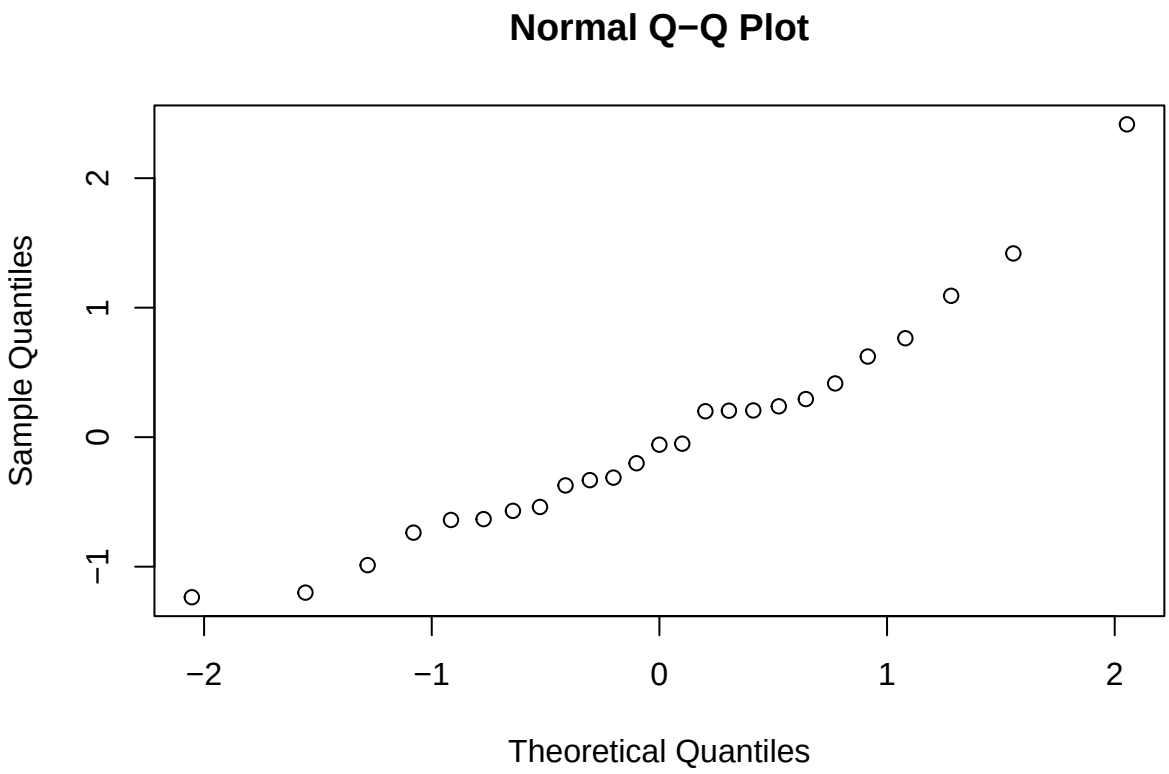
Stats for Total Biomass

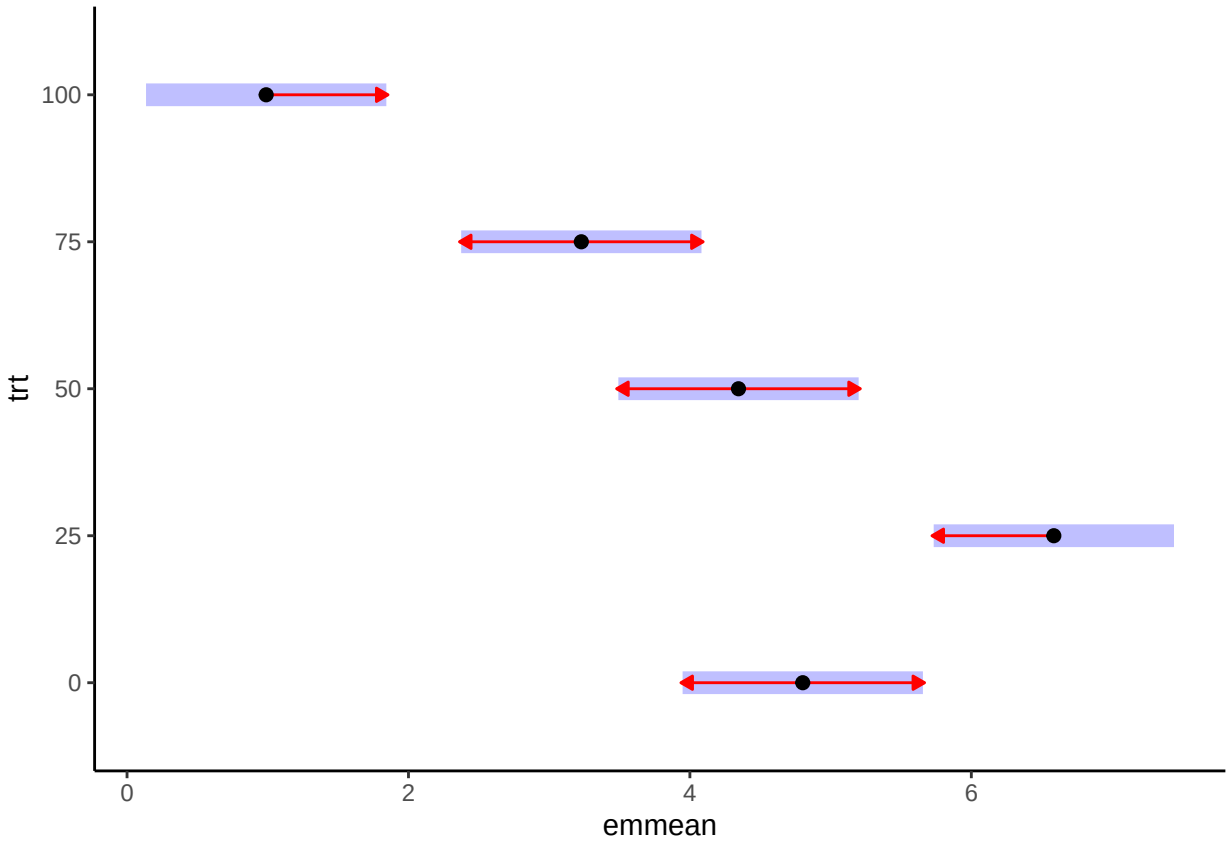
```
##           Model df      AIC      BIC    logLik   Test      L.Ratio p-value
## rand.lm       1  7 75.26703 82.23716 -30.63352
## norand.lm     2  6 73.26703 79.24143 -30.63352 1 vs 2 2.842171e-14       1
```

```
## Analysis of Deviance Table (Type III tests)
##
## Response: total_above_dry
##             Df  Chisq Pr(>Chisq)
## (Intercept)  1 137.61  < 2.2e-16 ***
## trt          4 102.12  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: total_above_dry
##           Df Sum Sq Mean Sq F value    Pr(>F)
## trt        4 85.566 21.3914   25.53 1.299e-07 ***
## Residuals 20 16.758  0.8379
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```




Normal Q−Q Plot
Sample Quantiles
Theoretical Quantiles
−2
−1
0
1
2
−1
0
1
2




```
##  contrast estimate    SE df t.ratio p.value
##  0 - 25     -1.784 0.579 20  -3.082  0.0588
##  0 - 50      0.457 0.579 20   0.789  1.0000
##  0 - 75      1.574 0.579 20   2.718  0.1324
##  0 - 100     3.813 0.579 20   6.587  <.0001
##  25 - 50     2.241 0.579 20   3.871  0.0095
##  25 - 75     3.358 0.579 20   5.800  0.0001
##  25 - 100    5.597 0.579 20   9.669  <.0001
##  50 - 75     1.117 0.579 20   1.929  0.6798
##  50 - 100    3.357 0.579 20   5.798  0.0001
##  75 - 100    2.240 0.579 20   3.869  0.0096
##
## P value adjustment: bonferroni method for 10 tests
```

```
##  trt emmean    SE df lower.CL upper.CL .group
##  100  0.989 0.409 20    0.135     1.84  a
##  75   3.228 0.409 20    2.374     4.08   b
##  50   4.345 0.409 20    3.491     5.20   b
##  0    4.802 0.409 20    3.948     5.66   b
##  25   6.586 0.409 20    5.732     7.44    c
##
## Confidence level used: 0.95
## P value adjustment: tukey method for comparing a family of 5 estimates
## significance level used: alpha = 0.05
## NOTE: Compact letter displays can be misleading
```

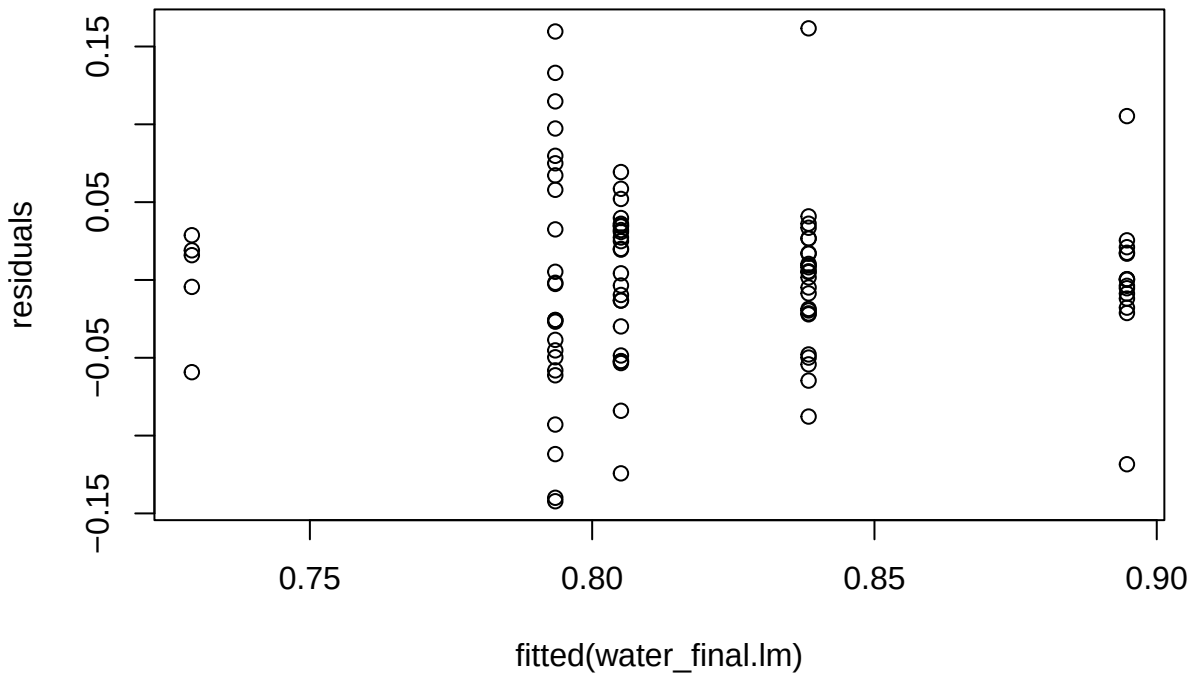
```
##       because they show NON-findings rather than findings.
##       Consider using 'pairs()', 'pwpp()', or 'pwpm()' instead.
```

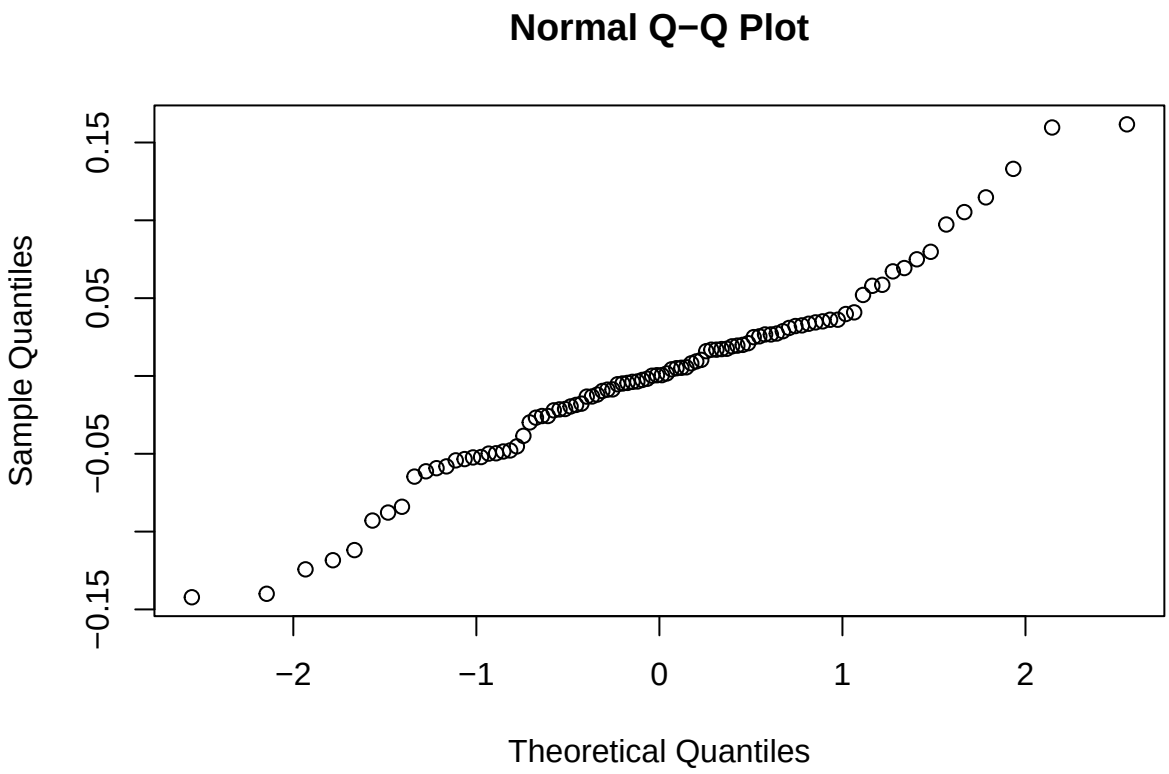
Stats for Water Ratio

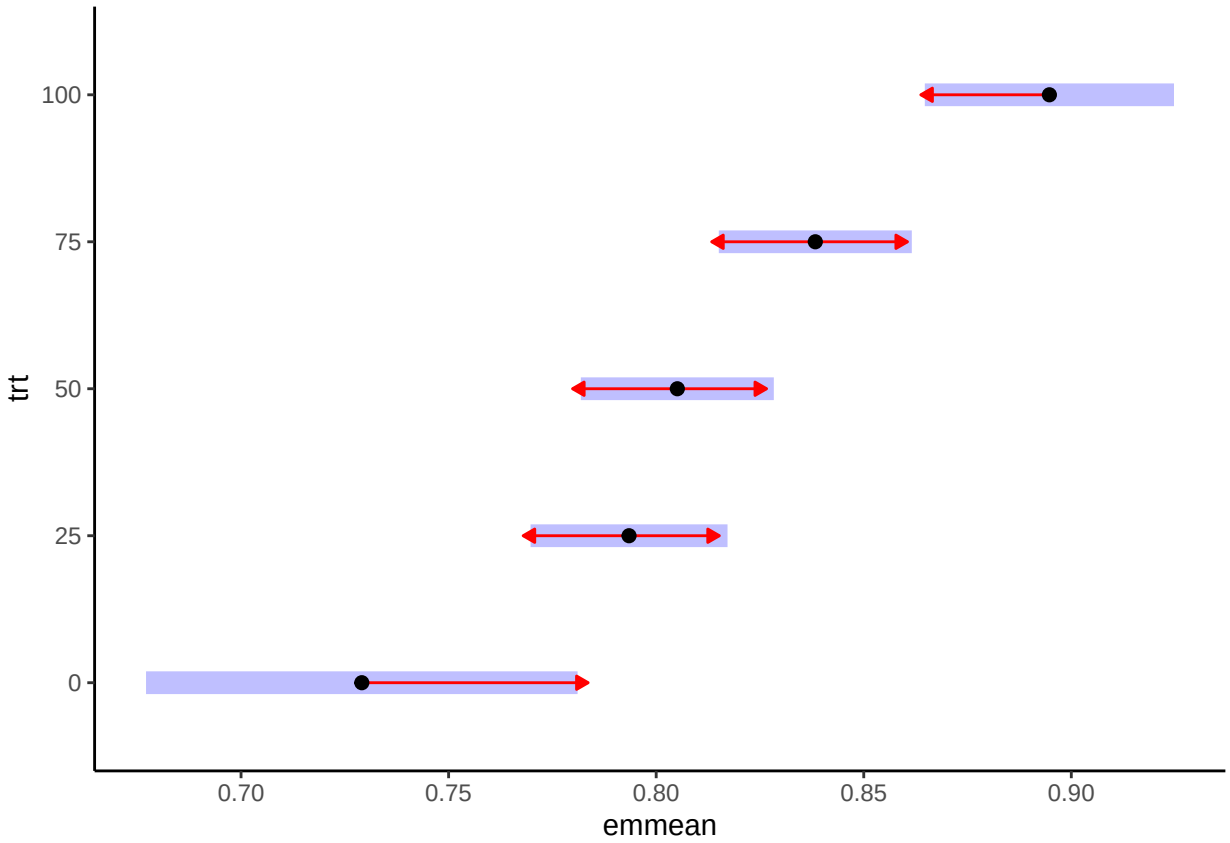
```
##                 Model df       AIC       BIC   logLik   Test      L.Ratio
## water_rand.lm       1  7 -224.7968 -207.3763 119.3984
## water_norand.lm     2  6 -226.7968 -211.8649 119.3984 1 vs 2 9.970165e-09
##                 p-value
## water_rand.lm
## water_norand.lm  0.9999
```

```
## Analysis of Deviance Table (Type III tests)
##
## Response: water_ratio
##             Df   Chisq Pr(>Chisq)
## (Intercept)  1 776.709  < 2.2e-16 ***
## trt          4  45.523  3.095e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: water_ratio
##           Df  Sum Sq  Mean Sq F value    Pr(>F)
## trt        4 0.15578 0.038945  11.381 1.668e-07 ***
## Residuals 89 0.30456 0.003422
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```


residuals
0.15
0.05
−0.05
−0.15
0.75
0.80
0.85
0.90
fitted(water_final.lm)


Normal Q−Q Plot
Sample Quantiles
Theoretical Quantiles
0.15
0.05
−0.05
−0.15
−2
−1
0
1
2




```
##  contrast estimate     SE df t.ratio p.value
##  0 - 25    -0.0644 0.0288 89  -2.239  0.2768
##  0 - 50    -0.0760 0.0287 89  -2.652  0.0947
##  0 - 75    -0.1092 0.0287 89  -3.812  0.0025
##  0 - 100   -0.1656 0.0302 89  -5.483  <.0001
##  25 - 50   -0.0116 0.0167 89  -0.696  1.0000
##  25 - 75   -0.0449 0.0167 89  -2.684  0.0868
##  25 - 100  -0.1013 0.0193 89  -5.259  <.0001
##  50 - 75   -0.0332 0.0165 89  -2.009  0.4761
##  50 - 100  -0.0896 0.0191 89  -4.691  0.0001
##  75 - 100  -0.0564 0.0191 89  -2.952  0.0404
##
## P value adjustment: bonferroni method for 10 tests

##  trt emmean     SE df lower.CL upper.CL .group
##  0    0.729 0.0262 89    0.677    0.781  a
##  25   0.793 0.0119 89    0.770    0.817  ab
##  50   0.805 0.0117 89    0.782    0.828  ab
##  75   0.838 0.0117 89    0.815    0.862   b
##  100  0.895 0.0151 89    0.865    0.925    c
##
## Confidence level used: 0.95
## P value adjustment: tukey method for comparing a family of 5 estimates
## significance level used: alpha = 0.05
## NOTE: Compact letter displays can be misleading
```

```
##       because they show NON-findings rather than findings.
##       Consider using 'pairs()', 'pwpp()', or 'pwpm()' instead.
```