

# Teacher's R correction

## Legends

Red or pink: R commands

Pink commands are not necessary (bad routes)

**Bold highlighted**: Values to input

**Bold but not highlighted**: Values to input but bad route

Grey: Bad routes

# Green: Inactive remarks

## Key values

**1322.1**                      **1566**

**1.04**

**0.5797**

**281.91**

**0.81**

W = 113710, p-value < 2.2e-16

W = 0.84725, p-value < 2.2e-16

W = 0.88015, p-value < 2.2e-16

## R commands and outputs

```
> ##### STATISTICS
>
> library(effectsize)
Message d'avis :
le package 'effectsize' a été compilé avec la version R 4.1.2
>
>
> Ferti = read.table("Fertilizer.txt", h=T, stringsAsFactors=TRUE)
>
> # RANK COMPARISON
> wilcox.test(Ferti$Weight[1:1000], Ferti$Weight[1001:2000])
```

Wilcoxon rank sum test with continuity correction

```
data: Ferti$Weight[1:1000] and Ferti$Weight[1001:2000]
W = 113710, p-value < 2.2e-16
alternative hypothesis: true location shift is not equal to 0
```

```

>
> # TEST FOR NORMALITY
> shapiro.test(Ferti$Weight[1:1000])

      Shapiro-Wilk normality test

data:  Ferti$Weight[1:1000]
W = 0.84725, p-value < 2.2e-16

> shapiro.test(Ferti$Weight[1001:2000])

      Shapiro-Wilk normality test

data:  Ferti$Weight[1001:2000]
W = 0.88015, p-value < 2.2e-16
>

> # MEAN COMPARISON
> t.test(Ferti$Weight[1:1000], Ferti$Weight[1001:2000])

      Welch Two Sample t-test

data:  Ferti$Weight[1:1000] and Ferti$Weight[1001:2000]
t = -19.986, df = 1322.1, p-value < 2.2e-16
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.1906431 -0.1565620
sample estimates:
mean of x mean of y
 1.453959  1.627561

> t.test(Ferti$Weight[1:1000], Ferti$Weight[1001:2000],
var.equal=TRUE)

      Two Sample t-test

data:  Ferti$Weight[1:1000] and Ferti$Weight[1001:2000]
t = -20.091, df = 1566, p-value < 2.2e-16
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.1905514 -0.1566537
sample estimates:
mean of x mean of y
 1.453959  1.627561
>
> # MEAN WEIGHT effect size
> cohens_d(Ferti$Weight, Ferti$Group)
Cohen's d | 95% CI
-----|-----
-1.04 | [-1.14, -0.93]

- Estimated using pooled SD.> hedges_g(Ferti$Weight, Ferti$Group)
Hedges' g | 95% CI
-----|-----
-1.03 | [-1.14, -0.93]

```

```

- Estimated using pooled SD.> glass_delta(Ferti$Weight, Ferti$Group)
Glass' delta |          95% CI
-----
-1.05        | [-1.16, -0.93]
>
> # SAMPLE SIZES
> table(Ferti$Group, Ferti$Survival)

      Alive Dead
Control   629  371
MagicGrow  939   61
>
> # Comparison of proportion of harvested non treated plants with
62% theoretic
> prop.test(629, 1000, 0.62)

1-sample proportions test with continuity correction

data:  629 out of 1000, null probability 0.62
X-squared = 0.30666, df = 1, p-value = 0.5797
alternative hypothesis: true p is not equal to 0.62
95 percent confidence interval:
 0.5981127 0.6588835
sample estimates:
      p
0.629

> # Comparison of proportion of harvested non treated with MagicGrow
treated plants
> prop.test(c(629, 939), c(1000, 1000))

2-sample test for equality of proportions with continuity
correction

data:  c(629, 939) out of c(1000, 1000)
X-squared = 281.91, df = 1, p-value < 2.2e-16
alternative hypothesis: two.sided
95 percent confidence interval:
 -0.3444137 -0.2755863
sample estimates:
prop 1 prop 2
 0.629  0.939
>
> # PROPORTIONS SURVIVORS effect size
> cohens_h(Ferti$Survival, Ferti$Group)
Cohen's h |          95% CI
-----
-0.81      | [-0.90, -0.72]

```