clase-2.R

Usuario1

2019-08-08

```
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# importar datos de vivero ------------------------------------------------

vivero <- read.csv("C:/Maestria/vivero.csv", header = T)
head(vivero)
```
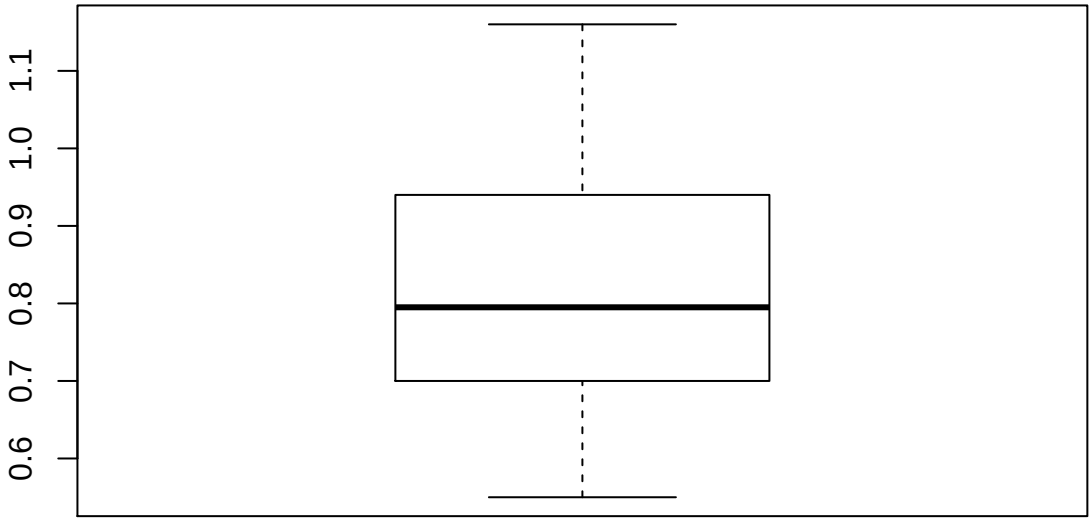

```
##   planta   IE Tratamiento
## 1      1 0.80        Ctrl
## 2      2 0.66        Ctrl
## 3      3 0.65        Ctrl
## 4      4 0.87        Ctrl
## 5      5 0.63        Ctrl
## 6      6 0.94        Ctrl
```

```
summary(vivero)
```

```
##      planta            IE         Tratamiento
##  Min.   : 1.00   Min.   :0.5500   Ctrl:21
##  1st Qu.:11.25   1st Qu.:0.7025   Fert:21
##  Median :21.50   Median :0.7950
##  Mean   :21.50   Mean   :0.8371
##  3rd Qu.:31.75   3rd Qu.:0.9375
##  Max.   :42.00   Max.   :1.1600
```

```
# prueba de t una muestra  ------------------------------------------------
par(mfrow=c(1,1))
boxplot(vivero$IE)
```




```r
t.test(vivero$IE, mu = 0.85)
```

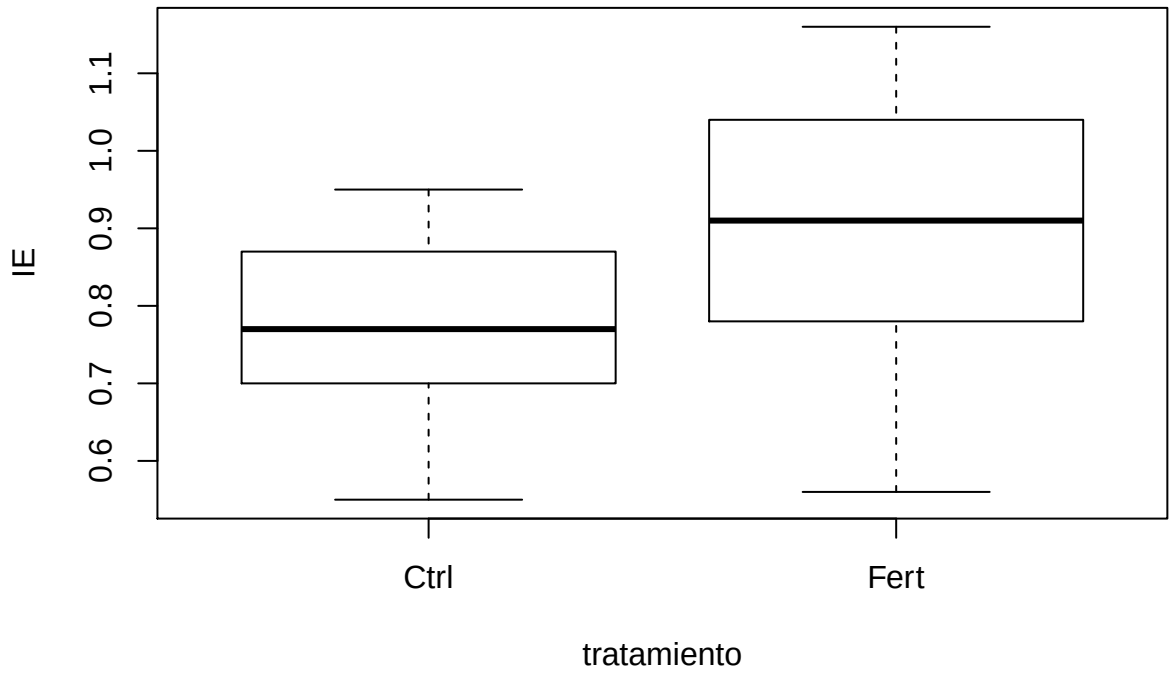
```
##
##  One Sample t-test
##
## data:  vivero$IE
## t = -0.5049, df = 41, p-value = 0.6163
## alternative hypothesis: true mean is not equal to 0.85
## 95 percent confidence interval:
##  0.7857153 0.8885704
## sample estimates:
## mean of x
## 0.8371429
```

```r
# La media observada no es diferente estadisticamente
# ya que el valor de p es mayor que el valor
# el alfa establecido de (0.05), ademas de la media teoretica se
# encuentra dentro del rango de los valores de intervalos de confianza.

t.test(vivero$IE, mu = 0.90)
```

```
##
##  One Sample t-test
##
## data:  vivero$IE
## t = -2.4684, df = 41, p-value = 0.01783
## alternative hypothesis: true mean is not equal to 0.9
```

```
## 95 percent confidence interval:
##  0.7857153 0.8885704
## sample estimates:
## mean of x
## 0.8371429
```

```
# La media observada es diferente a la media teorica, por lo que eceptamos
# la hi. 1 es valor de p (0.01)es menor que el alfa establecido (0.05)



# Prueba de muestras independientes  ------------------------------------

boxplot(vivero$IE ~ vivero$Tratamiento, Col= "green", xlab = "tratamiento",
        ylab = "IE")
```




```
shapiro.test(vivero$IE)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  vivero$IE
## W = 0.96225, p-value = 0.1777
```

```
var.test(vivero$IE ~ vivero$Tratamiento)
```

```
##
##  F test to compare two variances
```

```
##
## data:  vivero$IE by vivero$Tratamiento
## F = 0.41068, num df = 20, denom df = 20, p-value = 0.05304
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.1666376 1.0121038
## sample estimates:
## ratio of variances
##          0.4106757
```

```
# las varianza de ambos tratamientos son iguales segun el el valor P
# el cual se obtuvo mediante una prueba de vairanza

t.test(vivero$IE ~ vivero$Tratamiento, var.equal =T)
```

```
##
##  Two Sample t-test
##
## data:  vivero$IE by vivero$Tratamiento
## t = -2.9813, df = 40, p-value = 0.004868
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.23331192 -0.04478332
## sample estimates:
## mean in group Ctrl mean in group Fert
##          0.7676190          0.9066667
```

```
# existe una diferencia significativa entre el indice de esveltes
#de las plantulas fertilizadas
# el valor de la prueba p comprueva nuestra hipotesis de que el fertilizante "power", mejora el IE
t.test(vivero$IE ~ vivero$Tratamiento)
```

```
##
##  Welch Two Sample t-test
##
## data:  vivero$IE by vivero$Tratamiento
## t = -2.9813, df = 34.056, p-value = 0.00527
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.23382707 -0.04426816
## sample estimates:
## mean in group Ctrl mean in group Fert
##          0.7676190          0.9066667
```

```
# Pruebas de t muestras dependientes  ------------------------------------

t.test(vivero$IE ~ vivero$Tratamiento, paired = T)
```

```
##
##  Paired t-test
##
## data:  vivero$IE by vivero$Tratamiento
## t = -3.0736, df = 20, p-value = 0.005993
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.23341577 -0.04467947
```

```
## sample estimates:
## mean of the differences
##              -0.1390476
```

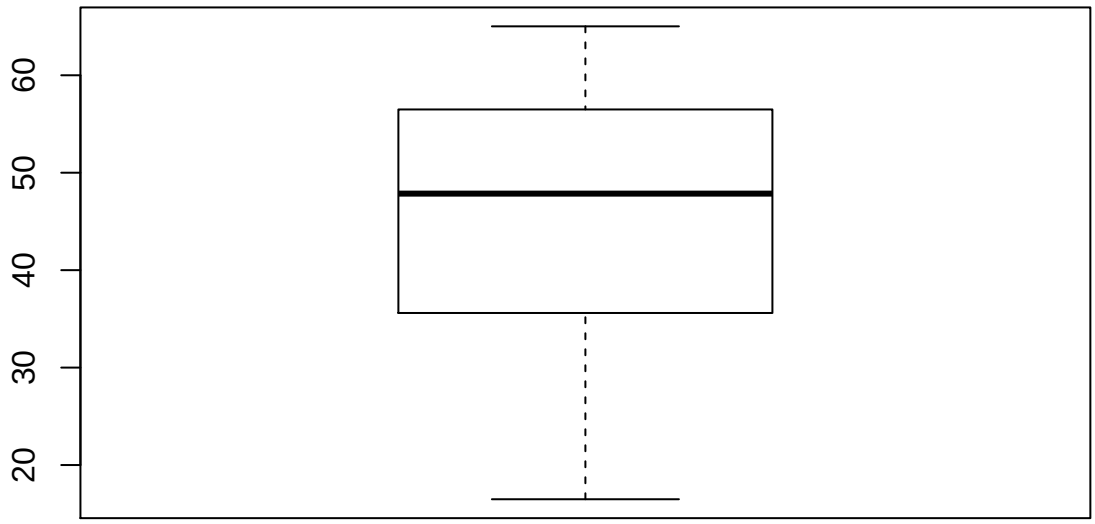
```
# inventario de produccion ------------------------------------------------

produccion <- read.csv("C:/Maestria/produccion.csv")
summary(produccion)
```

```
##    Tiempo       Kgsem           BioRama           Germ
##  T2012:50   Min.   : 1.220   Min.   :44.54   Min.   :16.49
##  T2013:50   1st Qu.: 8.492   1st Qu.:49.84   1st Qu.:35.61
##             Median :10.245   Median :53.96   Median :47.85
##             Mean   :10.501   Mean   :54.91   Mean   :45.83
##             3rd Qu.:12.955   3rd Qu.:60.64   3rd Qu.:56.30
##             Max.   :16.540   Max.   :65.24   Max.   :65.02
##        H6
##  Min.   :-0.07
##  1st Qu.:14.16
##  Median :16.56
##  Mean   :16.94
##  3rd Qu.:21.24
##  Max.   :29.71
```

```
t.test(produccion$Germ ~ produccion$Tiempo, paired = T)
```

```
##
##  Paired t-test
##
## data:  produccion$Germ by produccion$Tiempo
## t = -16.678, df = 49, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -23.14844 -18.16996
## sample estimates:
## mean of the differences
##                -20.6592
```

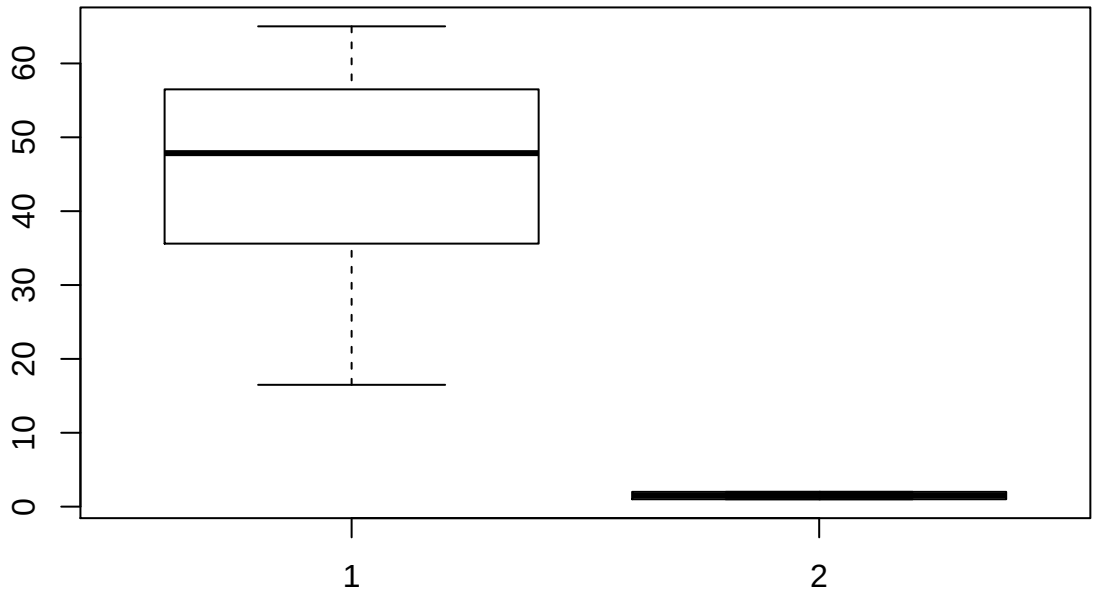
```
boxplot(produccion$Germ)
```




```
# restriccion  ------------------------------------------------------------

tapply(produccion$Germ, produccion$Tiempo, mean)
```

```
##   T2012   T2013
## 35.5036 56.1628
```

```
boxplot(produccion$Germ, produccion$Tiempo)
```




```
t.test(produccion$Germ ~ produccion$Tiempo, paired = T)
```

```
##
##  Paired t-test
##
## data:  produccion$Germ by produccion$Tiempo
## t = -16.678, df = 49, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -23.14844 -18.16996
## sample estimates:
## mean of the differences
##                -20.6592
```