

Clase_2.R

Usuario

2019-08-06

```
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# Clase 2
```

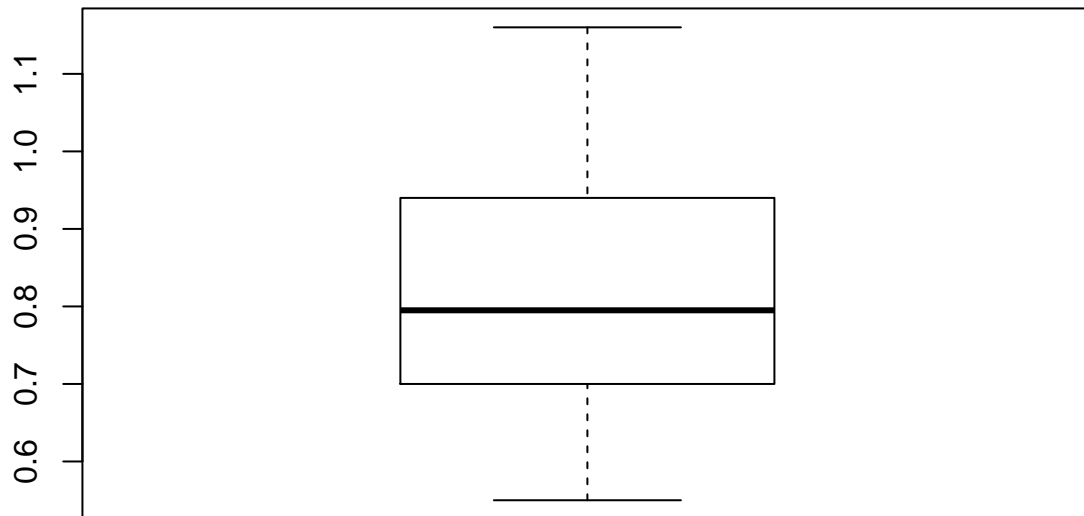
```
# Importar datos Excel -----
```

```
Tvivero <- read.csv("C:/MCF202-2019/MCF202/DATOS/Tvivero.csv", header = T)  
summary(Tvivero)
```

```
##      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 t una muestra -----
```

```
par(mfrow=c(1,1))  
boxplot(Tvivero$IE)
```



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

```
##
## One Sample t-test
##
## data: Tvivero$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
```

*#la media observada no es diferente estadísticamente ya que el valor
de p es mayor que el alfa establecido (0.05). Además la media-teorética se
#encuentra dentro del rango de los valores de intervalos de confianza.*

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

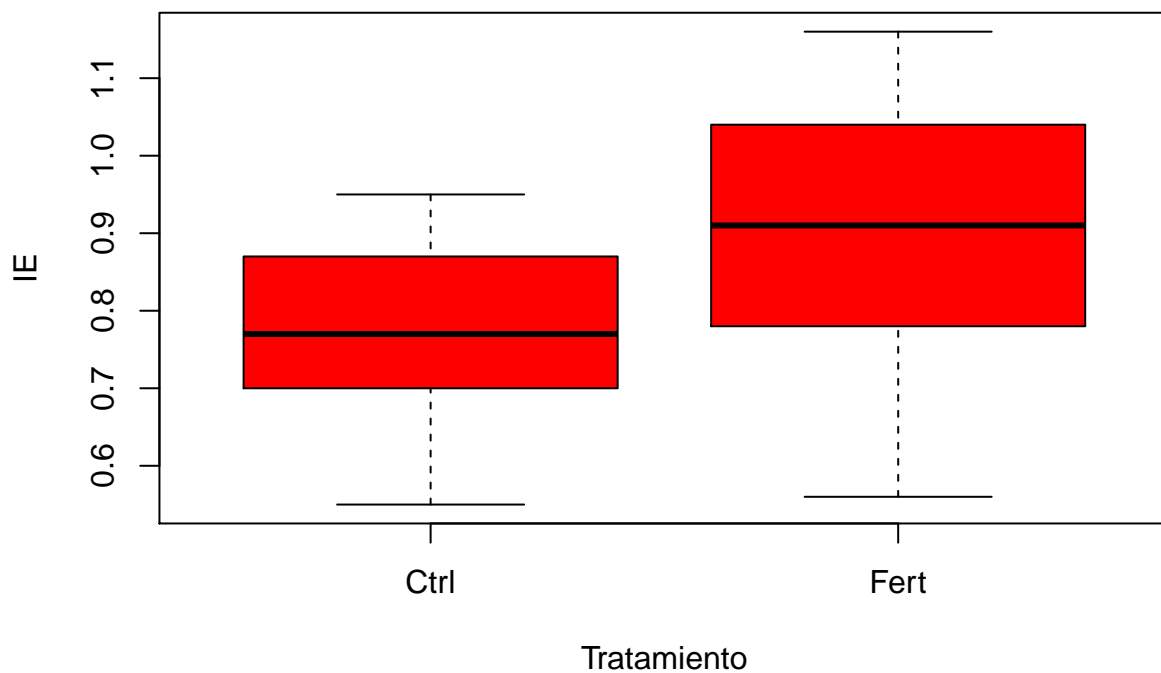
```
##
## One Sample t-test
##
## data: Tvivero$IE
## t = -2.4684, df = 41, p-value = 0.01783
## alternative hypothesis: true mean is not equal to 0.9
## 95 percent confidence interval:
```

```
## 0.7857153 0.8885704
## sample estimates:
## mean of x
## 0.8371429
```

```
# La media observada estadísticamente es diferente a la media teórica
# por lo cual aceptamos la hipótesis H1 con valor de p (0.01)
# es menor ue el valor de alfa establecido (0.05)
```

```
# Prueba t student independiente -----
```

```
boxplot(Tvivero$IE ~ Tvivero$Tratamiento, col = "red",
        xlab = "Tratamiento",
        ylab = "IE")
```



```
# Prueba para ver si hay varianza igual -----
```

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

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

```
# Prueba de Varianza -----
```

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

```
##  
## F test to compare two variances  
##  
## data: Tvivero$IE by Tvivero$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
```

```
#La varianza de ambos tratamientos son iguales así lo prueba el valor de p  
#obtenido mediante una prueba de varianza
```

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

```
##  
## Two Sample t-test  
##  
## data: Tvivero$IE by Tvivero$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
```

```
#Se rechaza la H0 se acepta la H1 ya que el valor de p (0.004)  
#es menor a 0.05 significando que si influye en el IE en las plantas
```

```
t.test(Tvivero$IE ~ Tvivero$Tratamiento)
```

```
##  
## Welch Two Sample t-test  
##  
## data: Tvivero$IE by Tvivero$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
```

```
# Prueba de t muestras dependientes -----
```

```
# paired es para diferente tiempo
```

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

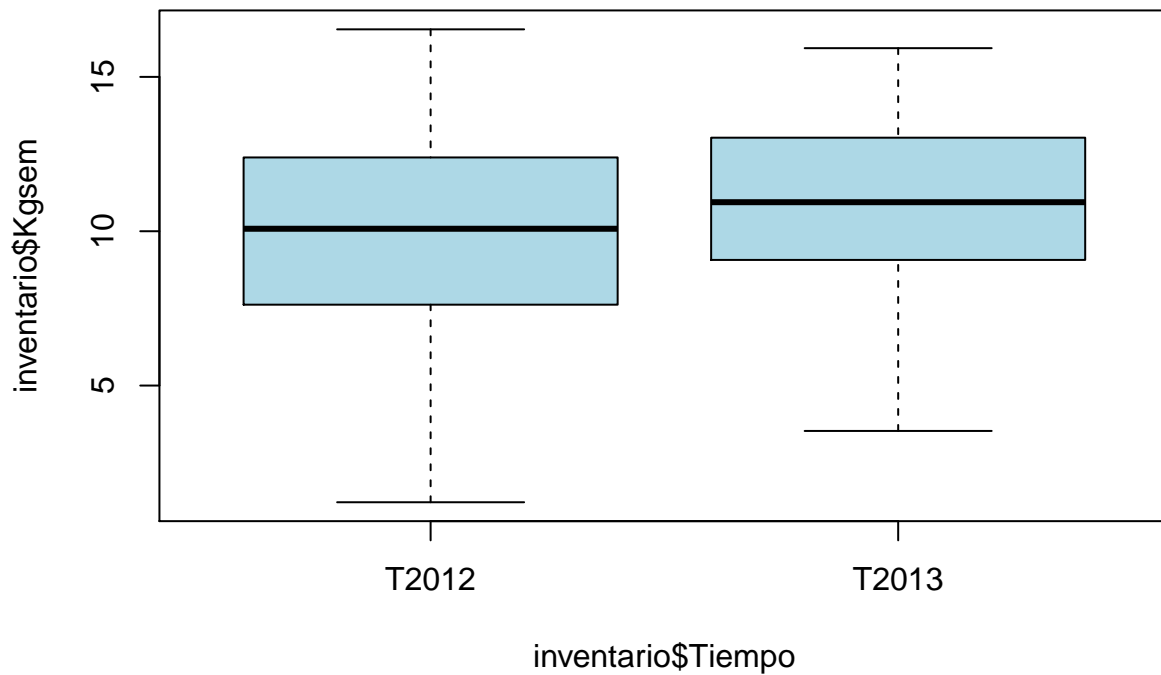
```
##
## Paired t-test
##
## data: Tvivero$IE by Tvivero$Tratamiento
## t = -3.0736, df = 20, p-value = 0.005993
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
## -0.23341577 -0.04467947
## sample estimates:
## mean of the differences
## -0.1390476
```

```
# Ejercicio de Producción -----
```

```
inventario <- read.csv("C:/MCF202-2019/MCF202/DATOS/produccion.csv", header = T)
summary(inventario)
```

```
##      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
```

```
boxplot(inventario$Kgsem ~ inventario$Tiempo, col="lightblue")
```



```
t.test(inventario$Kgsem ~ inventario$Tiempo, paired = T)
```

```
##
## Paired t-test
##
## data: inventario$Kgsem by inventario$Tiempo
## t = -1.2538, df = 49, p-value = 0.2159
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
## -2.0530953 0.4754953
## sample estimates:
## mean of the differences
## -0.7888
```

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

```
##
## Paired t-test
##
## data: inventario$Germ by inventario$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(inventario$Germ ~ inventario$Tiempo, col= "lightgreen")
```

```
# RESTRICCIÓN -----
```

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

```
##    T2012    T2013
```

```
## 35.5036 56.1628
```

```
boxplot(inventario$Germ ~ inventario$Tiempo, col= "lightgreen")
```

