

Clase_2R.R

Usuario

2019-08-07

```
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#Clase_2
```

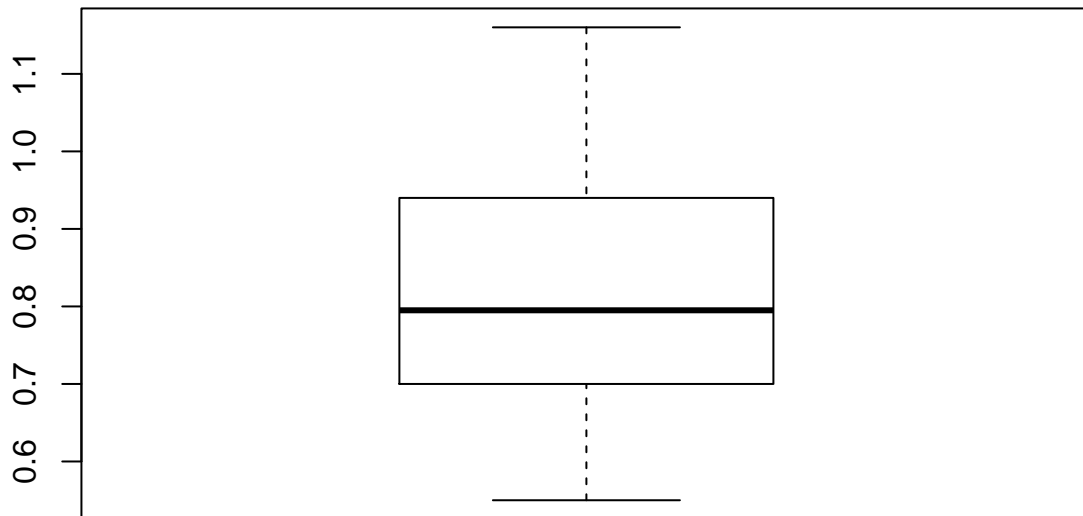
```
# Importar datos vivero -----
```

```
vivero <- read.csv("C:/MCF202-2019/MCF202/Datos/tvivero.csv", header = T)  
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)
```



```
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
```

*#la media ibservada no es diferente estadisticamente ya que el valor de p
#es mayor que le alfa establecido (0.05). Ademas la media teoretica se
#encuentra dentro del rango de los valores del intervalo de confianza.*

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

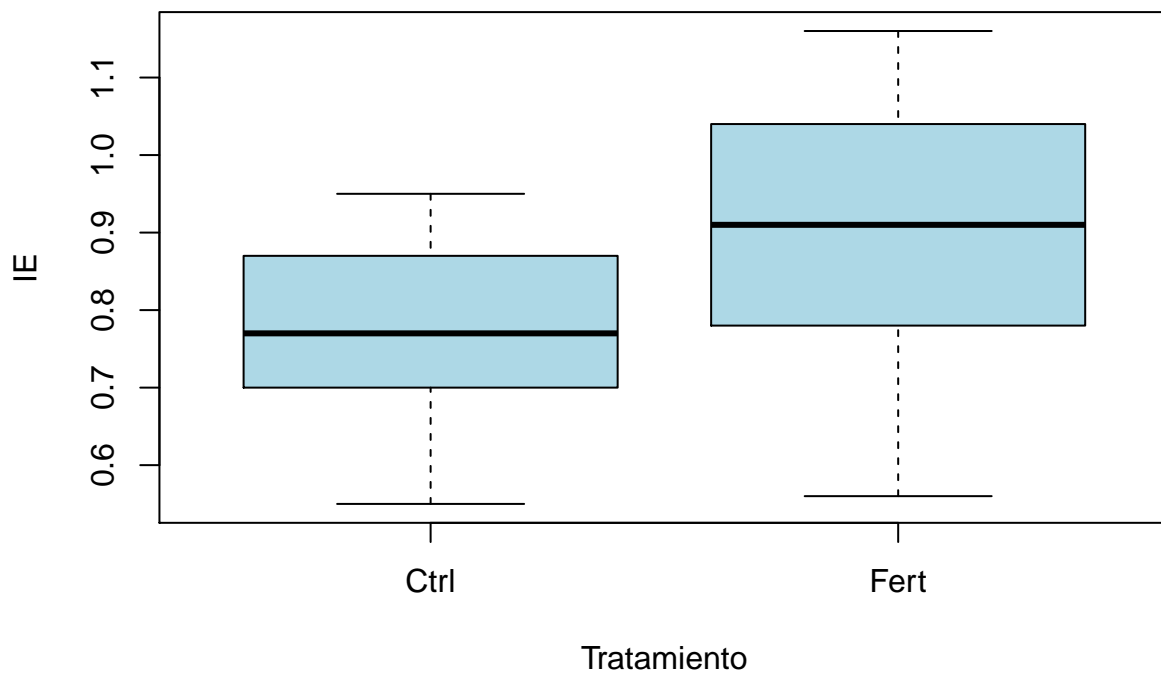
```
##
## One Sample t-test
##
## data: vivero$IE
## t = -2.4684, df = 41, p-value = 0.01783
## alternative hypothesis: true mean is not equal to 0.9
## 95 percent confidence interval:
```

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

*#la media observada es diferente a la media teorica por lo cual aceptamos
#la H1. El valor de p (0.01) es menor que el valor alfa establecido (0.05)*

pruebas de t muestras independientes -----

```
boxplot(vivero$IE ~ vivero$Tratamiento, col= "lightblue", 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 varianzas de ambos tratamientos son iguales asi lo prueba el valor de p
#obtenido mediante una prueba de varianzas (var.test).

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

#El valor de p no existe una diferencia significativa entre el IE de las plantulas fertilizadas
#El valor de p comprueba 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

# Prueba de t muestras dependientes -----

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

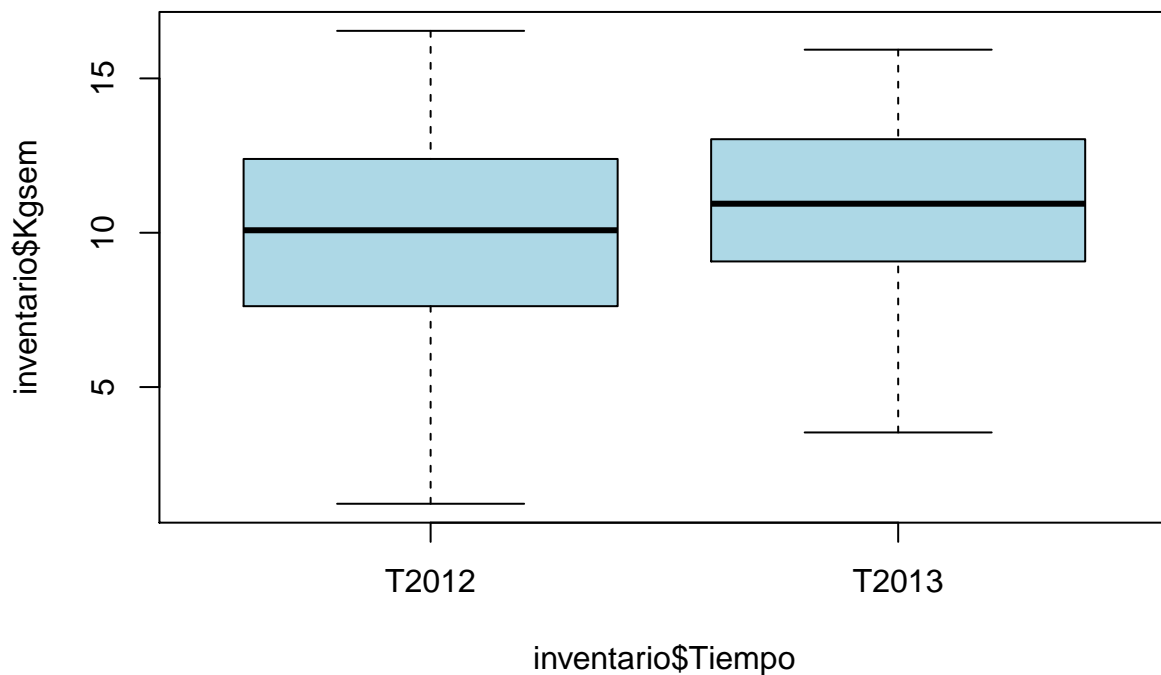
##
## Paired t-test
##
## data: vivero$IE by vivero$Tratamiento
## t = -3.0736, df = 20, p-value = 0.005993
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
## -0.23341577 -0.04467947
## sample estimates:
```

```
## mean of the differences
## -0.1390476
```

```
inventario <- read.csv("C:/MCF202-2019/MCF202/Datos/produccion.csv")
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")
```



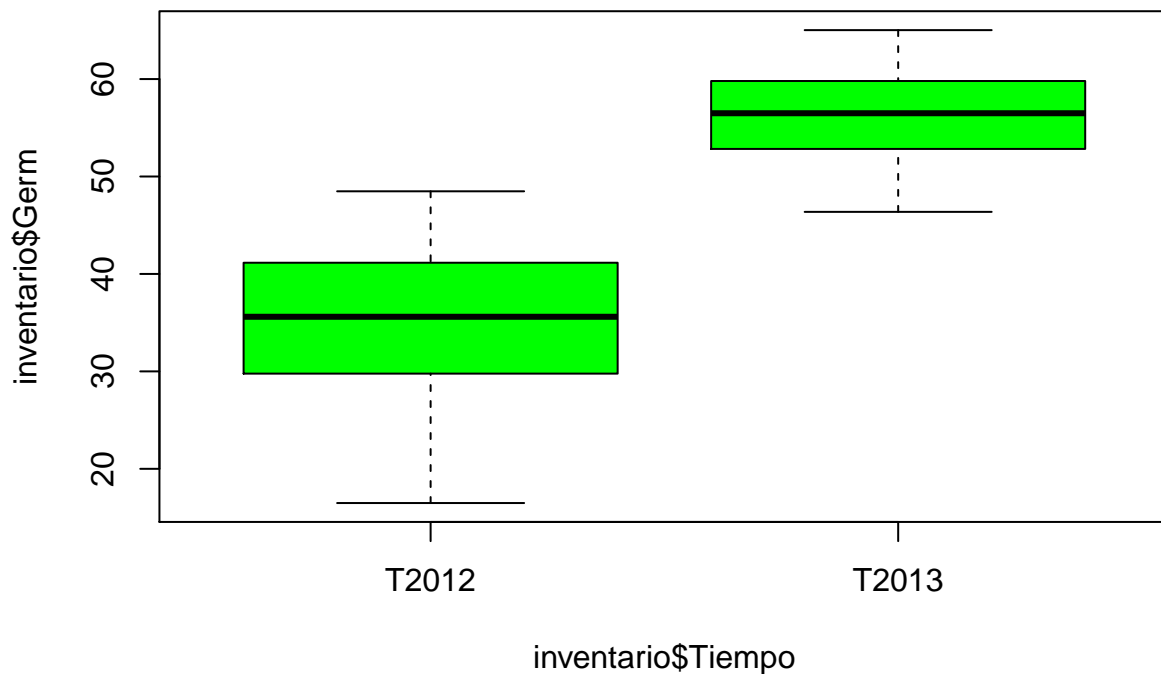
```
t.test(inventario$Kgsem ~ inventario$Tiempo, paired=T)
```

```
##
## 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
```

#no hay diferencias significativas entre las graficas

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



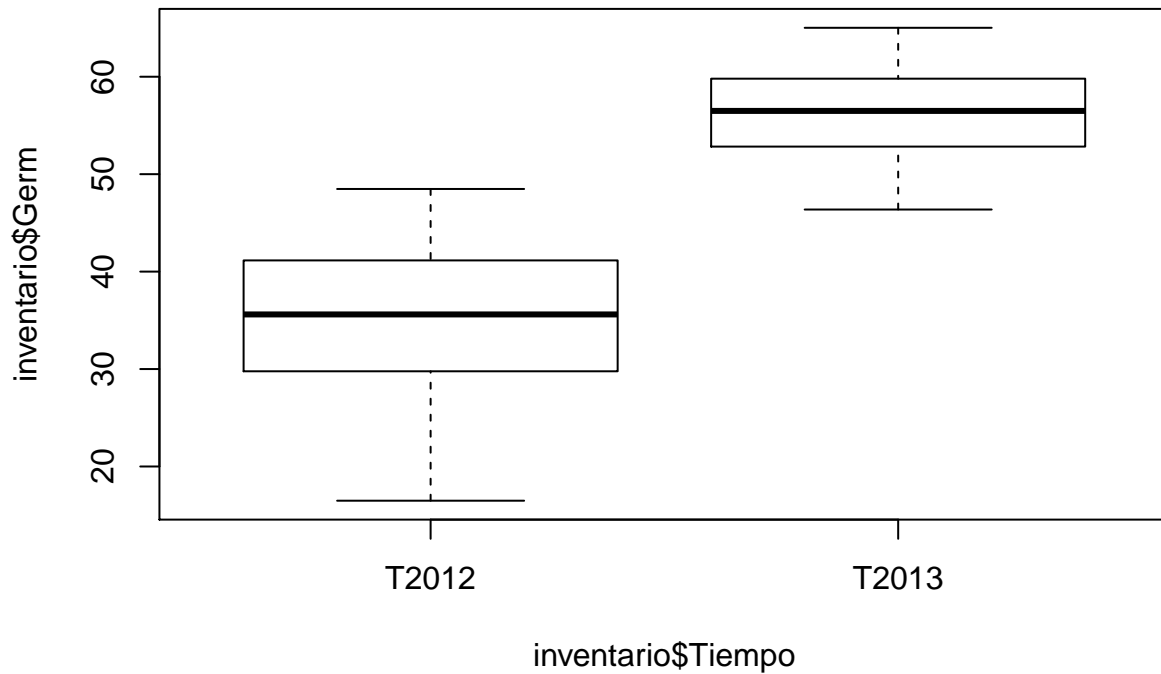
```
t.test(inventario$Germ ~ inventario$Tiempo, paired=T)
```

```
##
## 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
```

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

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

```
boxplot(inventario$Germ ~ inventario$Tiempo)
```



```
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
```