Clase-19.05.2021.R

maria

2021-05-22

```
# Maria de Jesus Ramirez Navejar
# Principios de Estadistica
# Fecha: 19.05.2021
# Prueba de t de dos muestras


prod <-
read.csv("https://raw.githubusercontent.com/MariaRamirez12/PRINCIPIOS_ESTADISTICA2021/main/mainproduccion1.csv")
head(prod)
```

```
##   ï..Tiempo Kgsem BioRama  Germ    H6
## 1     T2012 10.01   47.72 29.16 13.86
## 2     T2012 11.02   52.30 35.59 18.82
## 3     T2012 15.23   50.42 39.79 15.54
## 4     T2012  8.66   52.95 29.61 13.92
## 5     T2012  9.83   52.19 29.77  8.92
## 6     T2012 16.54   49.87 16.49  7.36
```

```
summary(prod)
```

```
##   ï..Tiempo            Kgsem           BioRama           Germ      
##  Length:100         Min.   : 1.220   Min.   :44.54   Min.   :16.49  
##  Class :character   1st Qu.: 8.492   1st Qu.:49.84   1st Qu.:35.61  
##  Mode  :character   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
```

```
prod$Tiempo <- factor(prod$ï..Tiempo)
summary(prod)
```

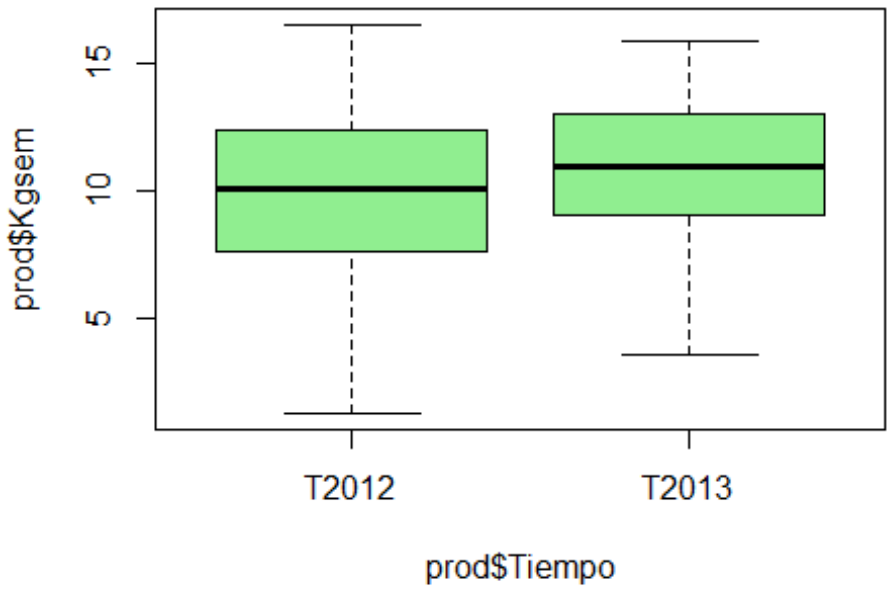
```
##   ï..Tiempo            Kgsem           BioRama           Germ      
##  Length:100         Min.   : 1.220   Min.   :44.54   Min.   :16.49  
##  Class :character   1st Qu.: 8.492   1st Qu.:49.84   1st Qu.:35.61  
##  Mode  :character   Median :10.245   Median :53.96   Median :47.85
```

```
##                     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          Tiempo
##  Min.   :-0.07   T2012:50
##  1st Qu.:14.16   T2013:50
##  Median :16.56
##  Mean   :16.94
##  3rd Qu.:21.24
##  Max.   :29.71

is.factor(prod$Tiempo)

## [1] TRUE

boxplot(prod$Kgsem ~ prod$Tiempo, col = "lightgreen")
```




```
# Preguntas de investigacion
# Estamos interesados en conocer si la produccion en Kg de semilla de los
individuos de pinos es diferente en el
# año 2012 y 2013

# Hipotesis nula (H0): No exixte diferencia entre la prod. en Kg de los años
2012 y 2013
# Hipotesis alternatica (H1): Existe difernecia entre la prod. en Kg de los
años 2012 y 2013
```

```r
# Revisar la normalidad

shapiro.test(prod$Kgsem)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  prod$Kgsem
## W = 0.98465, p-value = 0.2996
```

```r
# revisar la homegeneidad de varianzas

var.test(prod$Kgsem ~ prod$Tiempo)
```

```
##
##  F test to compare two variances
##
## data:  prod$Kgsem by prod$Tiempo
## F = 1.3498, num df = 49, denom df = 49, p-value = 0.2972
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.7659594 2.3785403
## sample estimates:
## ratio of variances
##           1.349765
```

```r
# Prueba de t para muestras dependientes

t.test(prod$Kgsem ~ prod$Tiempo, pareid = T)
```

```
##
##  Welch Two Sample t-test
##
## data:  prod$Kgsem by prod$Tiempo
## t = -1.2998, df = 95.876, p-value = 0.1968
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.9934384  0.4158384
## sample estimates:
## mean in group T2012 mean in group T2013
##             10.1066             10.8954
```