practicando.R

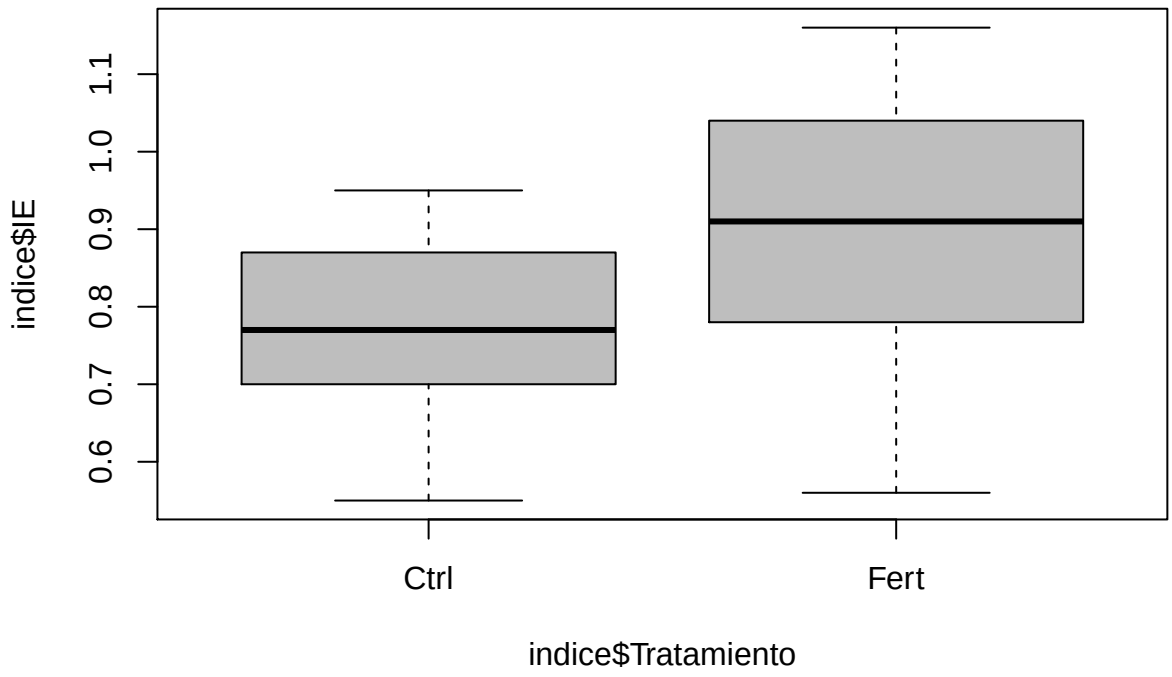
Usuario

2019-08-06

```
indice <-read.csv("C:/MCF202-2019/Datos/plantulas.csv", header = T)
head(indice)
```

```
##   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
```

```
boxplot(indice$IE ~ indice$Tratamiento, col="grey")
```




```
summary(indice)
```

```
##      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
```

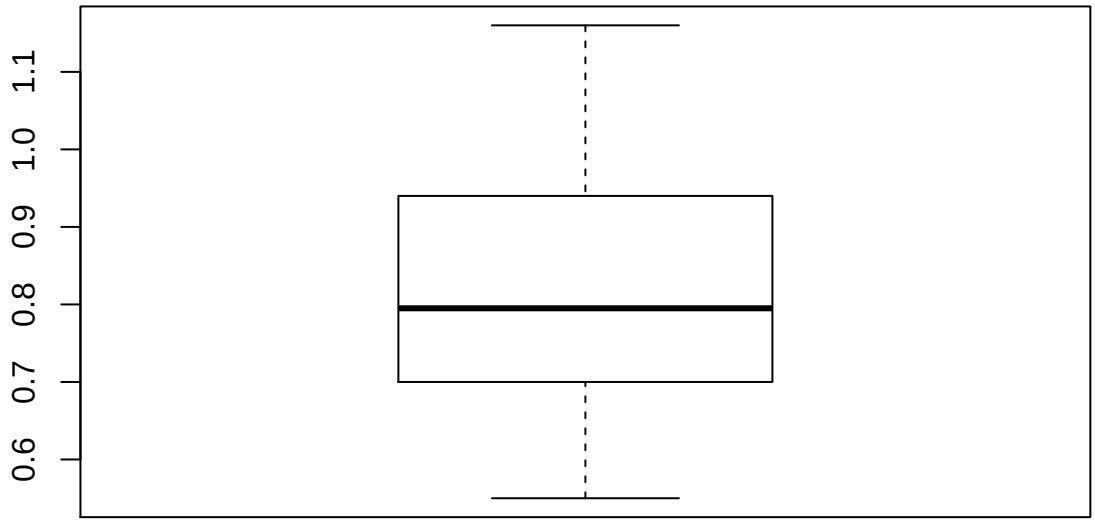
```
##  Max.   :42.00   Max.   :1.1600
```

```
# T una muestra ------------------------------------------------------------


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

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

```
boxplot(indice$IE)
```




```
# Control ------------------------------------------------------------------


Ctrl <- subset(indice, Tratamiento == "Ctrl")

mean=mean(Ctrl$IE)
fivenum(Ctrl$IE)
```

```
## [1] 0.55 0.70 0.77 0.87 0.95
```

```
sd=sd(Ctrl$IE)


shapiro.test(Ctrl$IE)
```

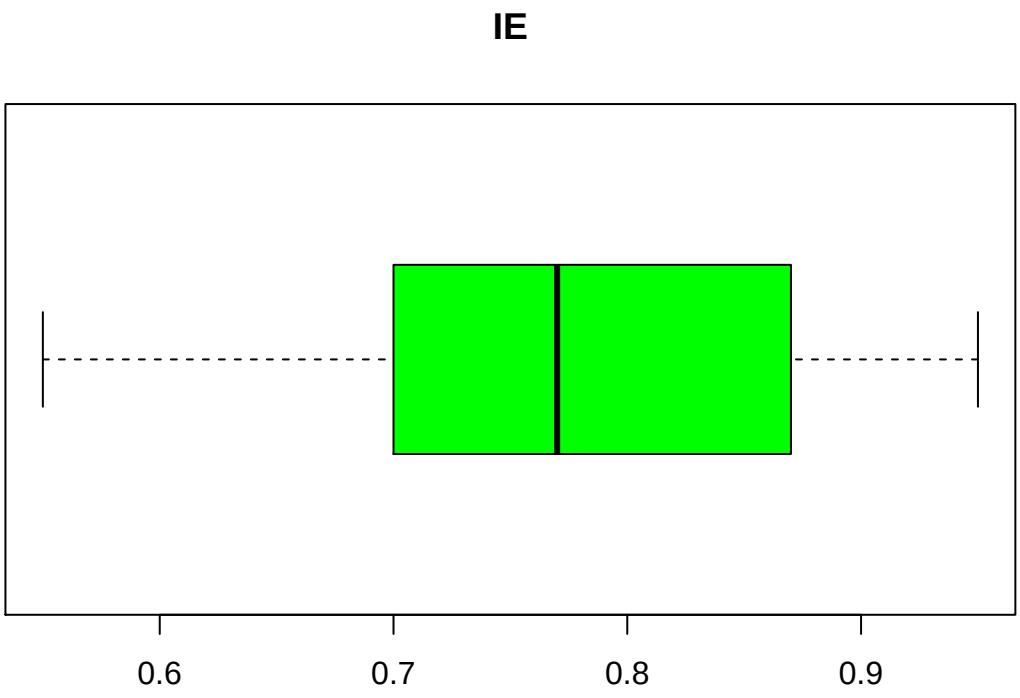
```
##
##  Shapiro-Wilk normality test
##
## data:  Ctrl$IE
## W = 0.9532, p-value = 0.3908
```

```
ks.test(Ctrl$IE, "pnorm", mean, sd)
```

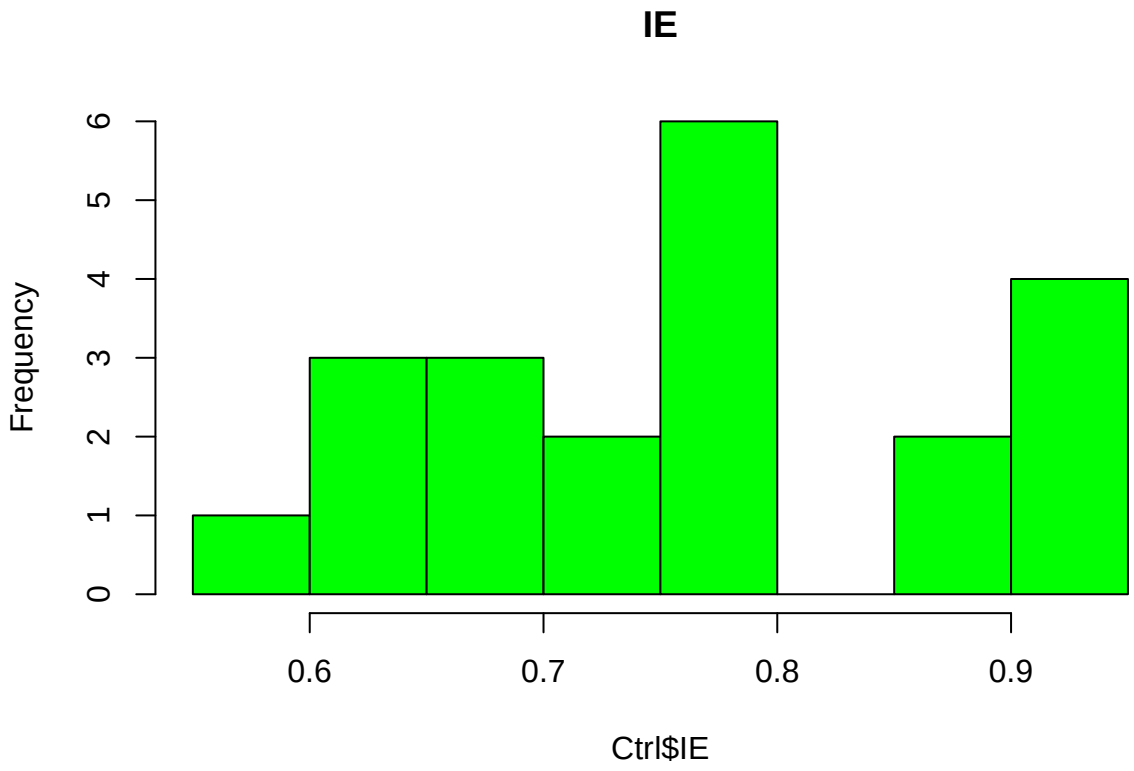
```
## Warning in ks.test(Ctrl$IE, "pnorm", mean, sd): ties should not be present
## for the Kolmogorov-Smirnov test
```

```
##
##  One-sample Kolmogorov-Smirnov test
##
## data:  Ctrl$IE
## D = 0.11991, p-value = 0.9233
## alternative hypothesis: two-sided
```

```
boxplot(Ctrl$IE,horizontal = TRUE, col= "green", main="IE")
```




```
hist(Ctrl$IE, col= "green", main="IE")
```




```
# Fertilizante ------------------------------------------------------------


Fert <- subset(indice, Tratamiento == "Fert")
meanF=mean(Fert$IE)
fivenum(Fert$IE)
```

```
## [1] 0.56 0.78 0.91 1.04 1.16
```

```
sdF=sd(Fert$IE)

shapiro.test(Fert$IE)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  Fert$IE
## W = 0.95339, p-value = 0.3941
```

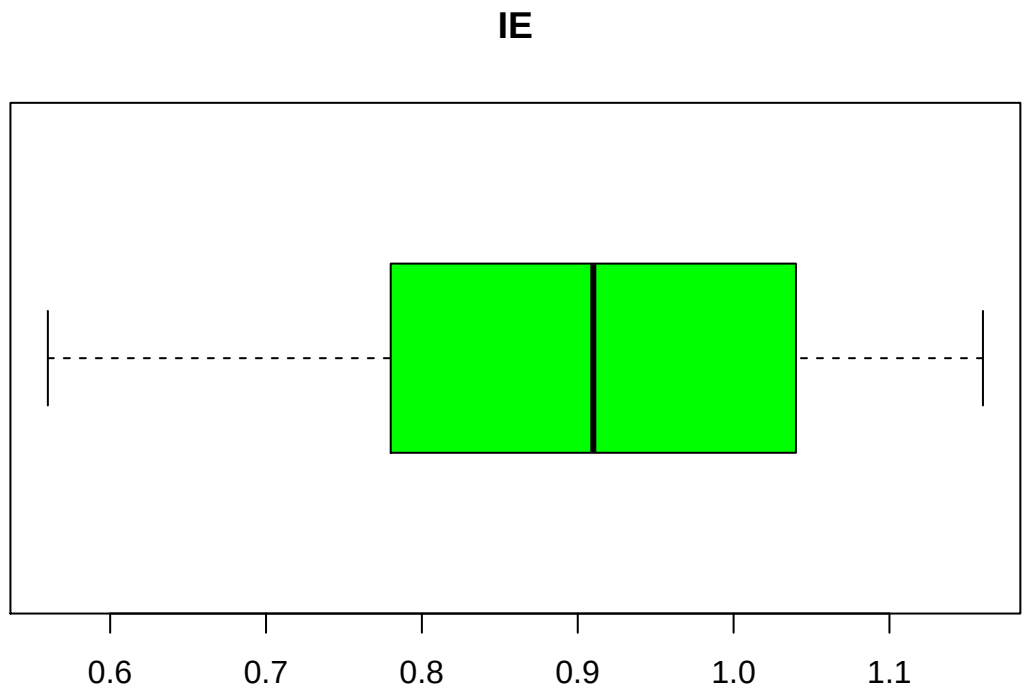
```
ks.test(Fert$IE, "pnorm", meanF, sdF)
```

```
## Warning in ks.test(Fert$IE, "pnorm", meanF, sdF): ties should not be
## present for the Kolmogorov-Smirnov test
```

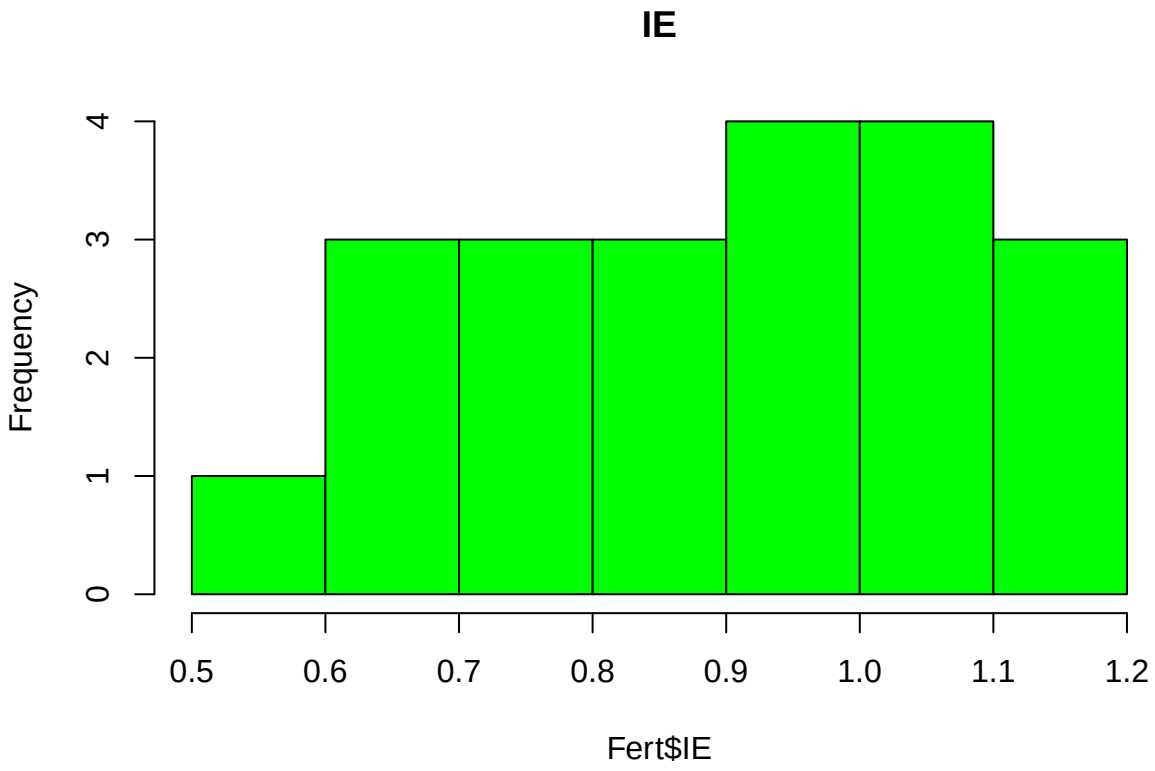
```
##
##  One-sample Kolmogorov-Smirnov test
##
## data:  Fert$IE
## D = 0.10776, p-value = 0.9677
```

```
## alternative hypothesis: two-sided
```

```
boxplot(Fert$IE,horizontal = TRUE, col= "green", main="IE")
```




```
hist(Fert$IE, col= "green", main="IE")
```




```
# Normalidad de varianza ------------------------------------------------

var.test(Ctrl$IE, Fert$IE)
```

```
##
##  F test to compare two variances
##
## data:  Ctrl$IE and Fert$IE
## 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
```

```
# #Prueba T de student ---------------------------------------------------

t.test(Ctrl$IE, Fert$IE, var.equal=T)
```

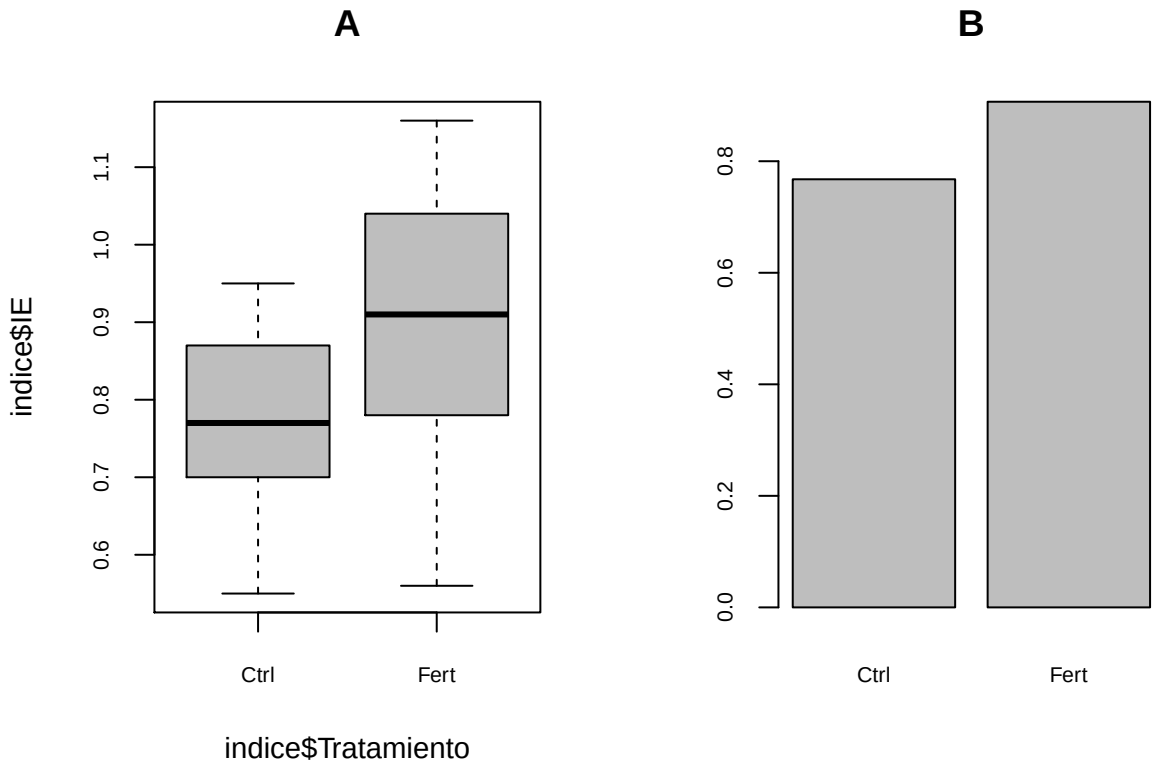
```
##
##  Two Sample t-test
##
## data:  Ctrl$IE and Fert$IE
## t = -2.9813, df = 40, p-value = 0.004868
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
```

```
##  -0.23331192 -0.04478332
## sample estimates:
## mean of x mean of y
## 0.7676190 0.9066667
```

```r
t.test(Ctrl$IE, Fert$IE)
```

```
##
##  Welch Two Sample t-test
##
## data:  Ctrl$IE and Fert$IE
## 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 of x mean of y
## 0.7676190 0.9066667
```

```r
op <- par(mfrow=c(1,2), cex.axis=.7,  cex.lab=.9)
boxplot(indice$IE ~ indice$Tratamiento, col="grey", main="A")
barplot(tapply(indice$IE, list(indice$Tratamiento), mean ), beside=T, main="B")
```




```r
# T dos muestras ------------------------------------------------------------

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

```
##   Kilogramos tiempo
## 1          9  T2010
## 2          8  T2010
## 3          6  T2010
## 4          9  T2010
## 5          9  T2010
## 6          7  T2010
```

```
# T2010 ------------------------------------------------------------------


T2010 <- subset(semillas, tiempo == "T2010")

mean2010=mean(T2010$Kilogramos)
fivenum(T2010$Kilogramos)
```

```
## [1] 3.0 5.0 6.0 7.5 9.0
```

```
sd2010=sd(T2010$Kilogramos)

shapiro.test(T2010$Kilogramos)
```

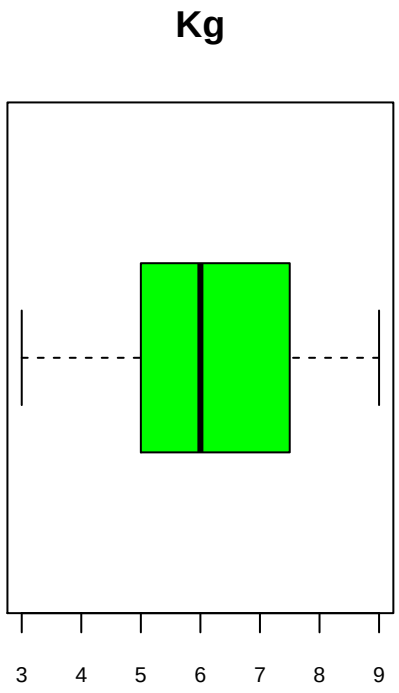
```
##
##  Shapiro-Wilk normality test
##
## data:  T2010$Kilogramos
## W = 0.92998, p-value = 0.2436
```

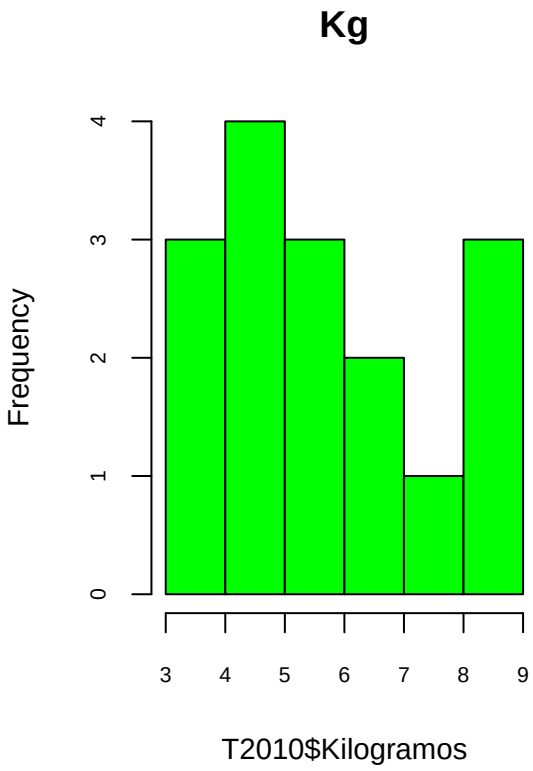
```
ks.test(T2010$Kilogramos, "pnorm", mean2010, sd2010)
```

```
## Warning in ks.test(T2010$Kilogramos, "pnorm", mean2010, sd2010): ties
## should not be present for the Kolmogorov-Smirnov test
```

```
##
##  One-sample Kolmogorov-Smirnov test
##
## data:  T2010$Kilogramos
## D = 0.16135, p-value = 0.7991
## alternative hypothesis: two-sided
```

```
boxplot(T2010$Kilogramos,horizontal = TRUE, col= "green", main="Kg")
hist(T2010$Kilogramos, col= "green", main="Kg")
```






```
# 2013 ------------------------------------------------------------------------


T2013 <- subset(semillas, tiempo == "T2013")

mean2013=mean(T2013$Kilogramos)
fivenum(T2013$Kilogramos)
```

```
## [1] 3.0 4.0 5.0 7.5 9.0
```

```
sd2013=sd(T2013$Kilogramos)

shapiro.test(T2013$Kilogramos)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  T2013$Kilogramos
## W = 0.9158, p-value = 0.1444
```

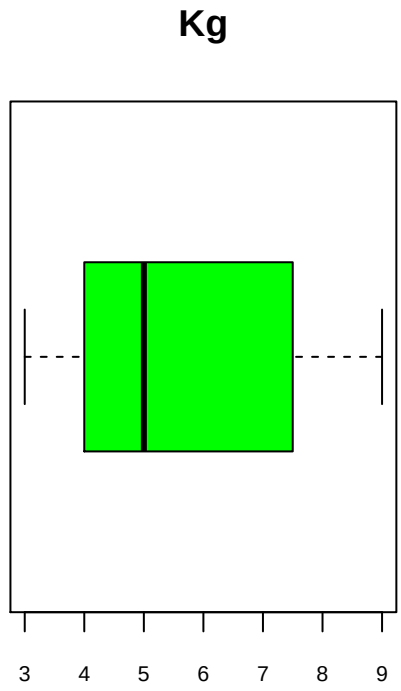
```
ks.test(T2013$Kilogramos, "pnorm", mean2013, sd2013)
```

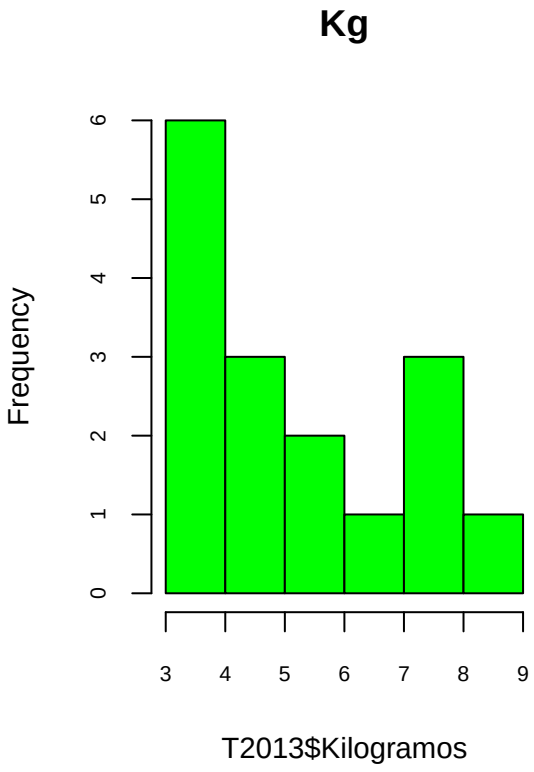
```
## Warning in ks.test(T2013$Kilogramos, "pnorm", mean2013, sd2013): ties
## should not be present for the Kolmogorov-Smirnov test
```

```
##
##  One-sample Kolmogorov-Smirnov test
##
```

```
## data:  T2013$Kilogramos
## D = 0.17708, p-value = 0.6973
## alternative hypothesis: two-sided
```

```
boxplot(T2013$Kilogramos,horizontal = TRUE, col= "green", main="Kg")
hist(T2013$Kilogramos, col= "green", main="Kg")
```






```
# Paried t-test ------------------------------------------------------------

test.tiempo <- t.test(semillas$Kilogramos ~ semillas$tiempo, paired=TRUE)
test.tiempo
```

```
##
##  Paired t-test
##
## data:  semillas$Kilogramos by semillas$tiempo
## t = 1.5927, df = 15, p-value = 0.1321
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.1902958  1.3152958
## sample estimates:
## mean of the differences
##                  0.5625
```