

08_Análisis-de-varianza.R

Usuario

2023-10-10

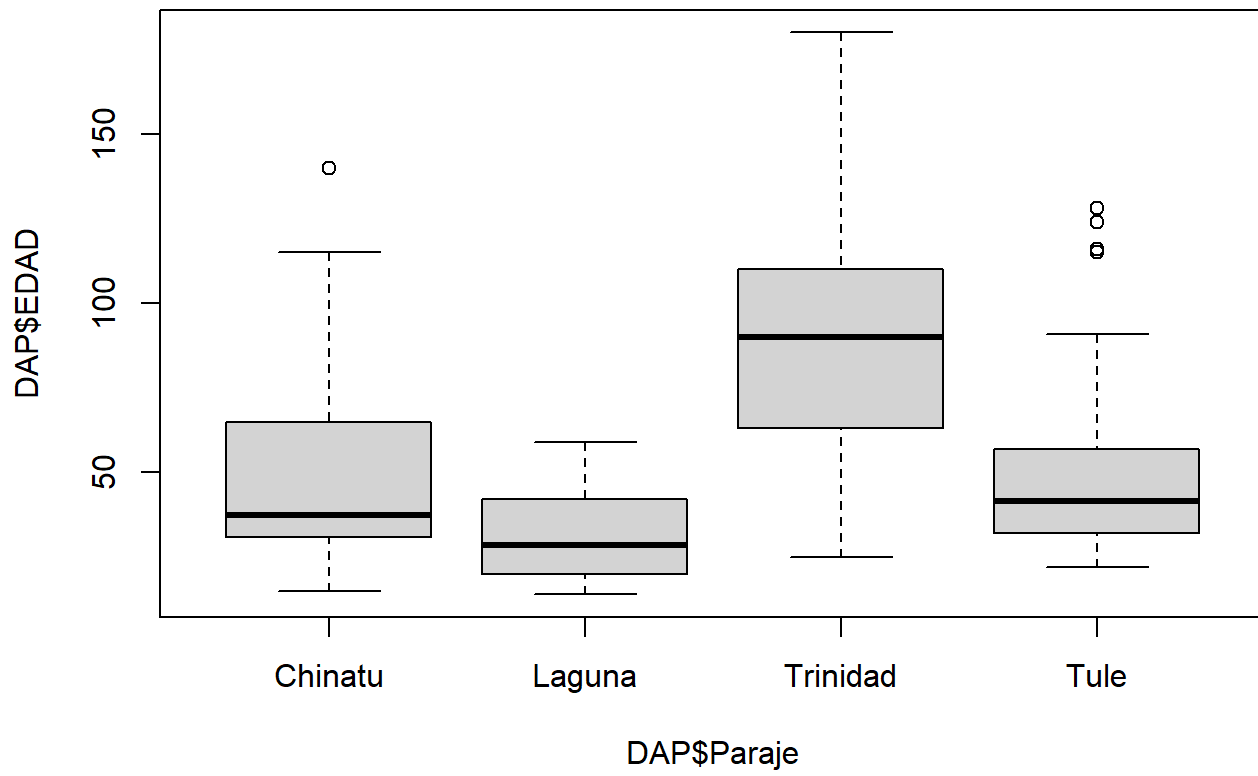
```
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# 10/10/2023  
# Matricula: 2070509
```

```
library(repmis)  
DAP <- source_data("https://www.dropbox.com/s/fbrwxypacjgeayj/Datos_Rascon_Anova.csv?dl=1")
```

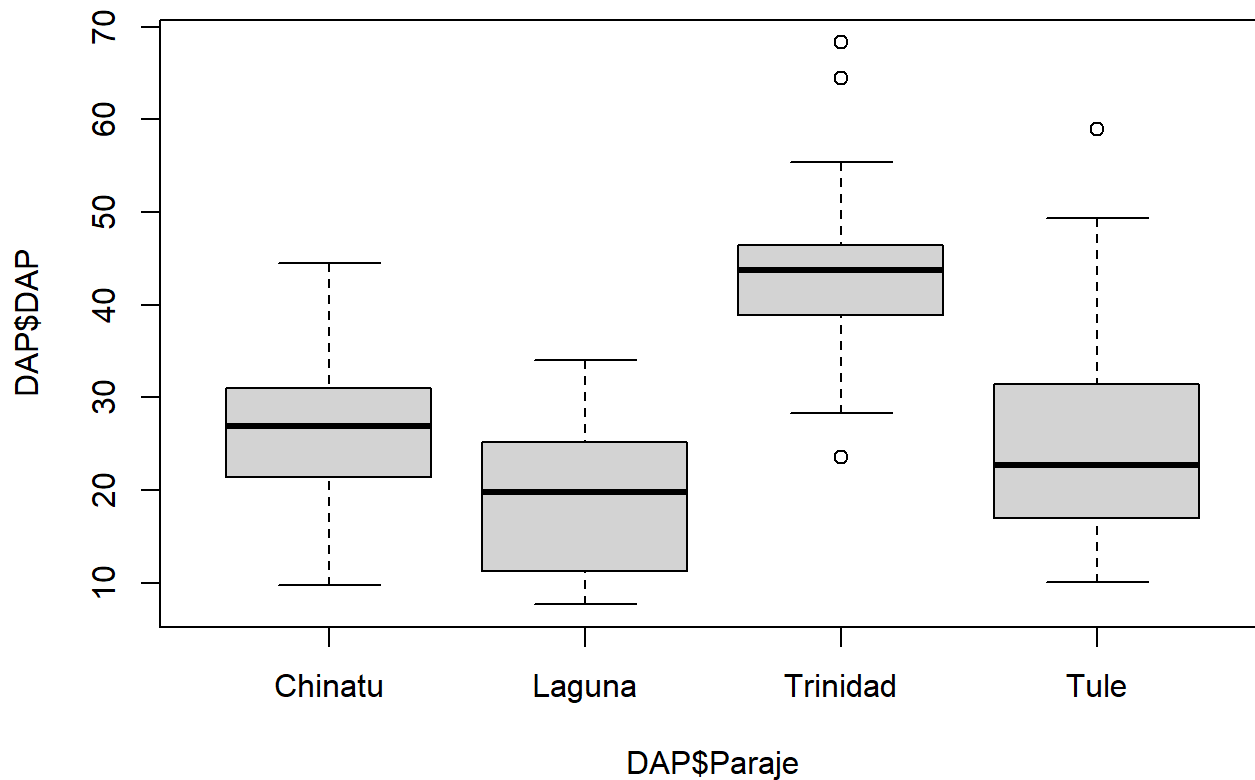
```
## Downloading data from: https://www.dropbox.com/s/fbrwxypacjgeayj/Datos_Rascon_Anova.csv?dl=1
```

```
## SHA-1 hash of the downloaded data file is:  
## 75a7b481bb1b844f43090d2711189c46afece8fa
```

```
DAP$Paraje<-as.factor(DAP$Paraje)  
DAP$SP<-as.factor(DAP$SP)  
#Determinar estadísticas descriptivas  
  
boxplot(DAP$EDAD~DAP$Paraje)
```



```
boxplot(DAP$DAP~DAP$Paraje)
```



```
tapply(DAP$EDAD, DAP$Paraje, mean)
```

```
## Chinatu Laguna Trinidad Tule
## 48.70000 30.70000 93.40000 53.13333
```

```
tapply(DAP$EDAD, DAP$Paraje, var)
```

```
## Chinatu Laguna Trinidad Tule
## 837.3207 150.4931 1427.4897 998.2575
```

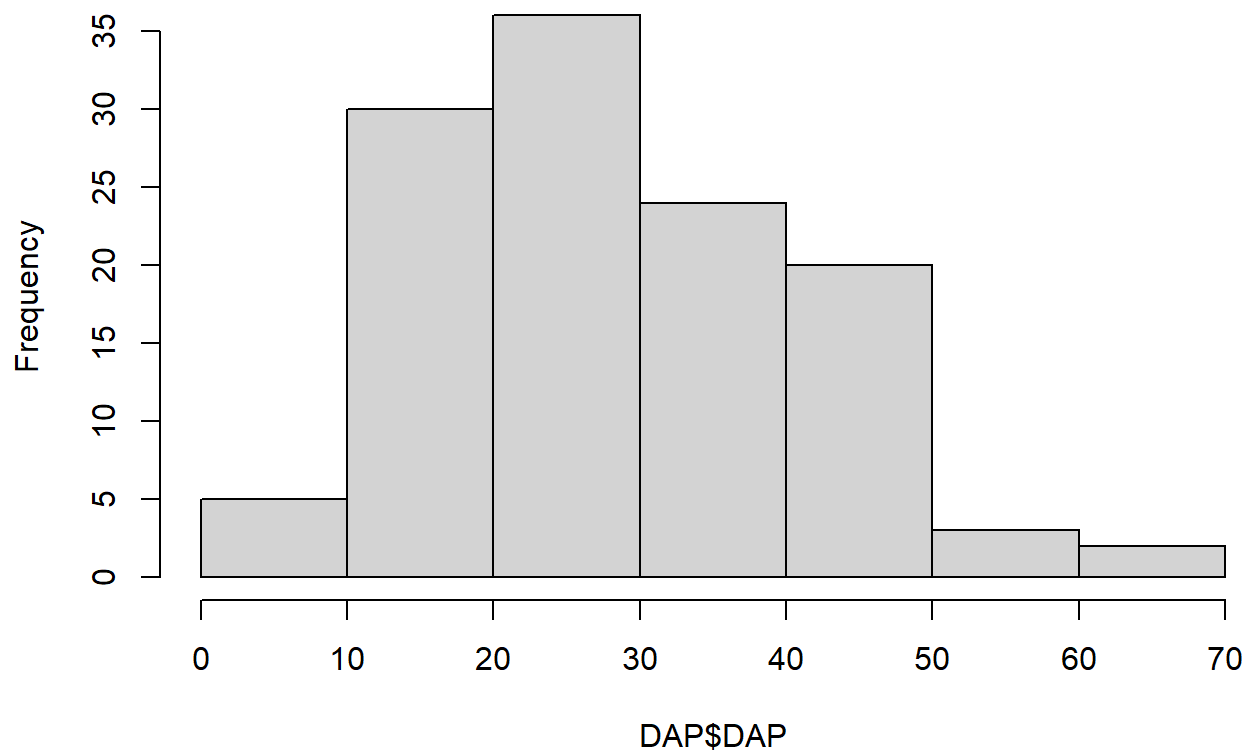
```
#Normalidad revisar
```

```
shapiro.test(DAP$DAP)
```

```
##
## Shapiro-Wilk normality test
##
## data: DAP$DAP
## W = 0.96548, p-value = 0.003575
```

```
hist(DAP$DAP)
```

Histogram of DAP\$DAP



```
#Los datos del DAP no son normales
```

```
bartlett.test(DAP$DAP~DAP$Paraje)
```

```
##
```

```
## Bartlett test of homogeneity of variances
```

```
##
```

```
## data: DAP$DAP by DAP$Paraje
```

```
## Bartlett's K-squared = 6.6622, df = 3, p-value = 0.08348
```

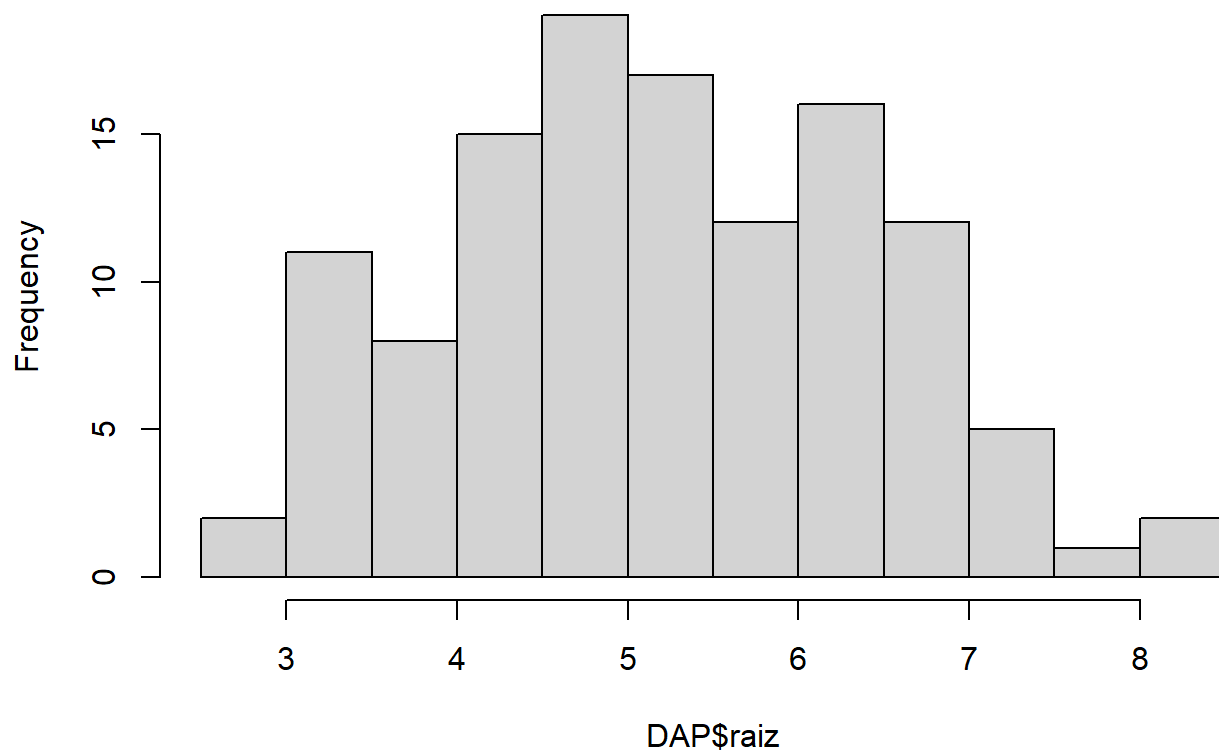
```
#La varianza de los tratamientos son iguales
```

```
#Transformar DAP para cumplir normalidad
```

```
DAP$raiz<-sqrt(DAP$DAP)
```

```
hist(DAP$raiz)
```

Histogram of DAP\$raiz



```
#Probar normalidad a Los datos transformados (raíz cuadrada)
shapiro.test(DAP$raiz)
```

```
##
##  Shapiro-Wilk normality test
##
## data:  DAP$raiz
## W = 0.98341, p-value = 0.1473
```

```
#Los datos son normales
```

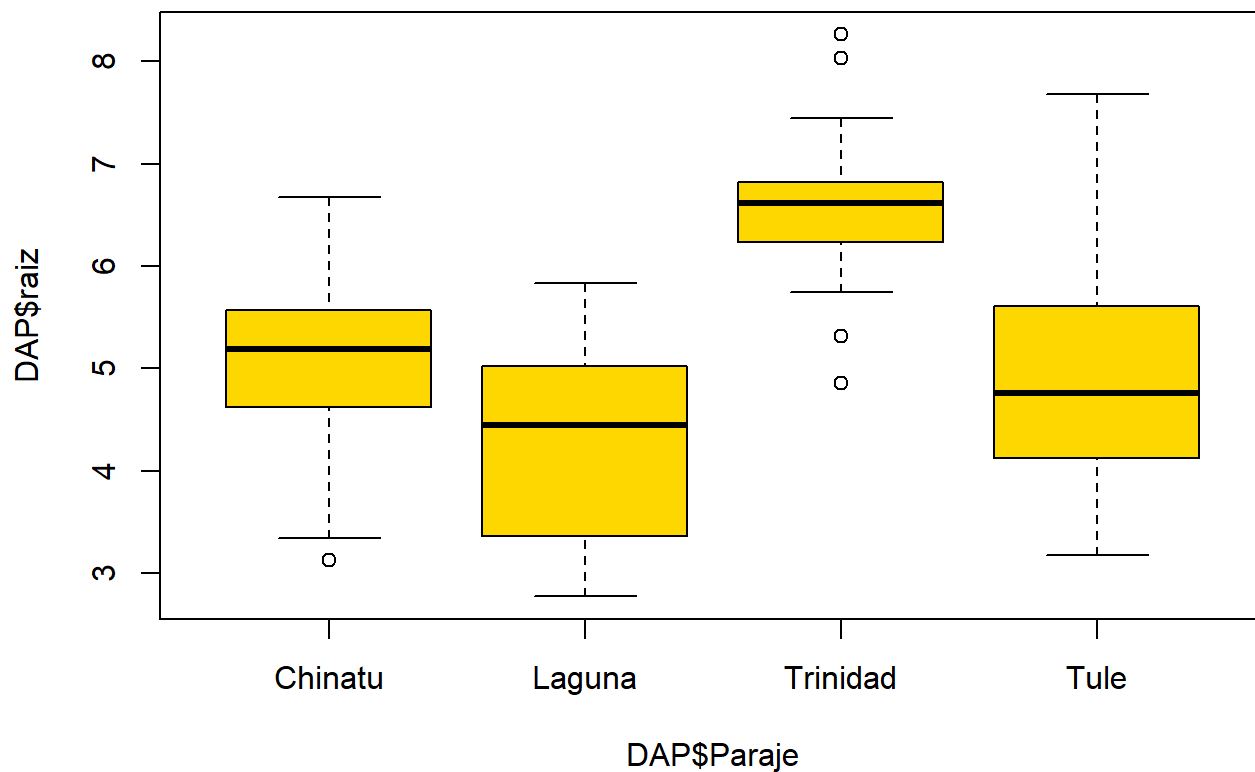
```
#Probar homogeneidad de varianzas de Los datos transformados
bartlett.test(DAP$raiz~DAP$Paraje)
```

```
##
##  Bartlett test of homogeneity of variances
##
## data:  DAP$raiz by DAP$Paraje
## Bartlett's K-squared = 7.6911, df = 3, p-value = 0.05285
```

```
dap.aov<-aov(DAP$raiz~DAP$Paraje)
summary(dap.aov)
```

```
##           Df Sum Sq Mean Sq F value    Pr(>F)
## DAP$Paraje   3  84.09   28.029    33.2 1.45e-15 ***
## Residuals  116   97.94    0.844
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
boxplot(DAP$raiz~DAP$Paraje, col="gold")
```



```
#Encontrar las diferencias significativas
TukeyHSD(dap.aov)
```

```
## Tukey multiple comparisons of means
## 95% family-wise confidence level
##
## Fit: aov(formula = DAP$raiz ~ DAP$Paraje)
##
## $`DAP$Paraje`
##              diff          lwr          upr      p adj
## Laguna-Chinatu -0.7331899 -1.351610796 -0.1147691 0.0131794
## Trinidad-Chinatu 1.5391985  0.920777631  2.1576194 0.0000000
## Tule-Chinatu    -0.1190328 -0.737453617  0.4993881 0.9585122
## Trinidad-Laguna  2.2723884  1.653967564  2.8908093 0.0000000
## Tule-Laguna      0.6141572 -0.004263685  1.2325780 0.0523230
## Tule-Trinidad   -1.6582312 -2.276652111 -1.0398104 0.0000000
```

```
plot(TukeyHSD(dap.aov))
```

95% family-wise confidence level

