Examen-final.R

zupap

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```
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# Examen Final


# # Datos ------------------------------------------------------------------
--

data("InsectSprays")
head(InsectSprays)

##   count spray
## 1    10     A
## 2     7     A
## 3    20     A
## 4    14     A
## 5    14     A
## 6    12     A

summary(InsectSprays)

##      count       spray
##  Min.   : 0.00   A:12
##  1st Qu.: 3.00   B:12
##  Median : 7.00   C:12
##  Mean   : 9.50   D:12
##  3rd Qu.:14.25   E:12
##  Max.   :26.00   F:12

# Boxplot ----------------------------------------------------------------
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boxplot(InsectSprays$count ~ InsectSprays$spray, col = "blue",
        ylab = "Nematodos encontrados",
        xlab = "Tipo de insecticida")
```

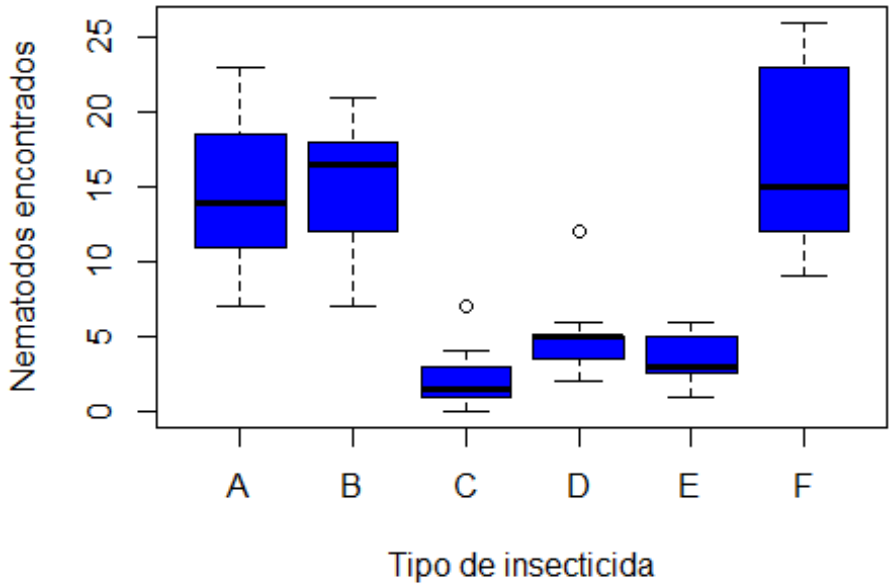


```
# Desviación estandar ------------------------------------------------
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tapply(InsectSprays$count, InsectSprays$spray, sd)

##        A        B        C        D        E        F
## 4.719399 4.271115 1.975225 2.503028 1.732051 6.213378

bartlett.test(InsectSprays$count, InsectSprays$spray)

##
##  Bartlett test of homogeneity of variances
##
## data:  InsectSprays$count and InsectSprays$spray
## Bartlett's K-squared = 25.96, df = 5, p-value = 9.085e-05

ins.aov <- aov(InsectSprays$count ~ InsectSprays$spray)
summary(ins.aov)

##                     Df Sum Sq Mean Sq F value Pr(>F)
## InsectSprays$spray  5   2669   533.8    34.7 <2e-16 ***
## Residuals          66   1015    15.4
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

# Prueba de Tukey ----------------------------------------------------
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```

```
TukeyHSD(ins.aov)
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = InsectSprays$count ~ InsectSprays$spray)
##
## $`InsectSprays$spray`
##            diff        lwr       upr     p adj
## B-A   0.8333333  -3.866075  5.532742 0.9951810
## C-A -12.4166667 -17.116075 -7.717258 0.0000000
## D-A  -9.5833333 -14.282742 -4.883925 0.0000014
## E-A -11.0000000 -15.699409 -6.300591 0.0000000
## F-A   2.1666667  -2.532742  6.866075 0.7542147
## C-B -13.2500000 -17.949409 -8.550591 0.0000000
## D-B -10.4166667 -15.116075 -5.717258 0.0000002
## E-B -11.8333333 -16.532742 -7.133925 0.0000000
## F-B   1.3333333  -3.366075  6.032742 0.9603075
## D-C   2.8333333  -1.866075  7.532742 0.4920707
## E-C   1.4166667  -3.282742  6.116075 0.9488669
## F-C  14.5833333   9.883925 19.282742 0.0000000
## E-D  -1.4166667  -6.116075  3.282742 0.9488669
## F-D  11.7500000   7.050591 16.449409 0.0000000
## F-E  13.1666667   8.467258 17.866075 0.0000000
```