Examen-2.R

Usuario

2022-10-26

```
#Citlali Guadalupe Garcia Ramones
# 26/09/22
#Examen

#Ejercicio 1

InsectSprays

##    count spray
## 1     10     A
## 2      7     A
## 3     20     A
## 4     14     A
## 5     14     A
## 6     12     A
## 7     10     A
## 8     23     A
## 9     17     A
## 10    20     A
## 11    14     A
## 12    13     A
## 13    11     B
## 14    17     B
## 15    21     B
## 16    11     B
## 17    16     B
## 18    14     B
## 19    17     B
## 20    17     B
## 21    19     B
## 22    21     B
## 23     7     B
## 24    13     B
## 25     0     C
## 26     1     C
## 27     7     C
## 28     2     C
## 29     3     C
## 30     1     C
## 31     2     C
## 32     1     C
## 33     3     C
```
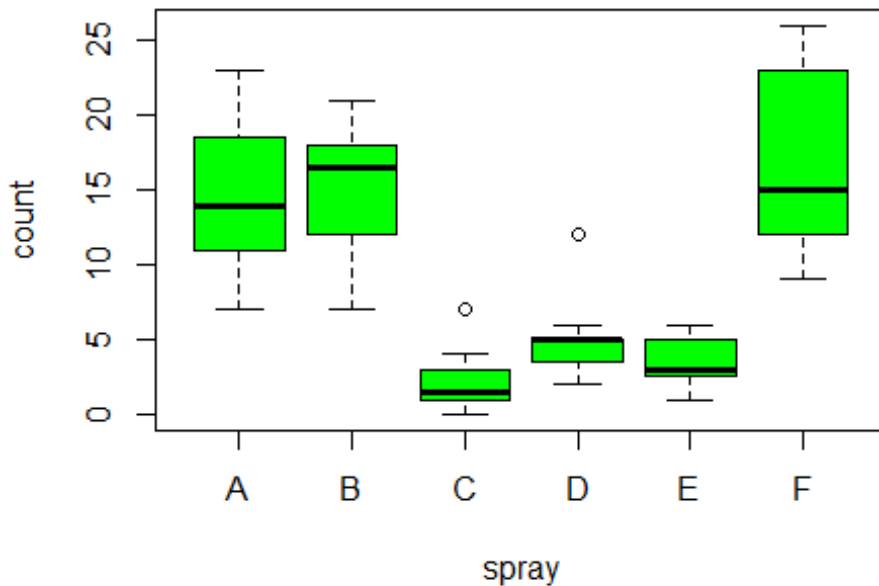
```
## 34      0    C
## 35      1    C
## 36      4    C
## 37      3    D
## 38      5    D
## 39     12    D
## 40      6    D
## 41      4    D
## 42      3    D
## 43      5    D
## 44      5    D
## 45      5    D
## 46      5    D
## 47      2    D
## 48      4    D
## 49      3    E
## 50      5    E
## 51      3    E
## 52      5    E
## 53      3    E
## 54      6    E
## 55      1    E
## 56      1    E
## 57      3    E
## 58      2    E
## 59      6    E
## 60      4    E
## 61     11    F
## 62      9    F
## 63     15    F
## 64     22    F
## 65     15    F
## 66     16    F
## 67     13    F
## 68     10    F
## 69     26    F
## 70     26    F
## 71     24    F
## 72     13    F
```

```r
boxplot(InsectSprays$count ~ InsectSprays$spray,
        xlab = "spray",
        ylab= "count",
        col = "green")
```

```
#tapply

tapply(InsectSprays$count, InsectSprays$spray, median)

##    A    B    C    D    E    F
## 14.0 16.5  1.5  5.0  3.0 15.0

tapply(InsectSprays$count, InsectSprays$spray,var)

##         A         B         C         D         E         F
## 22.272727 18.242424  3.901515  6.265152  3.000000 38.606061

#ANOVA

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

#tukey

TukeyHSD(par.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

plot(TukeyHSD(par.aov))
```


95% family-wise confidence level

Differences in mean levels of InsectSprays$spray