

Uso del paquete estadístico R para ajustar datos de producción de leche

Adrián González

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

```
lactancia=read.table("DPP_PROD_CC.txt", header=T, dec=",", sep="")
```

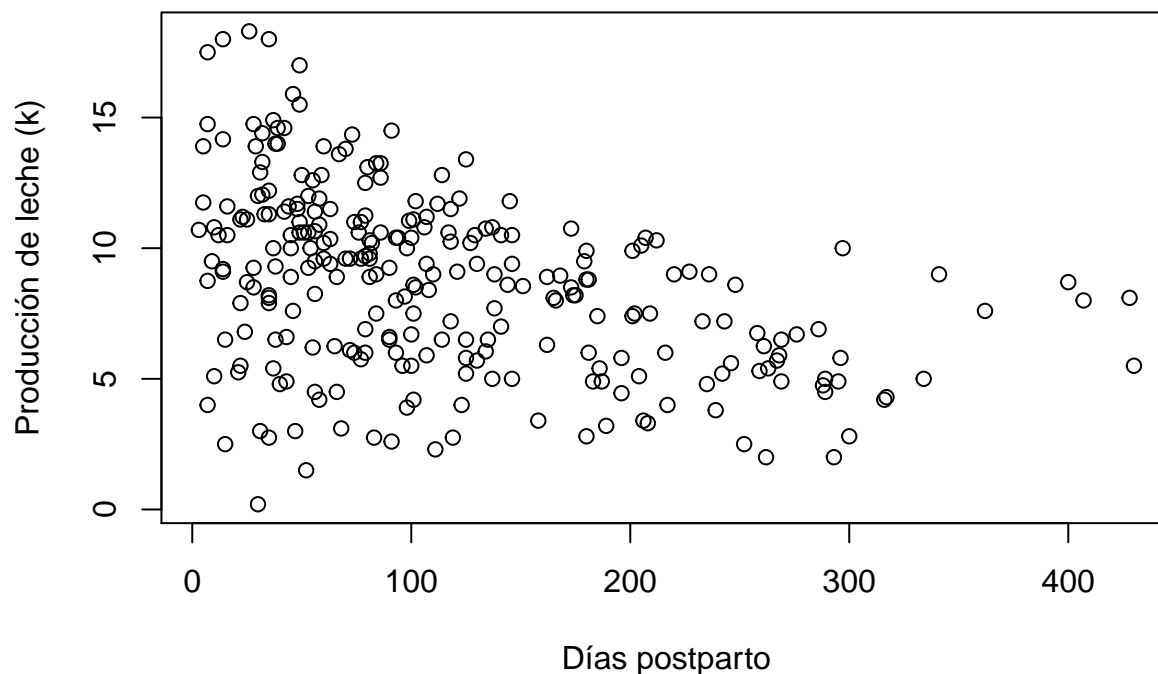
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(lactancia)
```

```
##           ID           DPP           PROD           CC
## almendron: 3  Min.      : 3.0  Min.      : 0.20  CUATRO:  2
## arrendajo: 3  1st Qu.: 48.0  1st Qu.:  6.00  DOS    :182
## asamblea : 3  Median : 91.0  Median :  8.90  TRES   : 59
## ayudita  : 3  Mean    :116.5  Mean    :  8.65  UNO    : 26
## azabache : 3  3rd Qu.:173.0  3rd Qu.:10.80
## azucena  : 3  Max.     :430.0  Max.     :18.30
## (Other)  :251
```

```
plot(lactancia$DPP, lactancia$PROD, xlab = "Días postparto", ylab = "Producción de leche (k)",
     main = "Dispersión Datos de Lactancia")
```

Dispersión Datos de Lactancia



```
library("nlstools")
```

```
##  
## 'nlstools' has been loaded.  
## IMPORTANT NOTICE: Most nonlinear regression models and data set examples  
## related to predictive microbiology have been moved to the package 'nlsMicrobio'
```

Ajuste de producción de leche al modelo de Wood

La ecuación que describe el modelo de Wood [?] es la siguiente:

$$y = at^b e^{-ct}$$

```
reglac <- nls(PROD ~ a * DPP^b*exp(-c*DPP), data = lactancia,  
             start = list(a=7, b=0.21, c=0.01),  
             control = list(maxiter=200, warnOnly=TRUE))
```

```
overview(reglac)
```

```
##  
## -----  
## Formula: PROD ~ a * DPP^b * exp(-c * DPP)  
##  
## Parameters:  
##      Estimate Std. Error t value Pr(>|t|)  
## a 11.0440857  1.6795781   6.576 2.55e-10 ***
```

```

## b -0.0055613  0.0470363  -0.118 0.905970
## c  0.0020318  0.0006004   3.384 0.000822 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.133 on 266 degrees of freedom
##
## Number of iterations to convergence: 6
## Achieved convergence tolerance: 9.018e-06
##
## -----
## Residual sum of squares: 2610
##
## -----
## t-based confidence interval:
##           2.5%          97.5%
## a  7.7371268588 14.35104446
## b -0.0981721418  0.08704945
## c  0.0008497054  0.00321399
##
## -----
## Correlation matrix:
##           a           b           c
## a  1.0000000 -0.9739664 -0.7553082
## b -0.9739664  1.0000000  0.8657931
## c -0.7553082  0.8657931  1.0000000

```

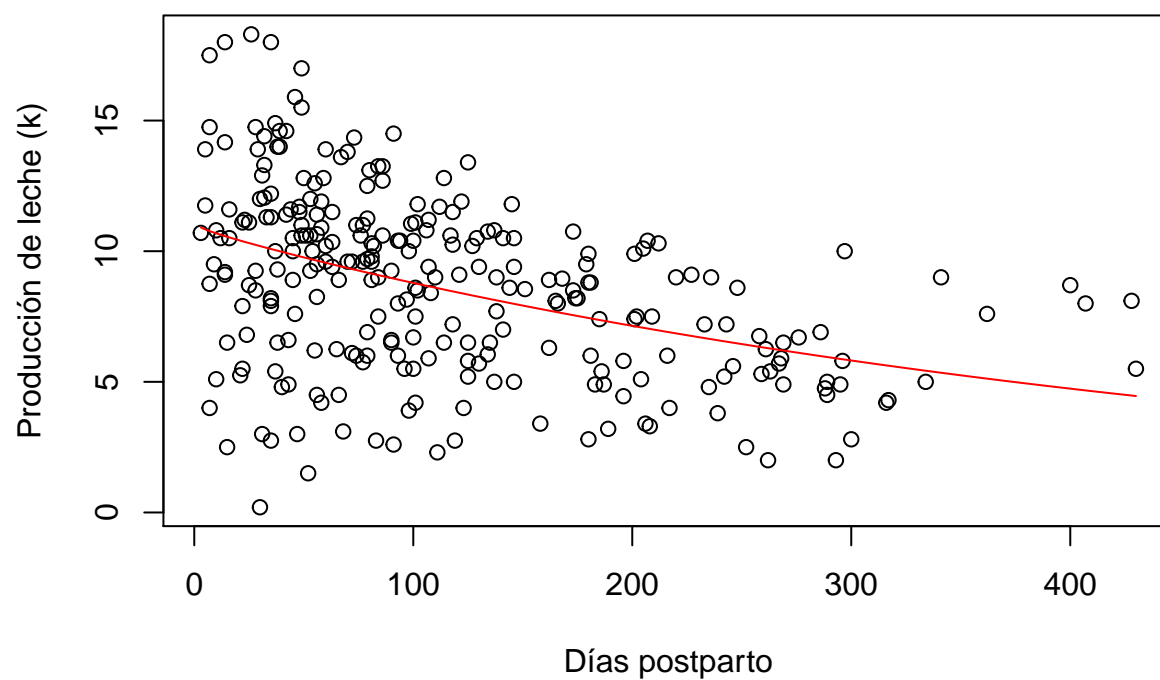
Graficando la línea de regresión sobre la nube de puntos

```

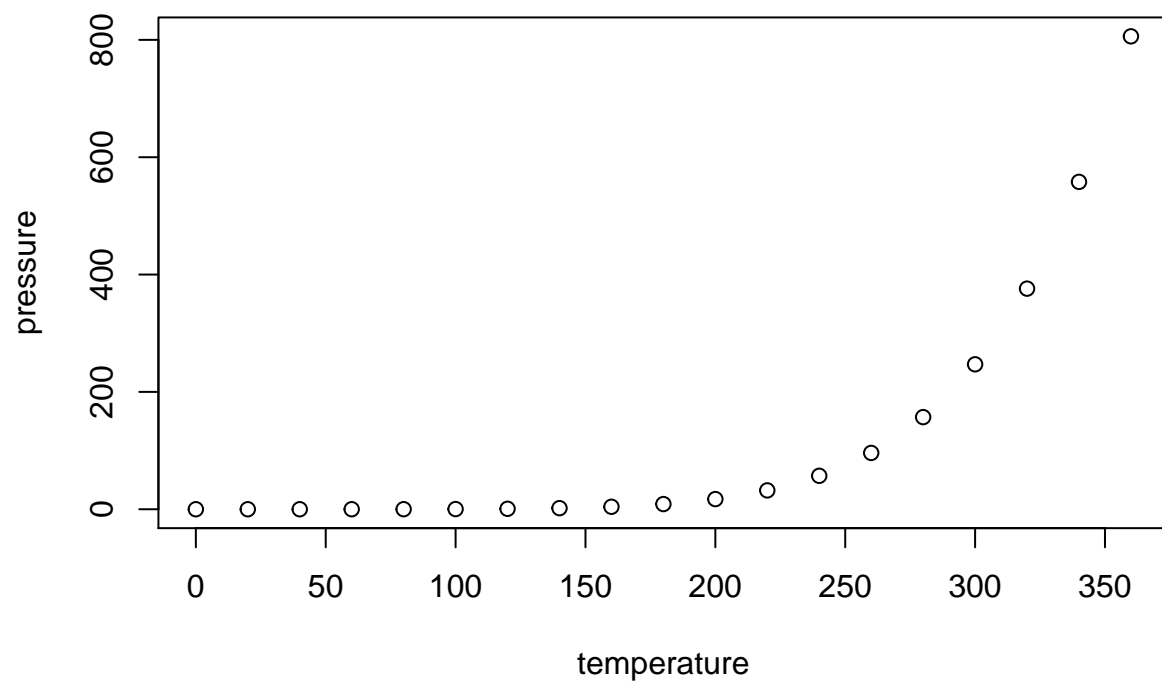
plotfit(reglac, smooth = TRUE,xlab='Días postparto',ylab='Producción de leche (k)',
        main='Ajuste modelo de Wood')

```

Ajuste modelo de Wood



You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot