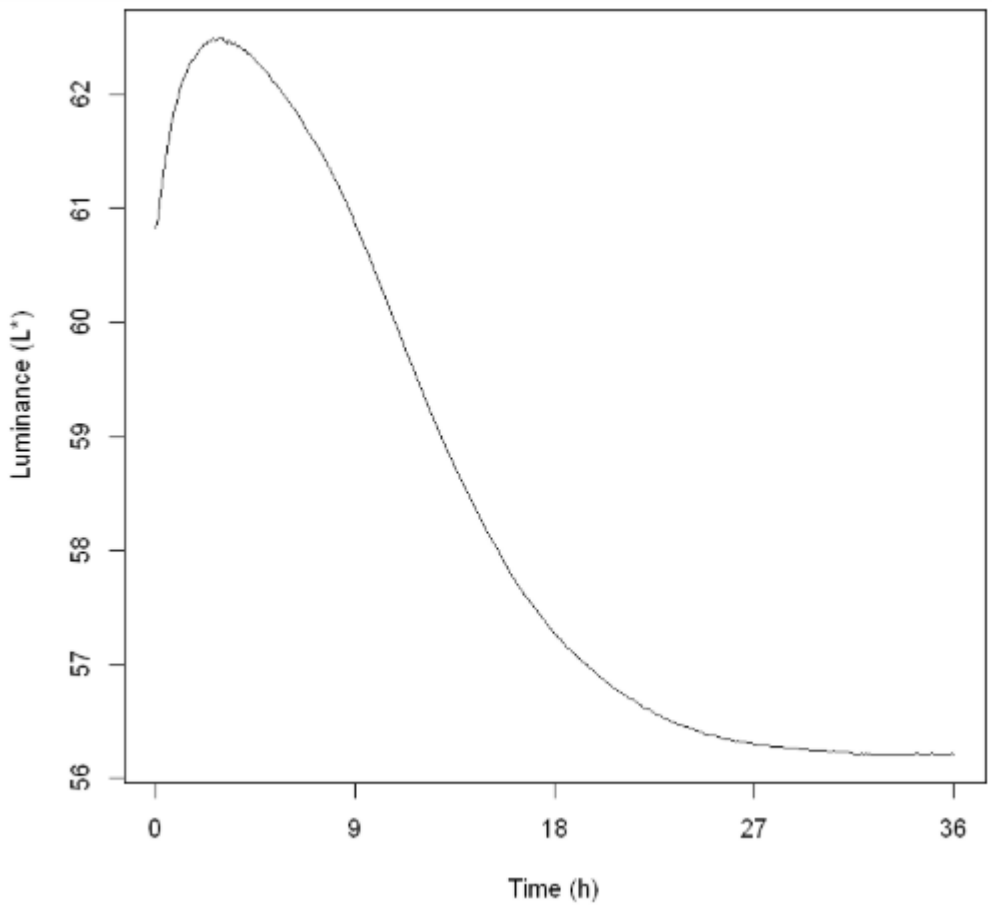
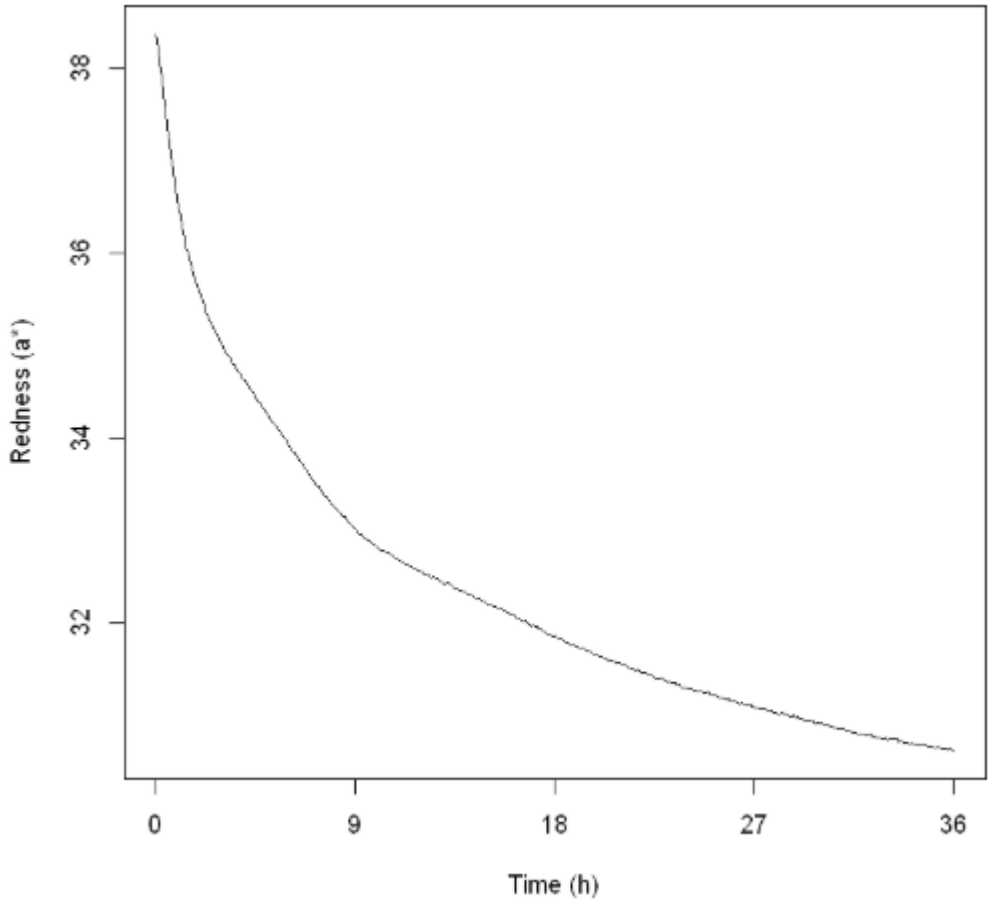
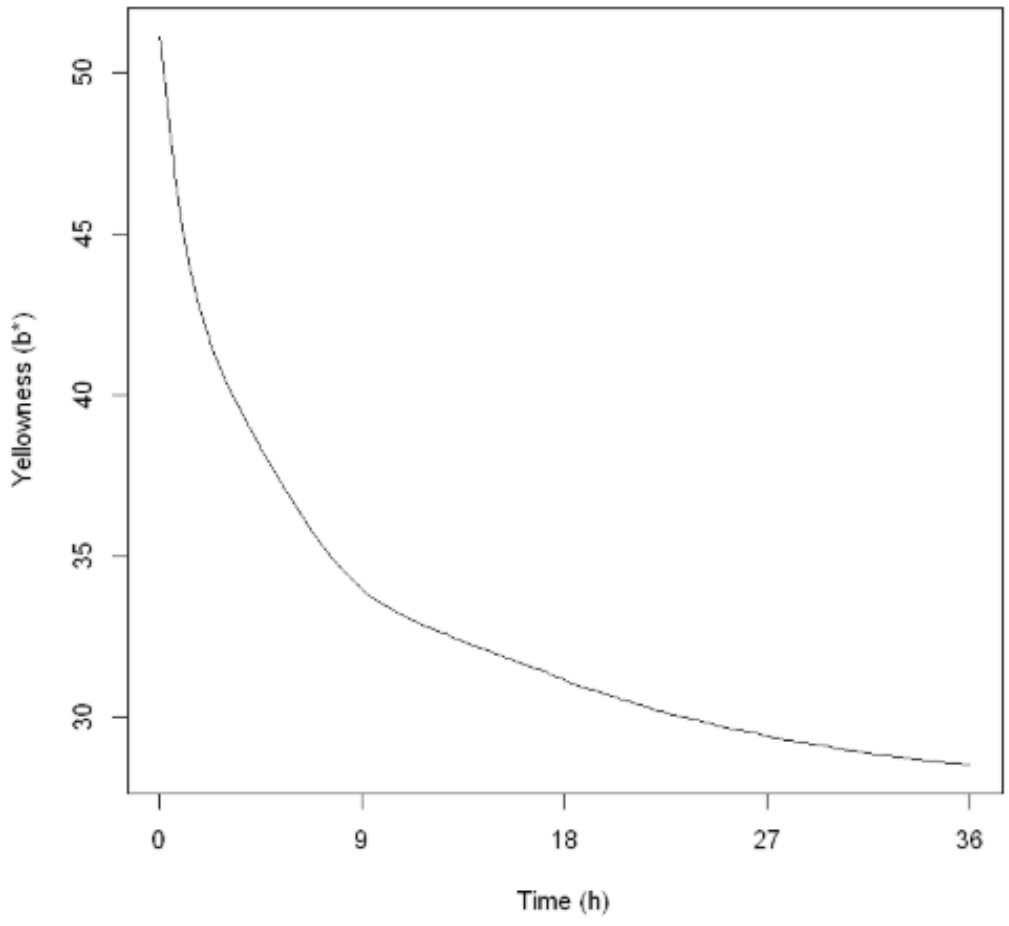
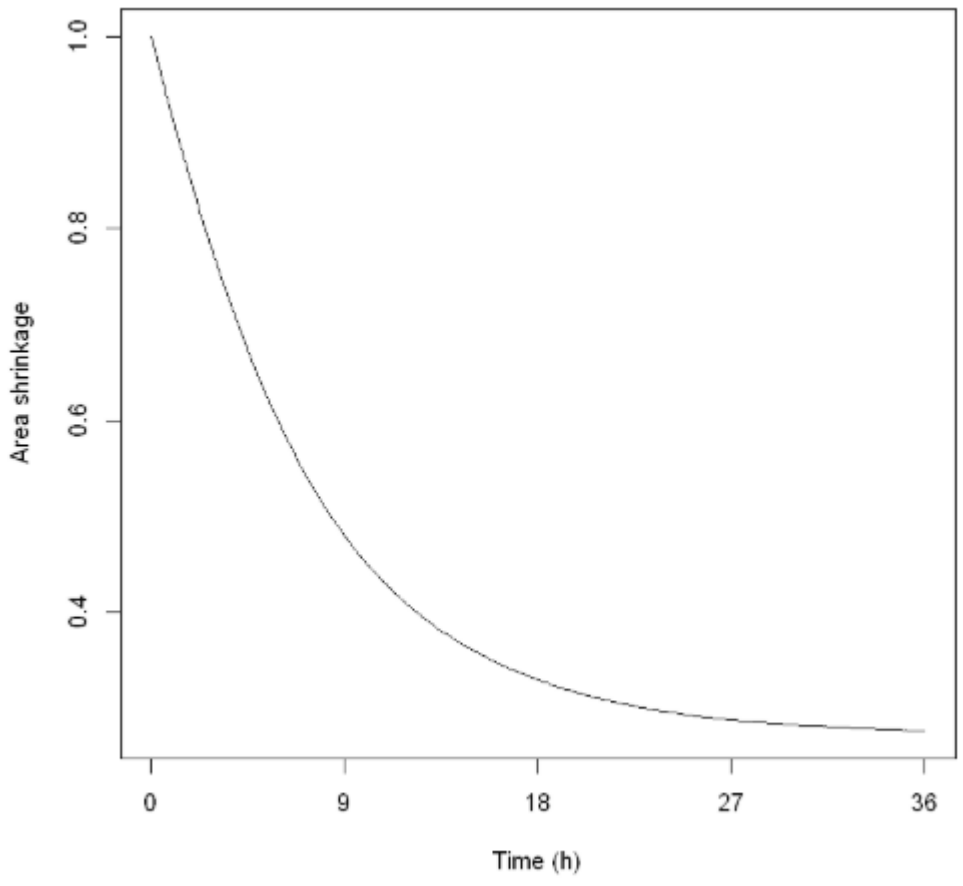
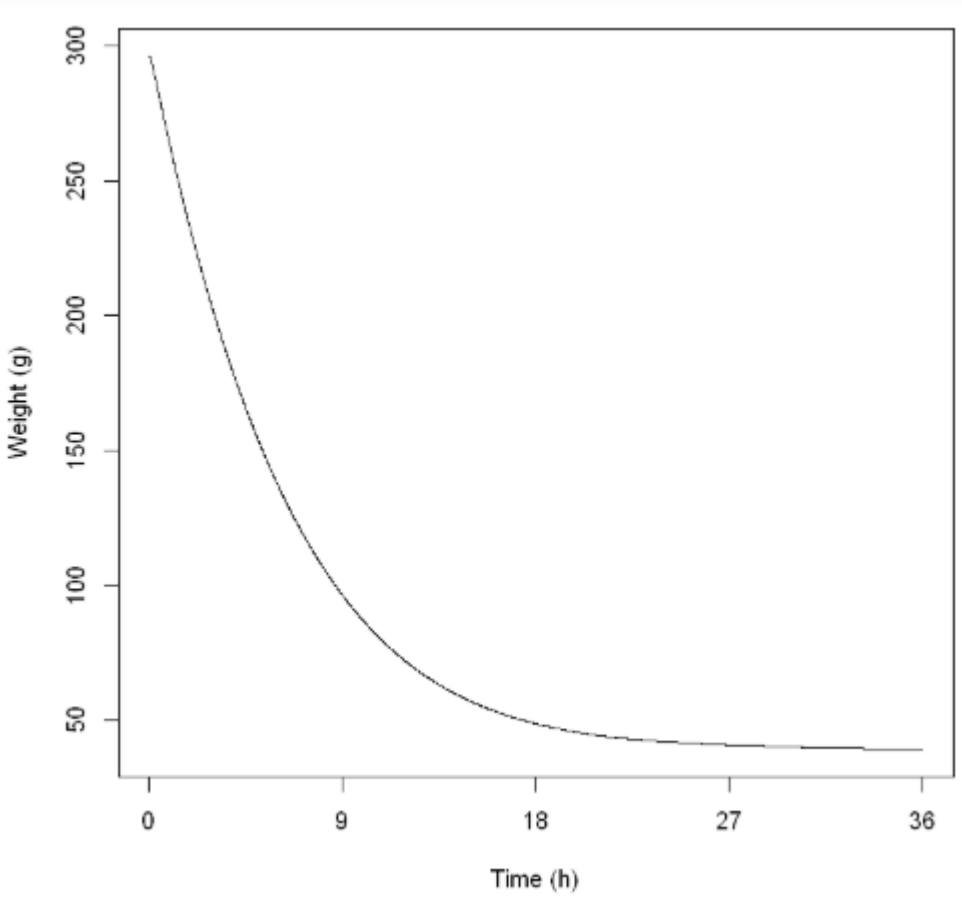
2019.11.27 prova

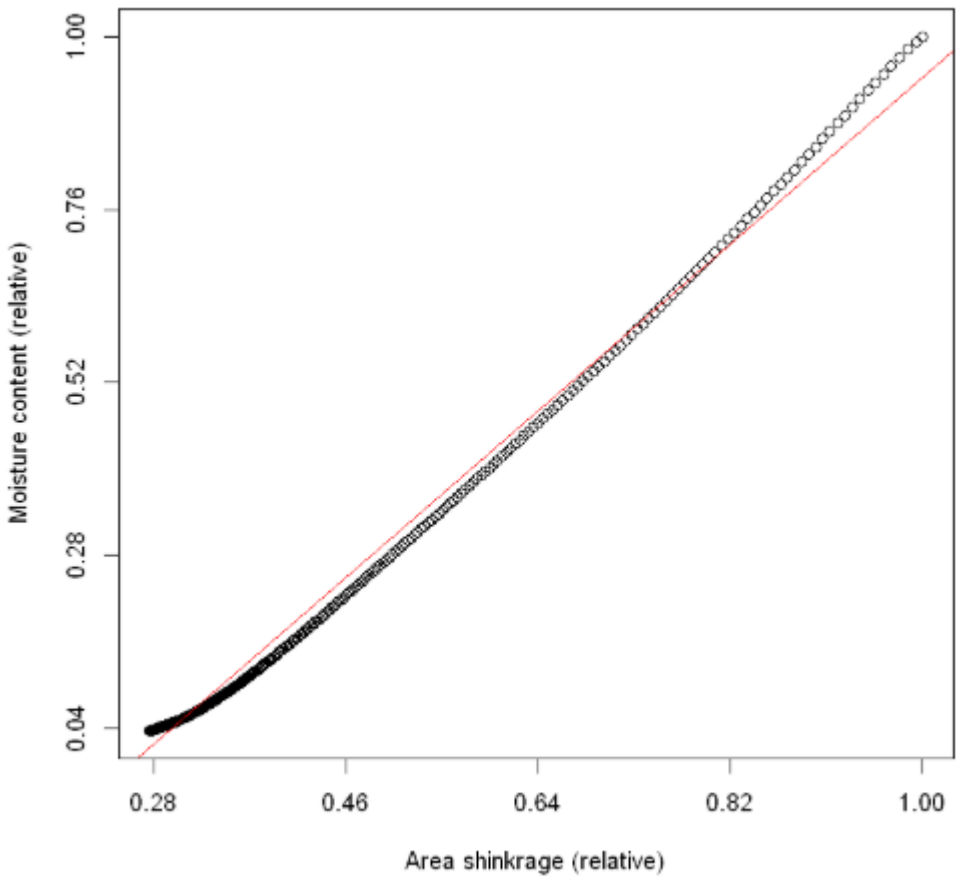


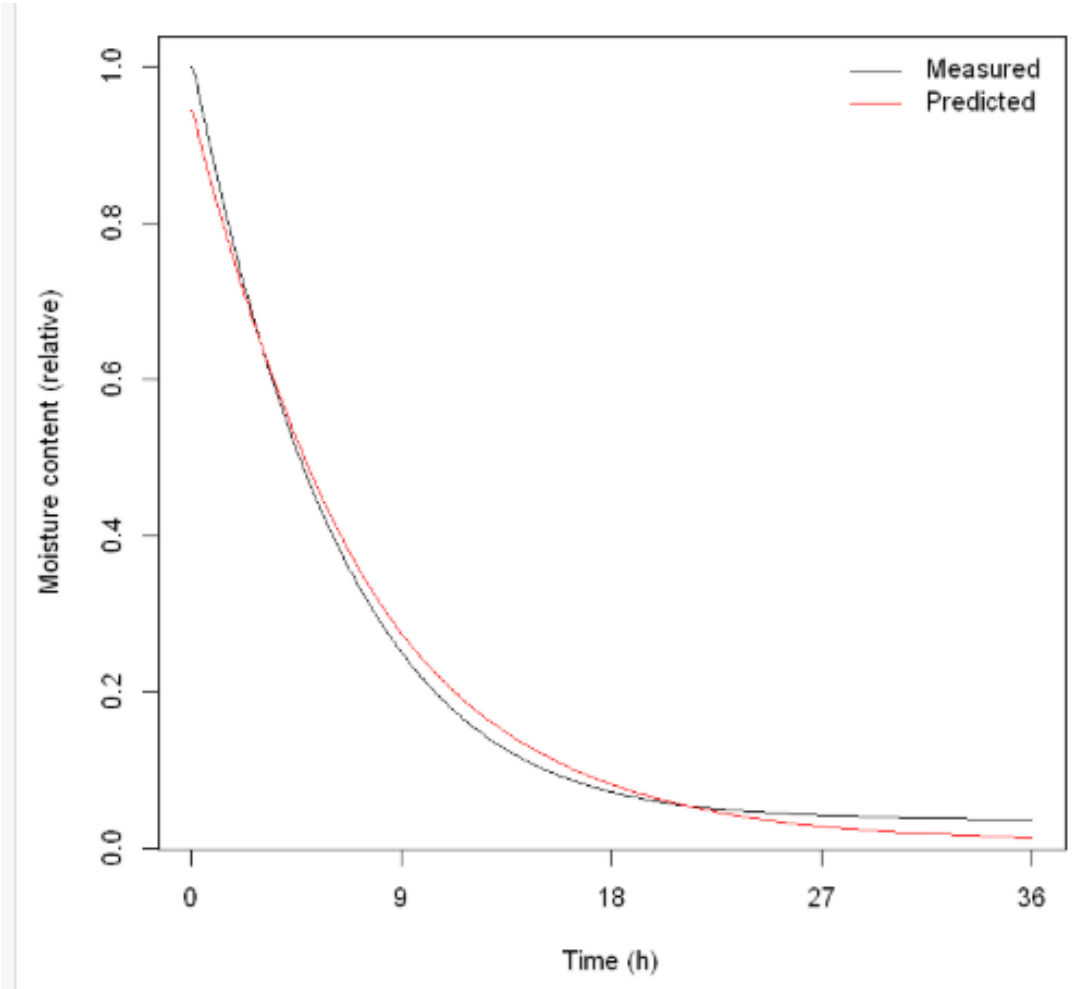

Yellowness (b*)
50
45
40
35
30
0
9
18
27
36
Time (h)

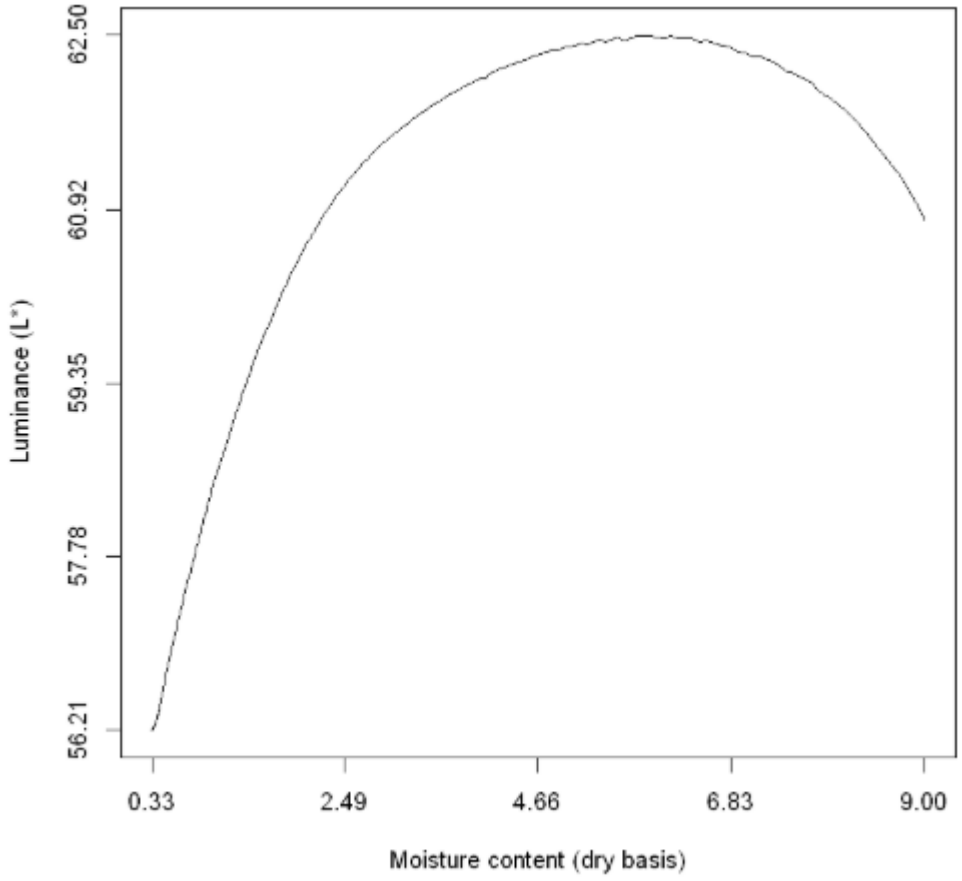

Area shrinkage
1.0
0.8
0.6
0.4
0
9
18
27
36
Time (h)

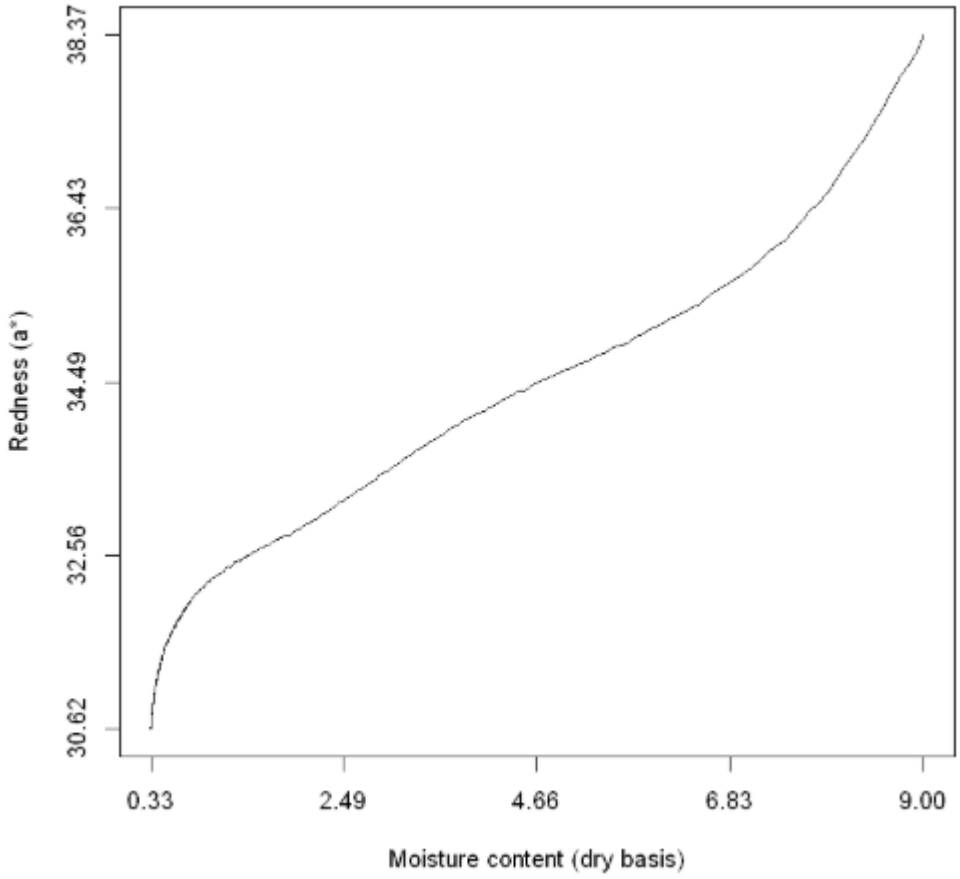

Weight (g)
300
250
200
150
100
50
0
9
18
27
36
Time (h)

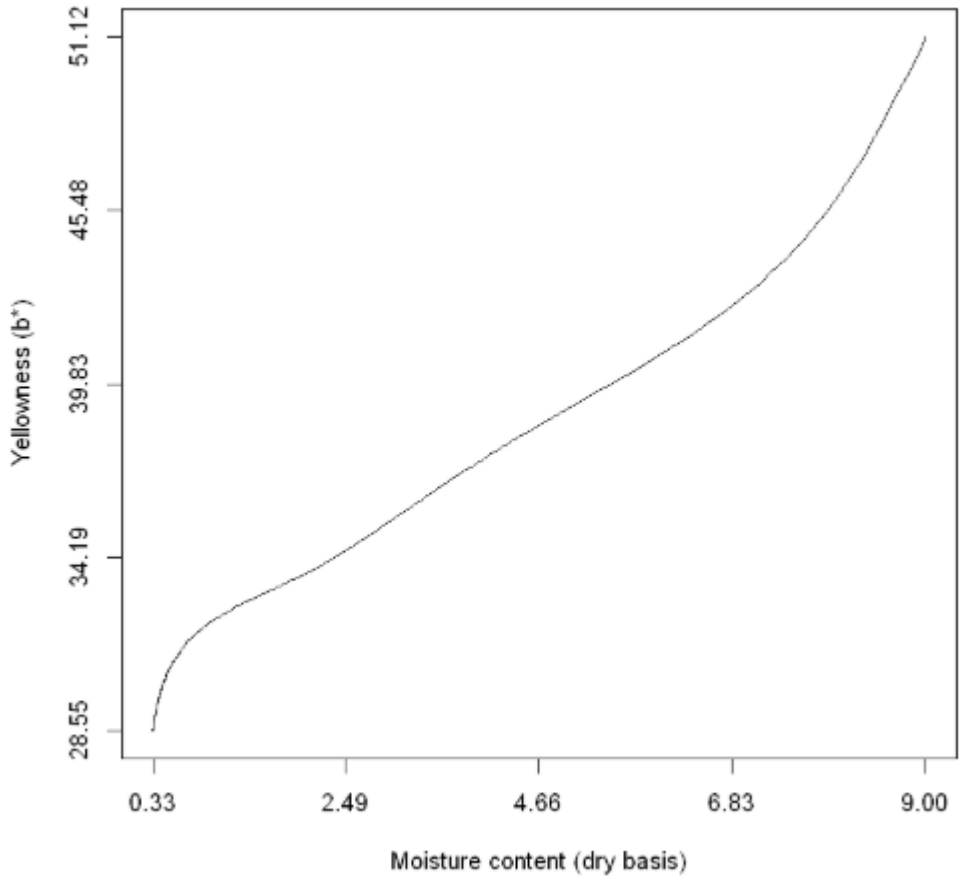

Moisture content (relative)
1.00
0.76
0.52
0.28
0.04
0.28
0.46
0.64
0.82
1.00
Area shinkrage (relative)

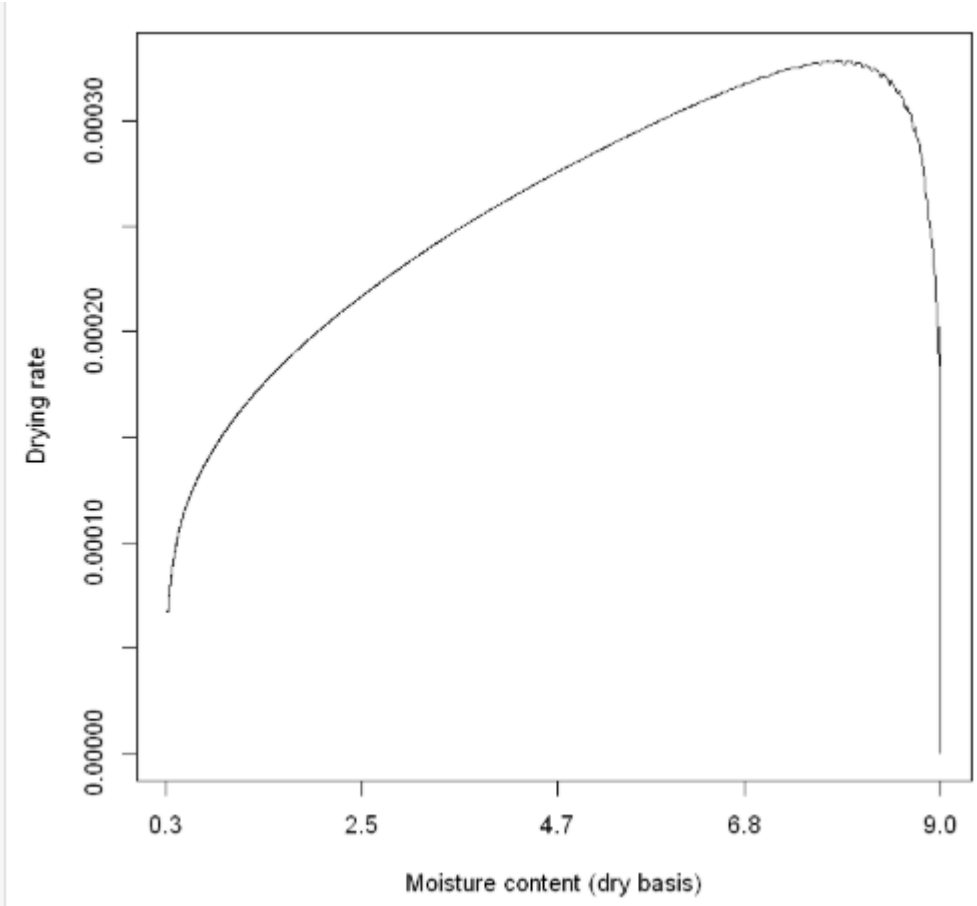
```
Call:
lm(formula = y.lm ~ x.lm)

Residuals:
     Min       1Q   Median       3Q      Max
-0.02520 -0.01934 -0.00067  0.01718  0.05659

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) -0.342460   0.002304  -148.7   <2e-16 ***
x.lm         1.286694   0.005051   254.8   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.01931 on 431 degrees of freedom
Multiple R-squared:  0.9934, Adjusted R-squared:  0.9934
F-statistic: 6.49e+04 on 1 and 431 DF,  p-value: < 2.2e-16
```




Luminance (L*)
62.50
60.92
59.35
57.78
56.21
0.33
2.49
4.66
6.83
9.00
Moisture content (dry basis)


Redness (a*)
38.37
36.43
34.49
32.56
30.62
0.33
2.49
4.66
6.83
9.00
Moisture content (dry basis)


Yellowness (b*)
28.55
34.19
39.83
45.48
51.12
0.33
2.49
4.66
6.83
9.00
Moisture content (dry basis)


Drying rate
0.00000
0.00010
0.00020
0.00030
0.3
2.5
4.7
6.8
9.0
Moisture content (dry basis)

```
***Regression Model with Segmented Relationship(s)***

Call:
segmented.lm(obj = fit, seg.Z = ~x.lm, npsi = 1)

Estimated Break-Point(s):
            Est. St.Err
psi1.x.lm 0.401  0.002

Meaningful coefficients of the linear terms:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -0.20144    0.00333  -60.49   <2e-16 ***
x.lm         0.84457    0.01072   78.77   <2e-16 ***
U1.x.lm      0.56474    0.01109   50.91       NA
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.006007 on 429 degrees of freedom
Multiple R-Squared: 0.9994,  Adjusted R-squared: 0.9994

Convergence attained in 4 iter. (rel. change 0)
```

**$x.lm =**

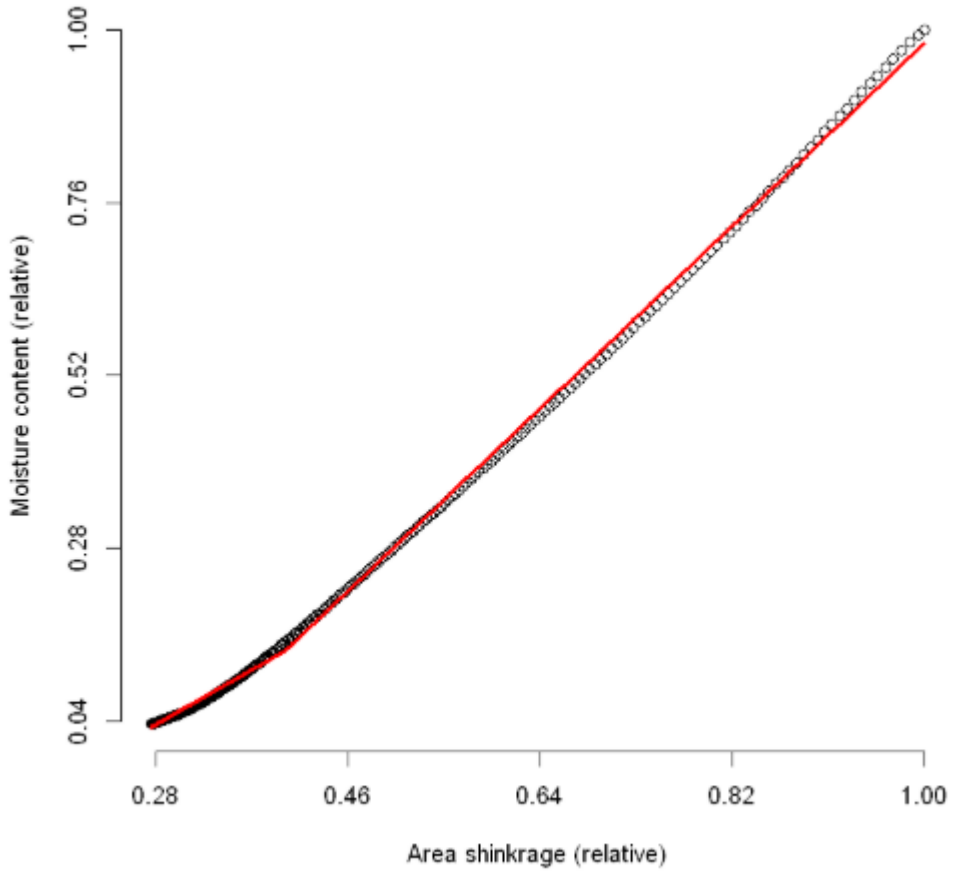
A matrix: 2 × 5 of type dbl

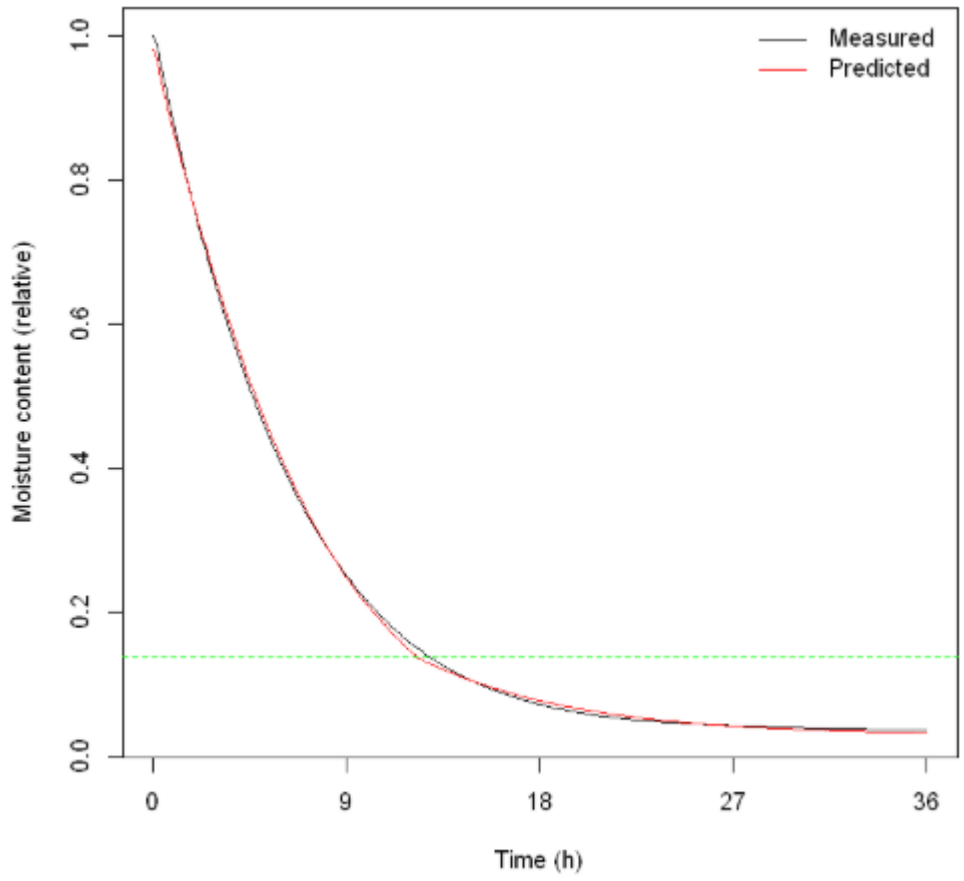
| | Est. | St.Err. | t value | CI(95%).l | CI(95%).u |
|---|---|---|---|---|---|
| **slope1** | 0.84457 | 0.0107230 | 78.765 | 0.82349 | 0.86564 |
| **slope2** | 1.40930 | 0.0028458 | 495.230 | 1.40370 | 1.41490 |

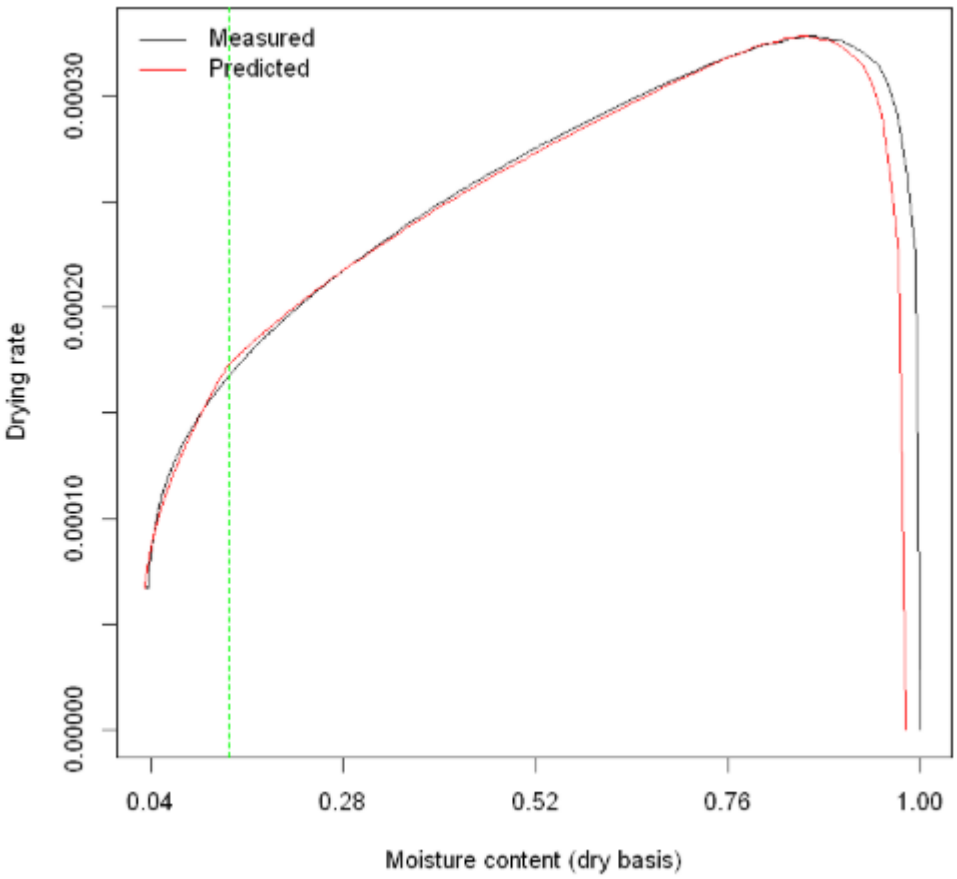
**$x.lm =**

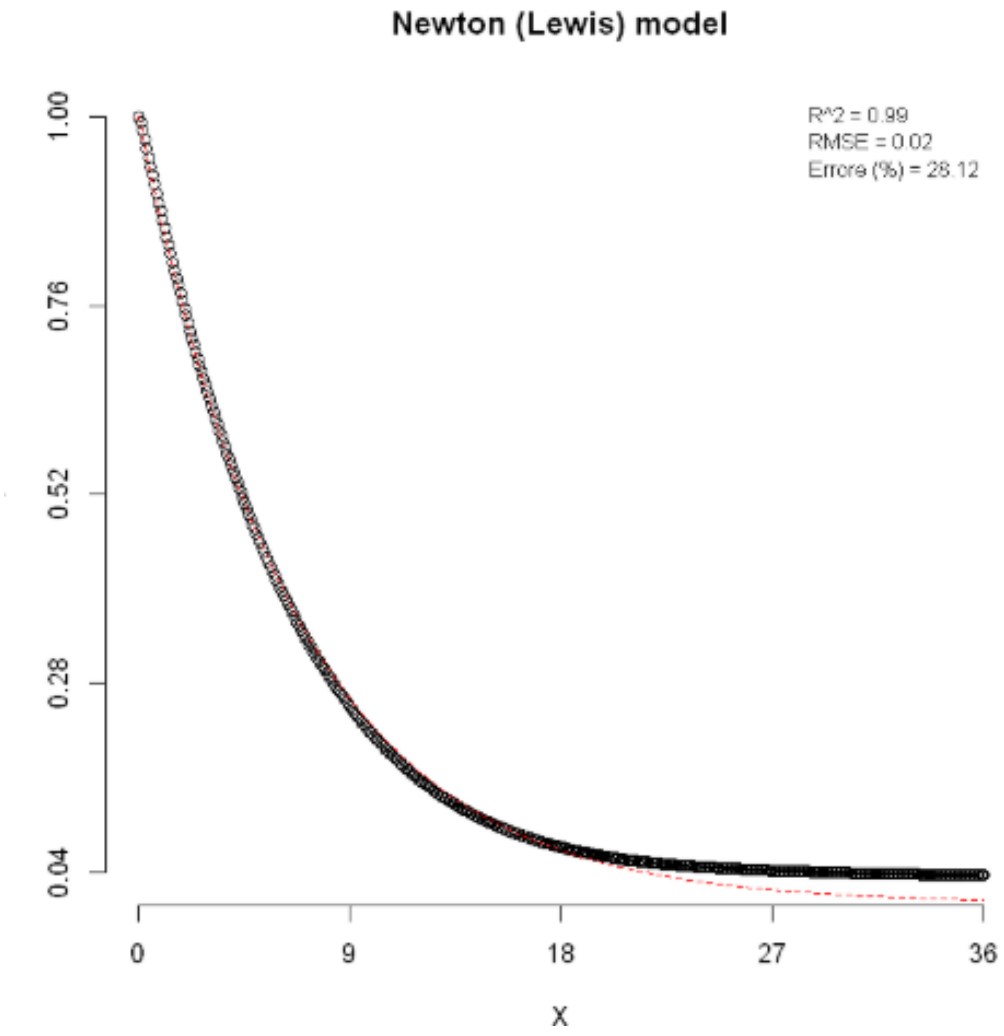
A matrix: 2 × 1 of type dbl

| | Est. |
|---|---|
| **intercept1** | -0.20144 |
| **intercept2** | -0.42796 |

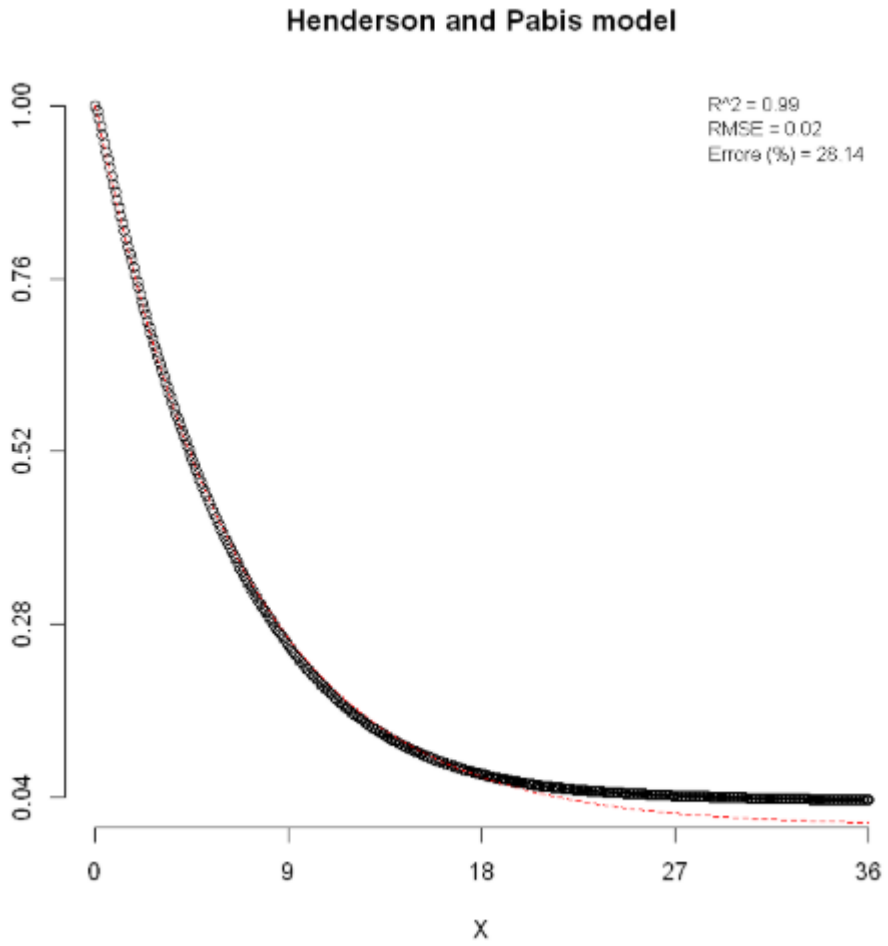

Moisture content (relative)
0.04
0.28
0.52
0.76
1.00
0.28
0.46
0.64
0.82
1.00
Area shinkrage (relative)


Measured
Predicted
Moisture content (relative)
0.0
0.2
0.4
0.6
0.8
1.0
0
9
18
27
36
Time (h)

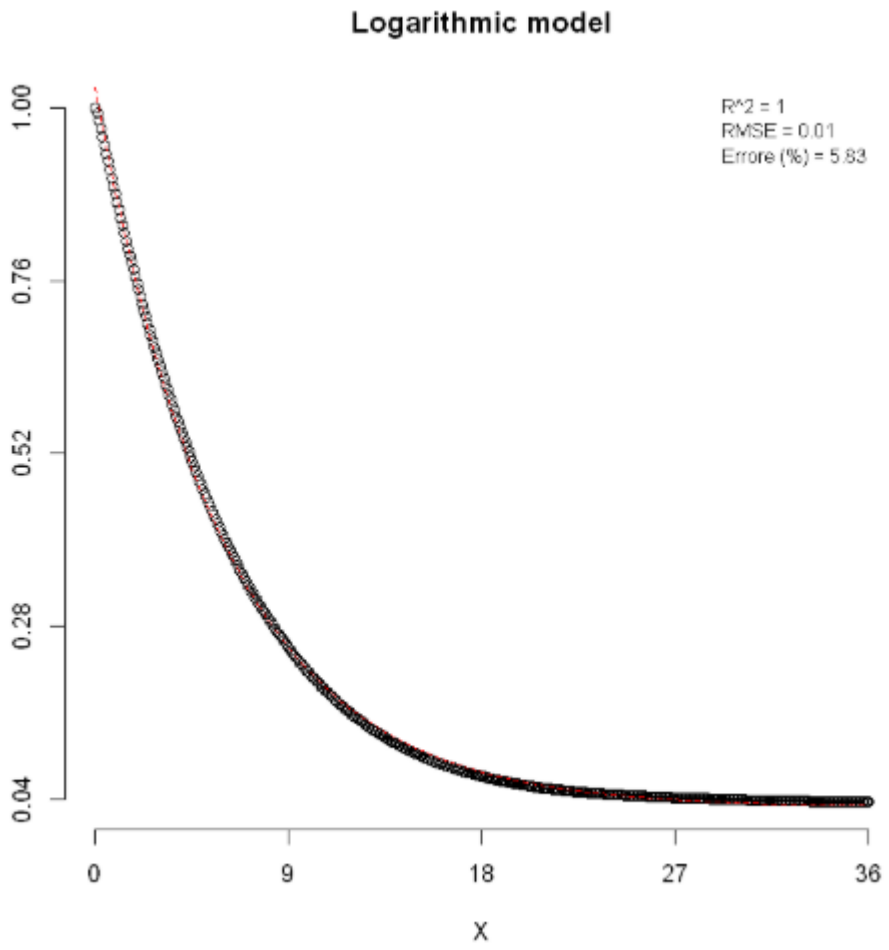

Measured
Predicted
Drying rate
0.00000
0.00010
0.00020
0.00030
0.04
0.28
0.52
0.76
1.00
Moisture content (dry basis)



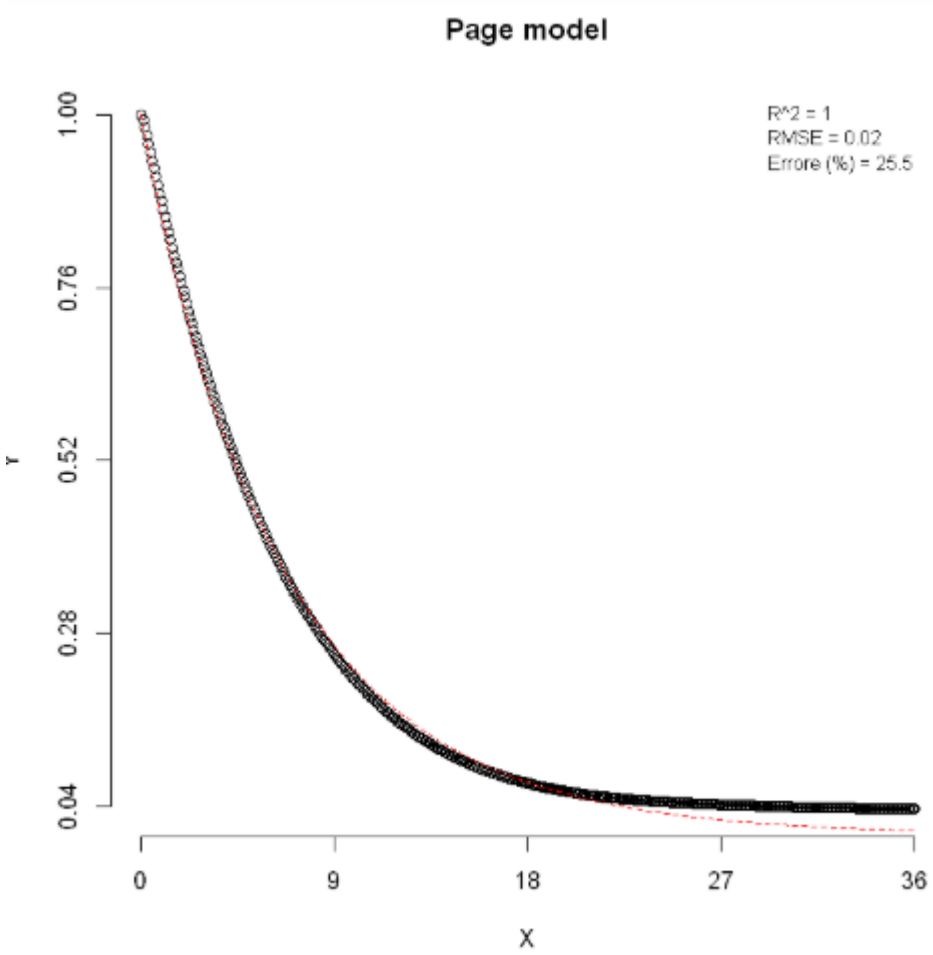

```
Formula: y ~ exp(-k * x)

Parameters:
   Estimate Std. Error t value Pr(>|t|)
k 0.1495709  0.0005805   257.7   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.01737 on 432 degrees of freedom

Number of iterations to convergence: 8
Achieved convergence tolerance: 1.298e-06
```




```
Formula: y ~ a * exp(-k * x)

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 1.0005305  0.0038376   260.7   <2e-16 ***
k 0.1496533  0.0008174   183.1   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.01739 on 431 degrees of freedom

Number of iterations to convergence: 5
Achieved convergence tolerance: 1.625e-06
```




```
Formula: y ~ a * exp(-k * x) + c

Parameters:
   Estimate Std. Error t value Pr(>|t|)
a 0.9992024  0.0013270  752.96   <2e-16 ***
k 0.1671880  0.0004321  386.90   <2e-16 ***
c 0.0282819  0.0004571   61.87   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.005697 on 430 degrees of freedom

Number of iterations to convergence: 6
Achieved convergence tolerance: 7.114e-07
```




```
Formula: y ~ exp(-k * x^n)

Parameters:
  Estimate Std. Error t value Pr(>|t|)
k 0.161045   0.002060   78.19   <2e-16 ***
n 0.964513   0.005717  168.71   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.01676 on 431 degrees of freedom

Number of iterations to convergence: 7
Achieved convergence tolerance: 1.926e-06
```