ANÁLISIS TEMPORAL DE EPIDEMIAS:
Aplicación práctica

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Regresión lineal

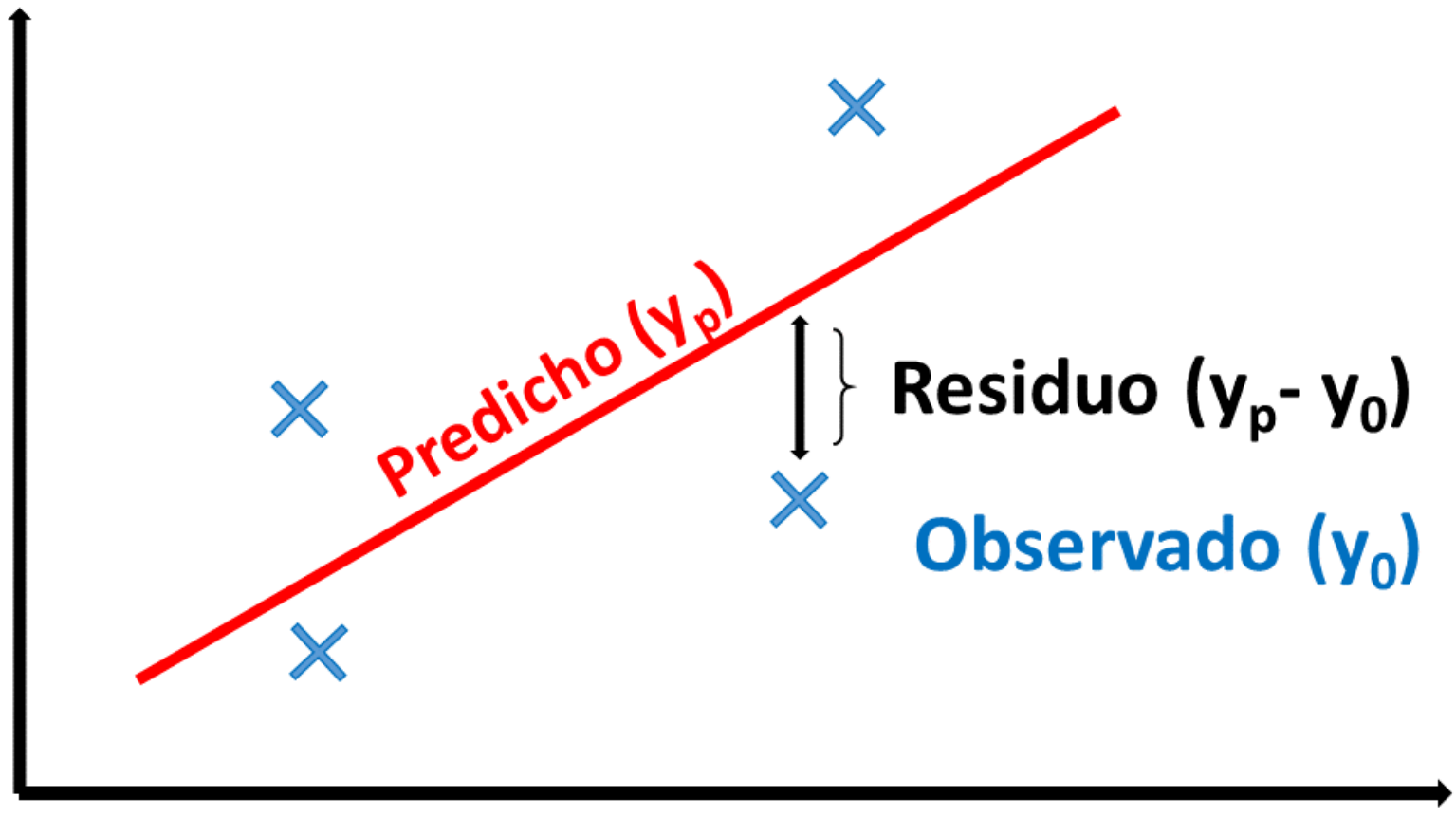
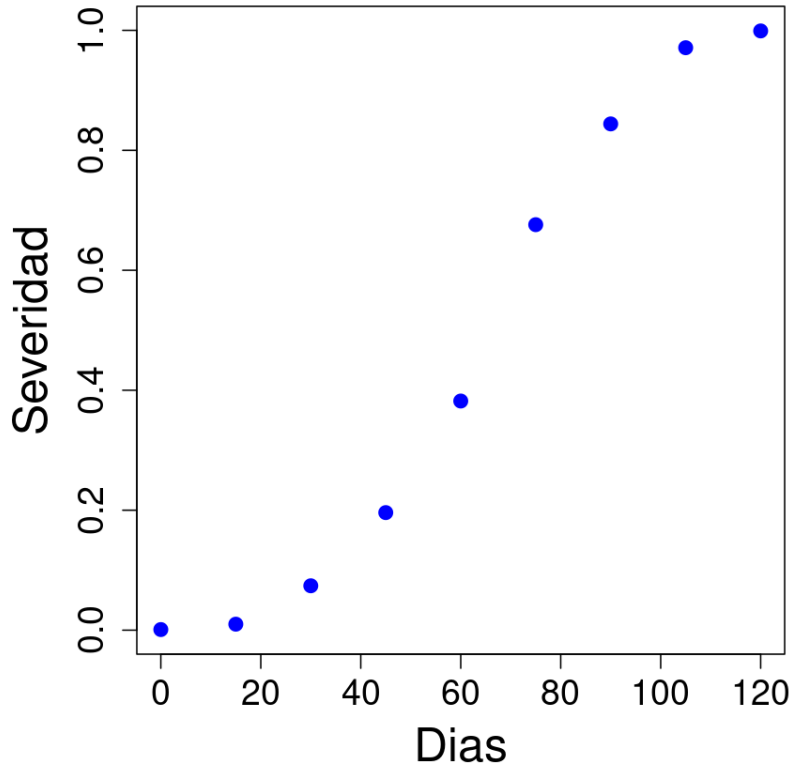
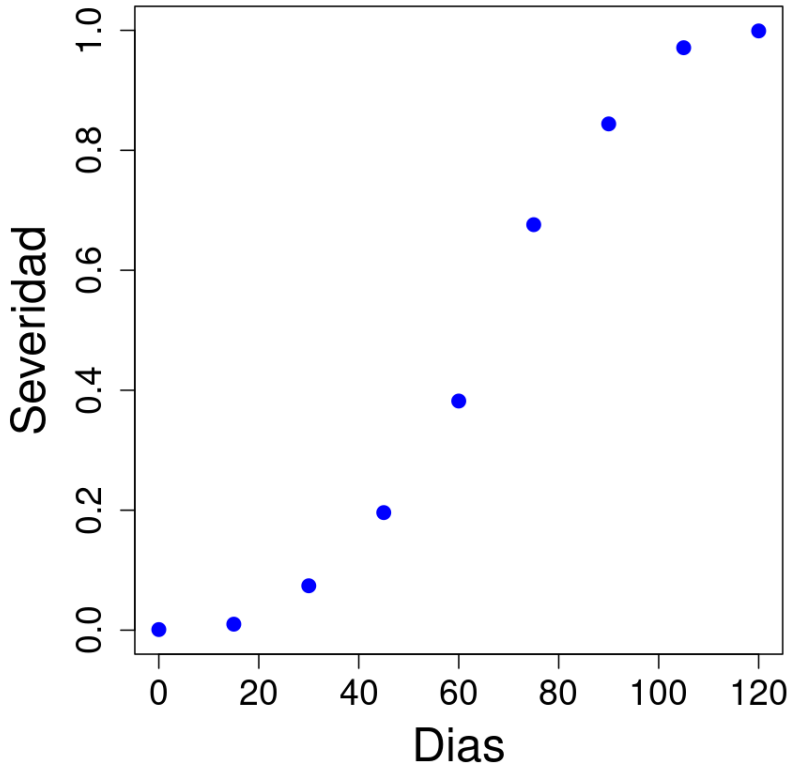


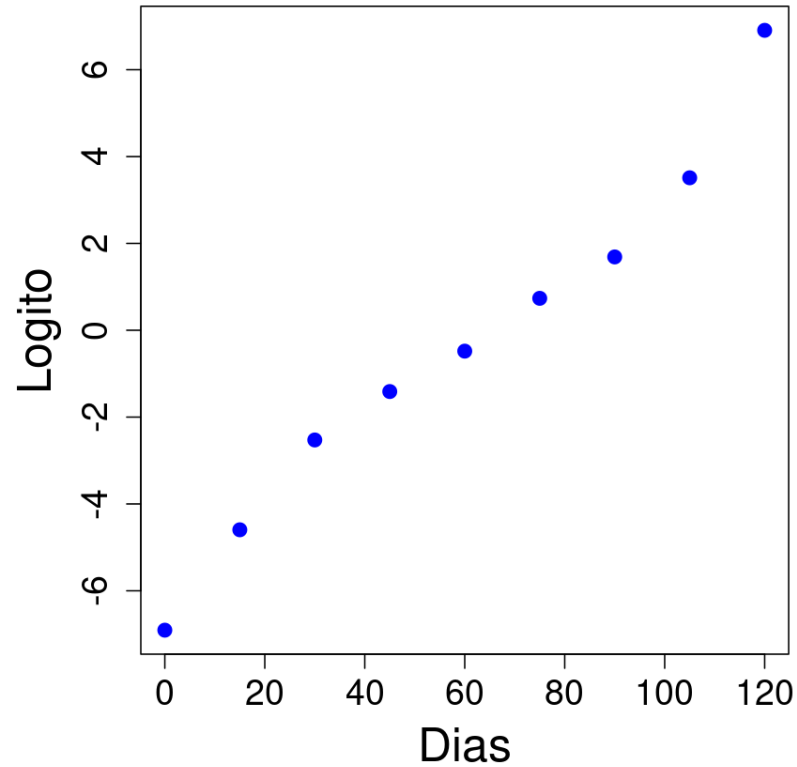
Figure 1: Regresión linear - residuos

Ejemplo 1

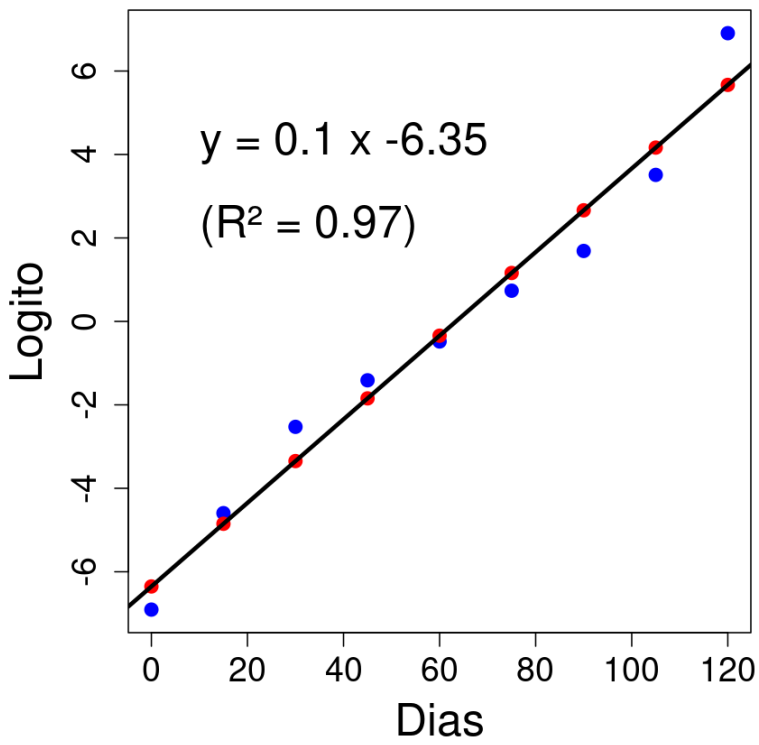
Dias	Severidad
0	0.001
15	0.010
30	0.074
45	0.196
60	0.382
75	0.676
90	0.844
105	0.971
120	0.999




Severidad
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
120
Dias


Logito
-6
-4
-2
0
2
4
6
0
20
40
60
80
100
120
Dias

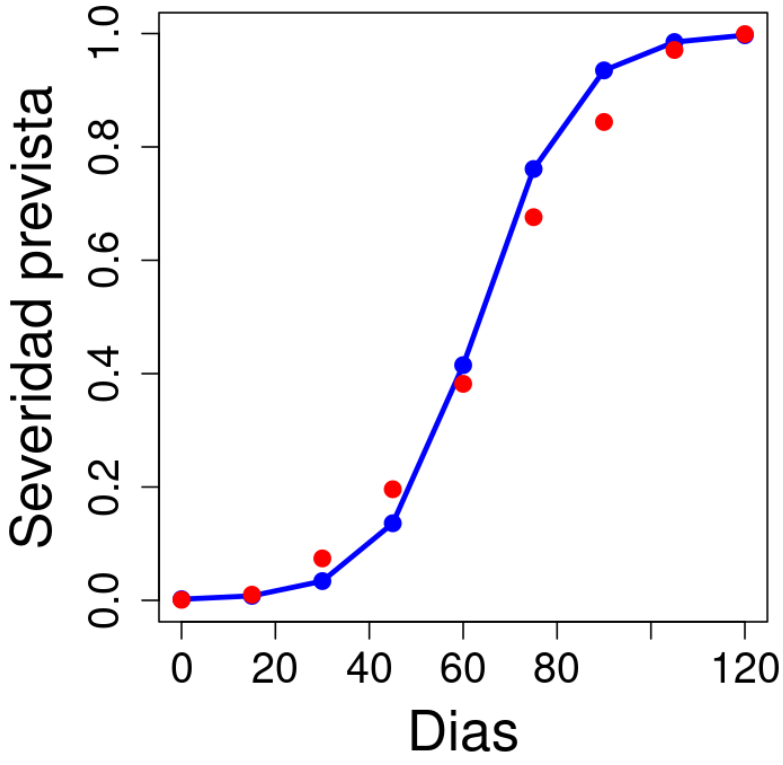
Dias	Sev	logito	Predicho
0	0.001	-6.91	-6.35
15	0.010	-4.60	-4.85
30	0.074	-2.53	-3.35
45	0.196	-1.41	-1.84
60	0.382	-0.48	-0.34
75	0.676	0.74	1.16
90	0.844	1.69	2.66
105	0.971	3.51	4.17
120	0.999	6.91	5.67

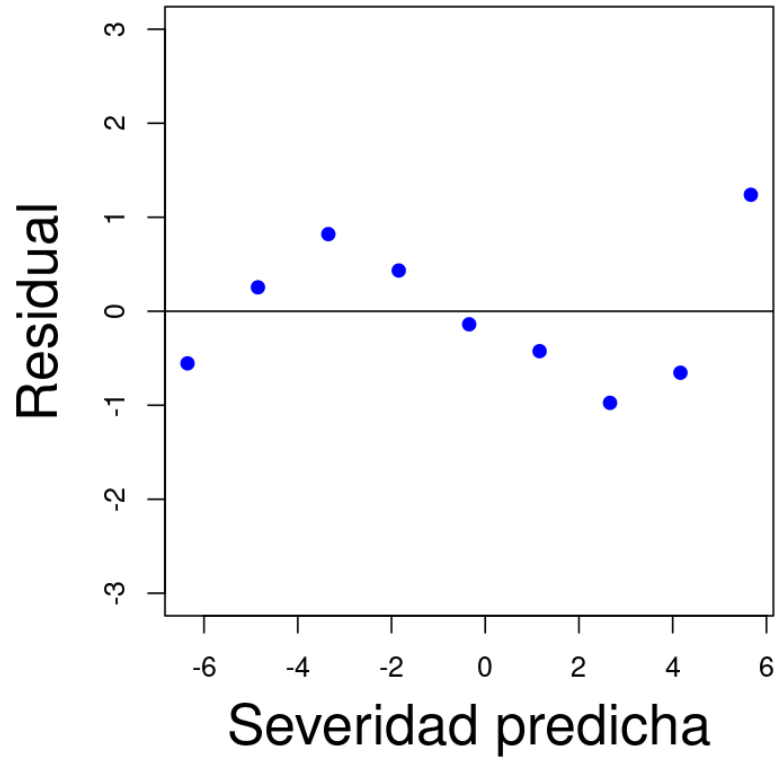


$$r = \frac{(5{,}67-(-6{,}35))}{120} = 0,1/dia \qquad y_0 = -6,35$$

Dias	Sev	logito	Predicho	Sev_prevista
0	0.001	-6.91	-6.35	0.002
15	0.010	-4.60	-4.85	0.008
30	0.074	-2.53	-3.35	0.034
45	0.196	-1.41	-1.84	0.136
60	0.382	-0.48	-0.34	0.415
75	0.676	0.74	1.16	0.761
90	0.844	1.69	2.66	0.935
105	0.971	3.51	4.17	0.985
120	0.999	6.91	5.67	0.997

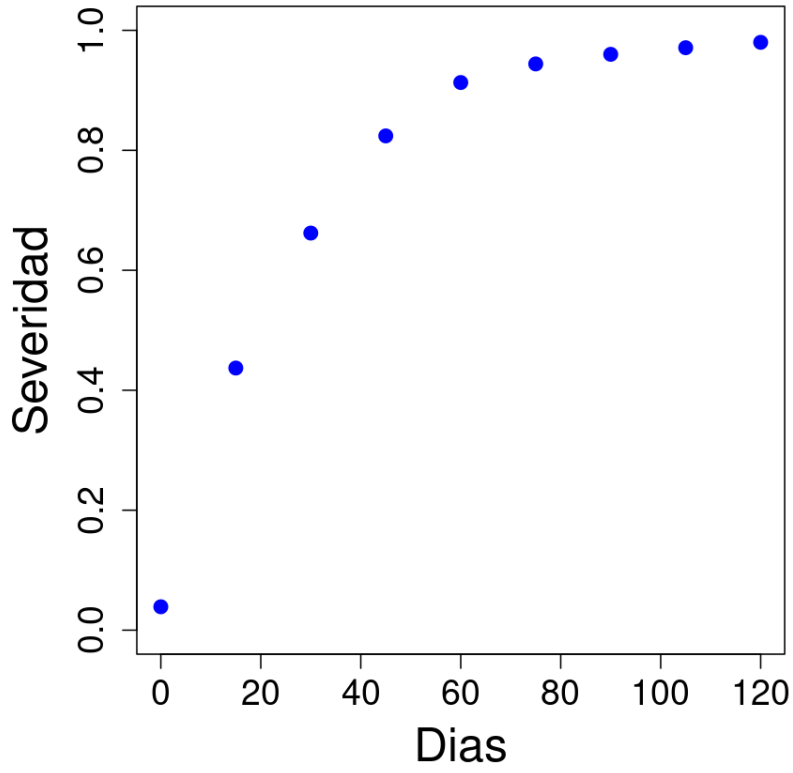
$$y_p = \frac{exp(logito\ y)}{1+exp(logito\ y)}$$

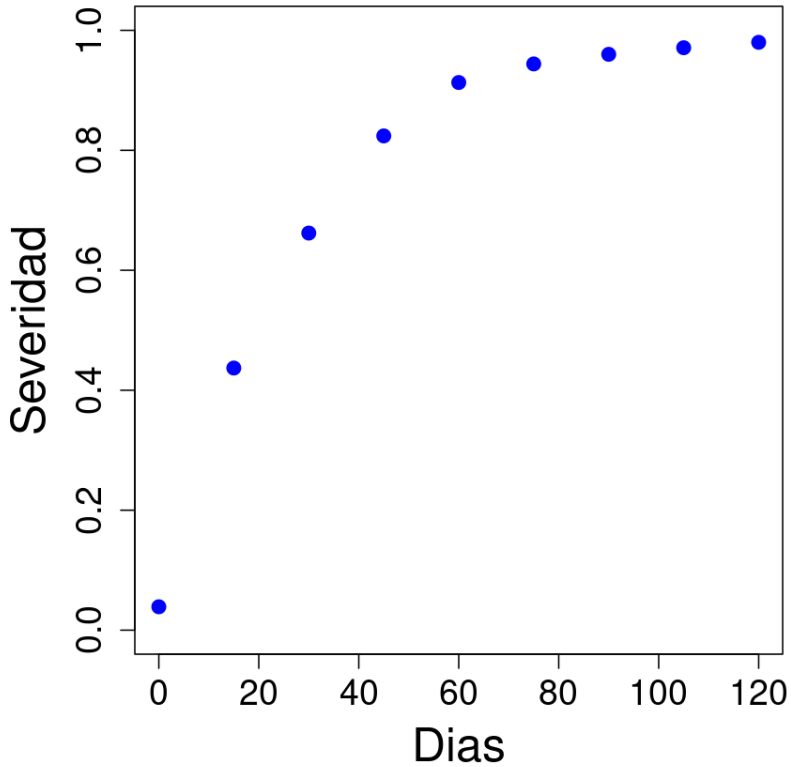

Severidad prevista
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
120
Dias

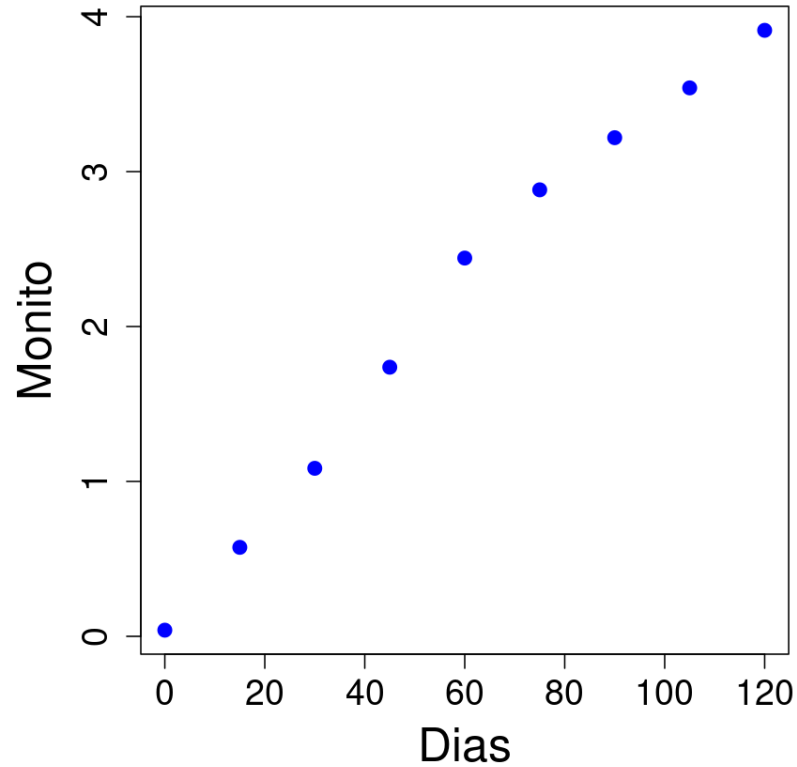

Residual
-3
-2
-1
0
1
2
3
-6
-4
-2
0
2
4
6
Severidad predicha

Ejemplo 2

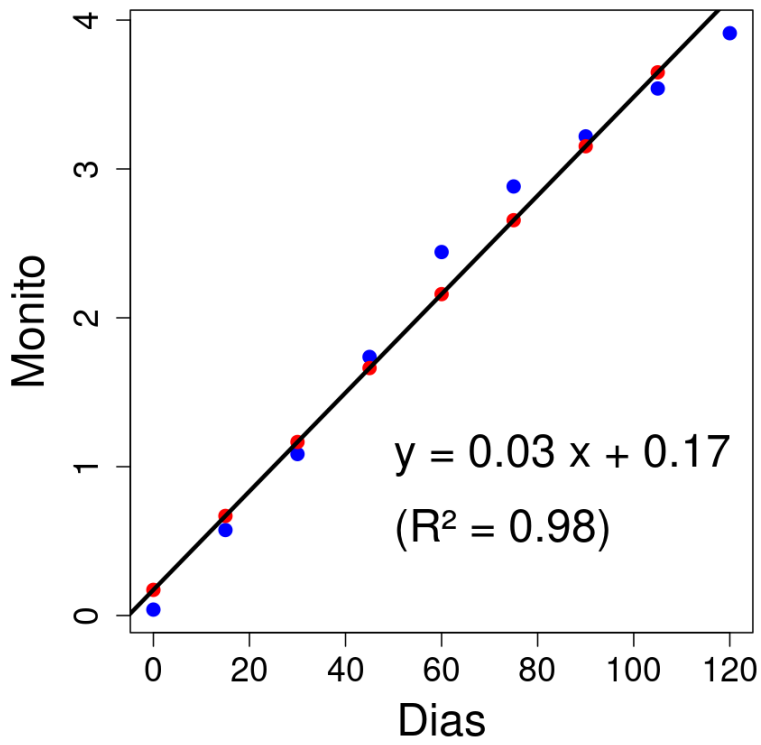
Dias	Severidad
0	0.04
15	0.44
30	0.66
45	0.82
60	0.91
75	0.94
90	0.96
105	0.97
120	0.98




Severidad
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
120
Dias


Monito
0
1
2
3
4
0
20
40
60
80
100
120
Dias

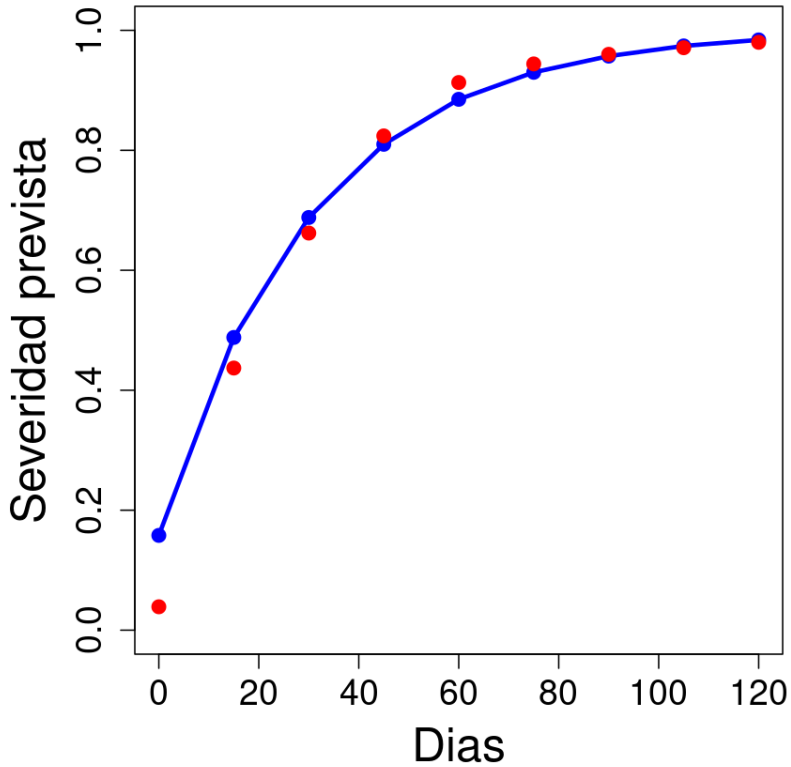
Dias	Sev	monito	Predicho
0	0.039	0.04	0.17
15	0.437	0.57	0.67
30	0.662	1.08	1.17
45	0.824	1.74	1.66
60	0.913	2.44	2.16
75	0.944	2.88	2.66
90	0.960	3.22	3.15
105	0.971	3.54	3.65
120	0.980	3.91	4.15

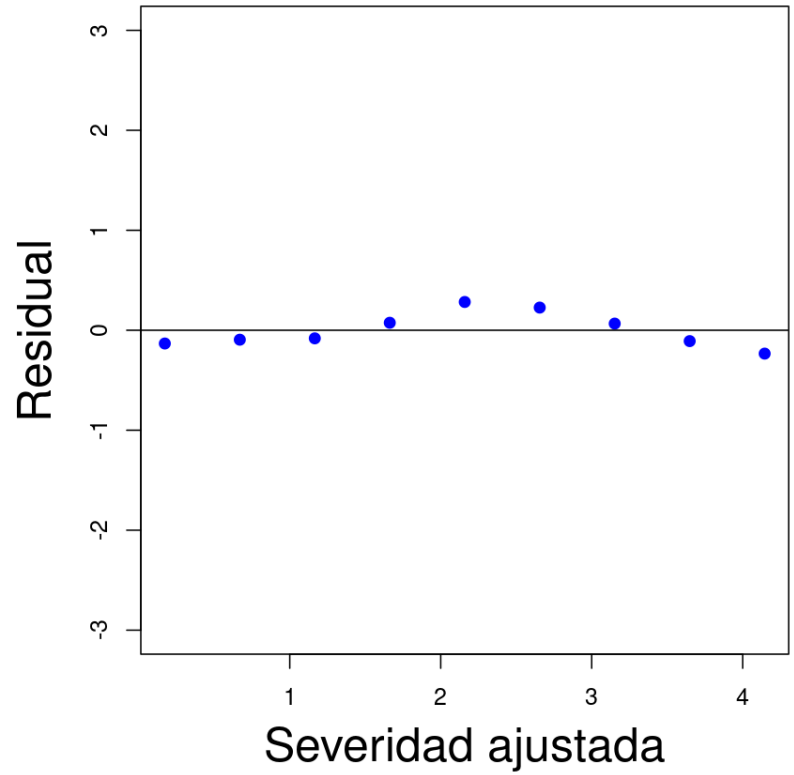


$$r = \frac{(4{,}15-(-0{,}17))}{120} = 0,03/dia \qquad y_0 = 0,17$$

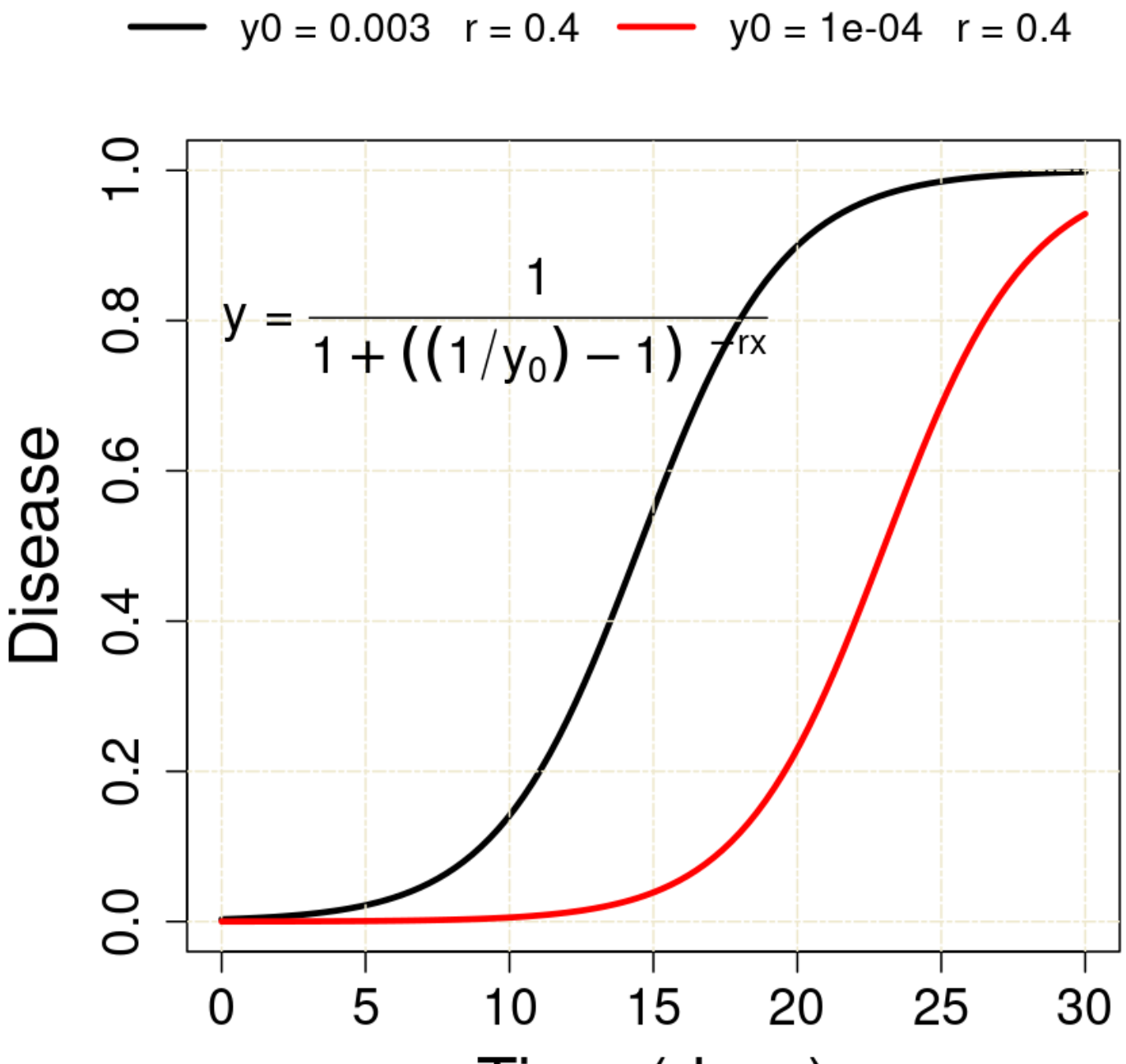
Dias	Sev	monito	Predicho	Sev_prevista
0	0.039	0.04	0.17	0.158
15	0.437	0.57	0.67	0.488
30	0.662	1.08	1.17	0.688
45	0.824	1.74	1.66	0.810
60	0.913	2.44	2.16	0.885
75	0.944	2.88	2.66	0.930
90	0.960	3.22	3.15	0.957
105	0.971	3.54	3.65	0.974
120	0.980	3.91	4.15	0.984

$$y_p = \frac{exp\ (monito\ y)-1}{exp\ (monito\ y))}$$

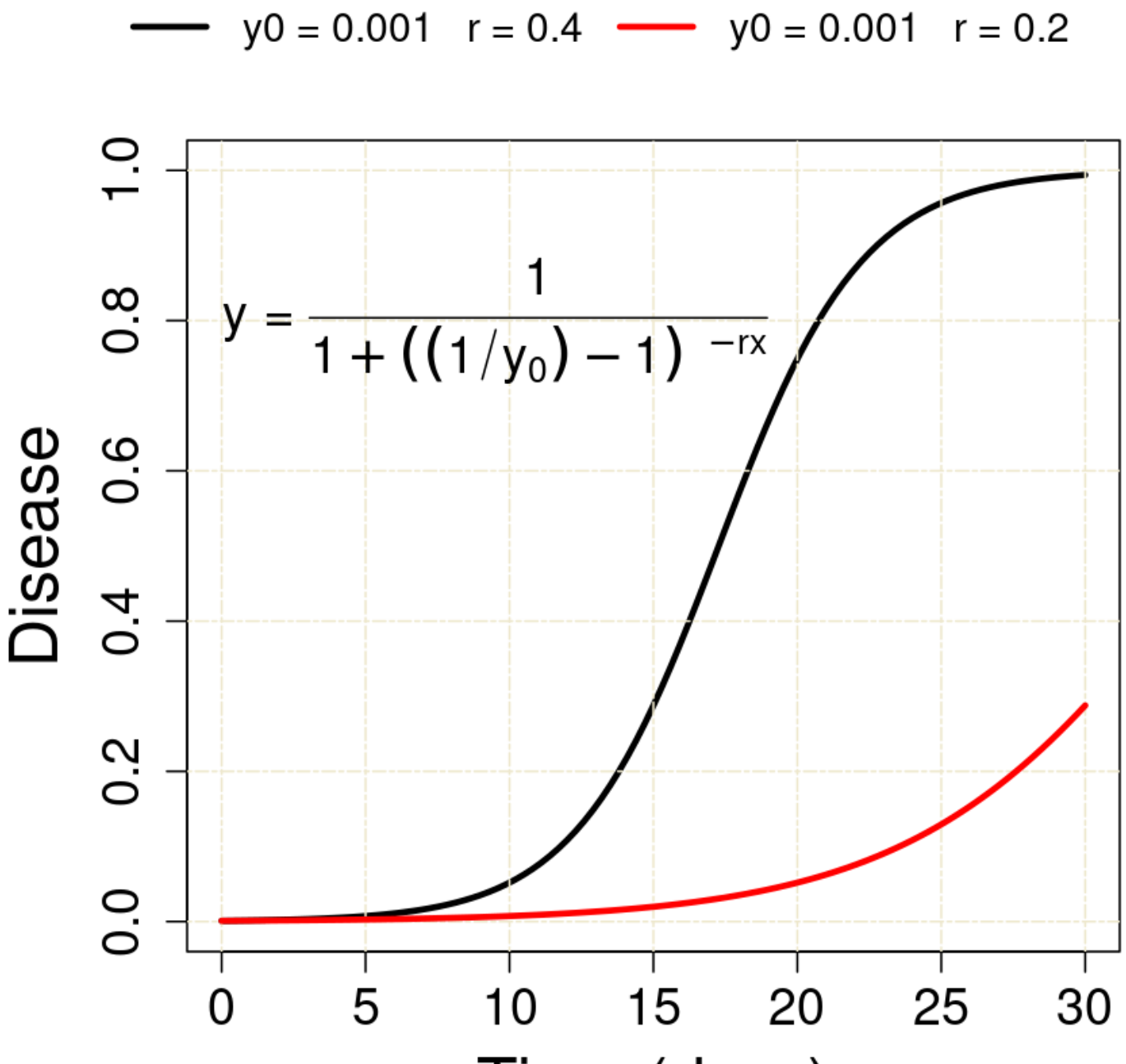

Severidad prevista
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
120
Dias


Residual
-3
-2
-1
0
1
2
3
1
2
3
4
Severidad ajustada

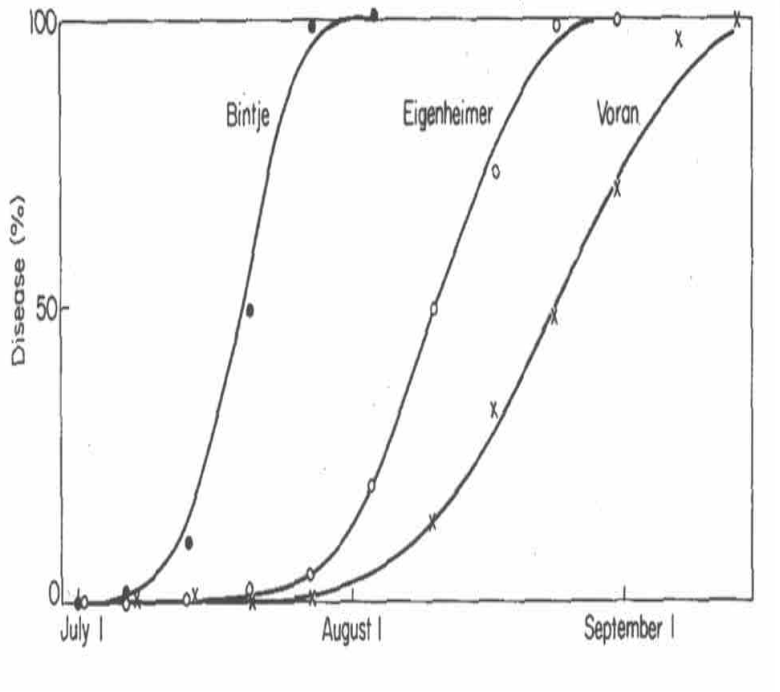
Efecto de reducción de y_0

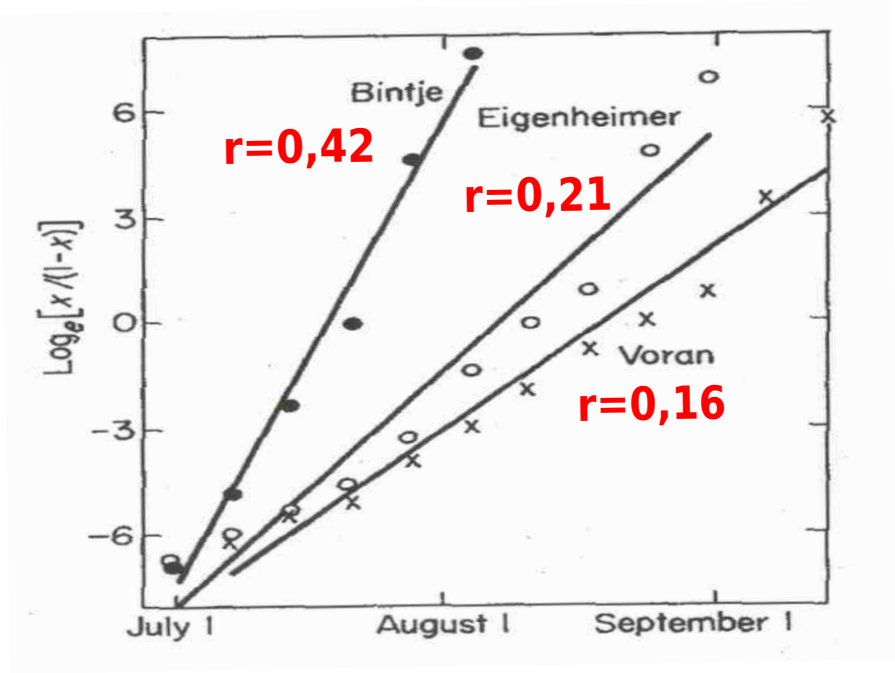


Efecto de reducción de *r*



Resistencia genética (horizontal)





{Vanderplank (1963)}

Aplicación de fungicidas