**S1 File**

***Algebraic and numerical matrix representation of the life cycle diagram of Fig.2.***

P1 0 0 0 0 0 F 0 0 0 0 0 F\*

G1P2\*(1-f2) 0 0 0 0 0 0 0 0 0 0 0

0 G2\*(1-f2) P3\*(1-f3) 0 0 0 0 0 0 0 0 0 0

0 0 G3\*(1-f3) P4\*(1-f4) 0 0 0 0 0 0 0 0 0

0 0 0 G4\*(1-f4) P5\*(1-f5) 0 0 0 0 0 0 0 0

0 0 0 0 G5\*(1-f5) P6\*(1-f6) 0 0 0 0 0 0 0

0 0 0 0 0 G6\*(1-f6) P7\*(1-f7) 0 0 0 0 0 0

0 P2\*f2 0 0 0 0 0 P2\****θ***2 0 0 0 0 0

0 0 P3\*f3 0 0 0 0 G2\****θ***2P3\****θ***3 0 0 0 0

0 0 0 P4\*f4 0 0 0 0 G3\****θ***3P4\****θ***4 0 0 0

0 0 0 0 P5\*f5 0 0 0 0 G4\****θ***4P5\****θ***5 0 0

0 0 0 0 0 P6\*f6 0 0 0 0 G5\****θ***5P6\****θ***6 0

0 0 0 0 0 0 P7\*f7 0 0 0 0 G6\****θ***6P7\****θ***7

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0.9474 | 0 | 0 | 0 | 0 | 0 | 0.86 | 0 | 0 | 0 | 0 | 0 | 0.51 |
| 0.0437 | 0.9293 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0.0425 | 0.9378 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0.0357 | 0.9460 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0.0284 | 0.9542 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0.0212 | 0.9630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0.0131 | 0.9743 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0.0206 | 0 | 0 | 0 | 0 | 0 | 0.3404 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0.0208 | 0 | 0 | 0 | 0 | 0.0156 | 0.5000 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0.0210 | 0 | 0 | 0 | 0 | 0.0190 | 0.5861 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0.0211 | 0 | 0 | 0 | 0 | 0.0176 | 0.8098 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0.0213 | 0 | 0 | 0 | 0 | 0.0180 | 0.8551 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0.0216 | 0 | 0 | 0 | 0 | 0.0116 | 0.8966 |

**Figure A.** Symbolic projection matrix for a *T. infestans* population with infected and non-infected individuals and the probability transitions among them. The asterisk represents the multiplication operation (except for F\*, that represented the fecundity of infected females). Symbols and parameter identification are given in the main text.

**Figure B.** Numerical projection matrix for a *T. infestans* population with infected and non-infected individuals and the probability transitions among them. This matrix is shown only for the purpose of illustration, and corresponds to the symbolic matrix of Fig. 1 for the following parameter values: number of boxes = *n* = 1, box efficacy = 0.1, horizontal transmission rate = *r* = 0.01825, probability of one box attracting an individual per unit time = *cn*= α = 0.0355, force of attraction of all boxes = *f* = 0.02167.