**Supplementary Material**

Equations S2. Infection dynamics model.

$$z\_{i,j}∼Bernoulli\left(q\_{i,j}\right)$$

$$logit\left(q\_{i,j}\right)=a\_{j}+b\_{s}s\_{i,j}+b\_{f}f\_{i,j}+b\_{T}T\_{i,j}^{m}+b\_{sf}s\_{i,j}f\_{i,j}+b\_{sT}s\_{i,j}T\_{i,j}^{m}+b\_{fT}f\_{i,j}T\_{i,j}^{m}+b\_{sfT}s\_{i,j}f\_{i,j}T\_{i,j}^{m}$$

$$a\_{j}\~Normal\left(-3,1\right)$$

$$b\_{s}, b\_{f},b\_{T},b\_{sf,}b\_{sT},b\_{fT},b\_{sfT}\~Normal(0, 5)$$

$a\_{j}$: We expected the effects of the variables considered would imply midpoint of the logistic curve at a value >0 since all the considered variables were usually >0.

$b\_{s}, b\_{f},b\_{T},b\_{sf,}b\_{sT},b\_{fT},b\_{sfT}$: Although we expected all the considered variables to have positive effects on infection probability, we had no clear previous information on the magnitude of such effects. Thus, we chose this very non-restrictive normal prior.