Supporting Information Text S3

Modeling results for foxes of all ages

This is similar to Table 1 in the main manuscript but for the models fitting to the data from foxes of all ages.

Model	Description	Prior for μ	Log marginal likelihood
1-C	no immunity ($\alpha = 0$) Constant FOI: $\log \beta(a) = \beta_0$	$N(1.2, 0.2)$ $N(1.3, 0.3)$	-354.6 ($\Delta_{ML} = 22.8$) -354.0 ($\Delta_{ML} = 21.6$)
1-L	no immunity ($\alpha = 0$) Linear FOI: $\log \beta(a) = \beta_0 + \beta_1 a$	$N(1.2, 0.2)$ $N(1.3, 0.3)$	-360.6 ($\Delta_{ML} = 34.8$) -359.6 ($\Delta_{ML} = 32.8$)
1-Q	no immunity ($\alpha = 0$) Quadratic FOI: $\log \beta(a) = \beta_0 + \beta_1 a + \beta_2 a^2$	$N(1.2, 0.2)$ $N(1.3, 0.3)$	-365.5 ($\Delta_{ML} = 44.6$) -365.1 ($\Delta_{ML} = 43.8$)
1-P	no immunity ($\alpha = 0$) Periodic FOI: $\log\{\beta(a)\} = \beta_0 + \beta_1 \sin\left\{2\pi\left(a - \frac{\exp(a_s)}{1+\exp(a_s)}\right)\right\}$	$N(1.2, 0.2)$ $N(1.3, 0.3)$	-343.3 ($\Delta_{ML} = 0.2$) -343.2 ($\Delta_{ML} = 0.0$)
2	lifelong immunity ($\gamma = 0$) periodic FOI: $\log\{\beta(a)\} = \beta_0 + \beta_1 \sin\left\{2\pi\left(a - \frac{\exp(a_s)}{1+\exp(a_s)}\right)\right\}$	$N(1.2, 0.2)$ $N(1.3, 0.3)$	-344.6 ($\Delta_{ML} = 2.8$) -344.8 ($\Delta_{ML} = 3.2$)
3	transient immunity ($\gamma \neq 0$) periodic FOI: $\log\{\beta(a)\} = \beta_0 + \beta_1 \sin\left\{2\pi\left(a - \frac{\exp(a_s)}{1+\exp(a_s)}\right)\right\}$	$N(1.2, 0.2)$ $N(1.3, 0.3)$	-345.7 ($\Delta_{ML} = 5.0$) -349.3 ($\Delta_{ML} = 12.2$)