

**S1 Table. Two parasite population CTMC transition matrix.**

Event	$M_1$	$M_2$	$F_1$	$F_2$	$Z_1$	$Z_2$	$Z_3$	$Z_4$	$E_1$	$E_2$	$E_3$	$E_4$	$O_1$	$O_2$	$O_3$	$O_4$	$S_1$	$S_2$	$S_3$	$S_4$
<b>Death</b>	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0
<b>Fertilization</b>	-1	0	-1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-1	0	0	-1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	-1	-1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	-1	0	-1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<b>Stage Progression</b>	0	0	0	0	-1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	-1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	-1	0	0	0	1	0	0	0	0	0	0	0	0	0
	$Z \rightarrow E$	0	0	0	0	0	0	-1	0	0	0	1	0	0	0	0	0	0	0	0
<b>Stage Progression</b>	0	0	0	0	0	0	0	0	-1	0	0	0	1	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	-1	0	0	0	1	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	1	0	0	0	0	0
	$E \rightarrow O$	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	1	0	0	0	0
<b>Oocyst Rupture</b>	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	$n_1$	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	$n_2$	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	$n_3$	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	$n_4$