

Supplementary Table 2: Description of Parameter Values

Parameter	Description	Value(s)	References
g_1	Input of <i>S. mansoni</i> miracidia	500-10000 /week	(a)
g_2	Input of <i>C. sukari</i> miracidia	150000-250000 /week	(a)
e_1	Exposure rate of sink snails to <i>S. mansoni</i> miracidia	0.06/week	(a)
e_2	Exposure rate of juvenile <i>Biomphalaria</i> snails to <i>S. mansoni</i> miracidia	0.18/week	(a)
e_3	Exposure rate of adult <i>Biomphalaria</i> snails to <i>S. mansoni</i> miracidia	0.18/week	(a)
e_4	Exposure rate of sink snails to <i>C. sukari</i> miracidia	0.06/week	(a)
e_5	Exposure rate of juvenile <i>Biomphalaria</i> snails to <i>C. sukari</i> miracidia	0.18/week	(a)
e_6	Exposure rate of adult <i>Biomphalaria</i> snails to <i>C. sukari</i> miracidia	0.18/week	(a)
e_7	Exposure rate of juvenile <i>Biomphalaria</i> snails to simultaneous infection	0.0018/week	(a)
e_8	Exposure rate of adult <i>Biomphalaria</i> snails to simultaneous infection	0.0018/week	(a)
$1/y_1$	Prepatent period for <i>S. mansoni</i> infection	4.5 weeks	(1)
$1/y_2$	Prepatent period for <i>C. sukari</i> infection	4 weeks	(b)
$1/c_1$	Time until <i>Biomphalaria</i> castration with <i>S. mansoni</i> only infection	6 weeks	(2)
$1/c_2$	Time until <i>Biomphalaria</i> castration with <i>C. sukari</i> only infection	4 weeks	(b)
$1/c_3$	Time until <i>Biomphalaria</i> castration with dual infection	4 weeks	(b)
f_1	Fecundity per susceptible sink snail	14 eggs/week	(2,3,4,5,6)
f_2	Fecundity per susceptible <i>Biomphalaria</i> snail	20-3 eggs/week	(8,3,7,2,5)
f_3	Fecundity per adult <i>Biomphalaria</i> exposed or infected with <i>S. mansoni</i> or <i>C. sukari</i>	4.77 eggs/week	(3,4,7,2,5)
$1/a_1$	Duration of juvenile stage for susceptible <i>Biomphalaria</i>	7 weeks	(9,10,11)
$1/a_2$	Duration of juvenile stage for <i>Biomphalaria</i> exposed or infected with <i>S. mansoni</i>	9.8 weeks	(9,10,11)
$1/a_3$	Duration of juvenile stage for <i>Biomphalaria</i> exposed or infected with <i>C. sukari</i>	9.8-15 weeks	(9,10,11)
$1/a_4$	Duration of juvenile stage for simultaneously infected <i>Biomphalaria</i>	9.8-15 weeks	(9,10,11)
$1/d_1$	Lifespan of <i>S. mansoni</i> or <i>C. sukari</i> miracidia	4-16 hours	(9,12)
d_2	Mortality rate of susceptible snails	1/18.2 /week	(9,12)
d_3	Mortality rate of exposed or infected snails	1/8.1 /week	(8)
$1/d_4$	Lifespan of <i>S. mansoni</i> or <i>C. sukari</i> cercariae	8-20 hours	(13)
w	Liters of water in the environment	4180	(c)
m_1	Maximum number of <i>Biomphalaria</i> in the environment	2000	(c)
m_2	Maximum number of sink snails in the environment	500	c

Parameter	Description	Value(s)	References
u_1	Rate of uptake of <i>S. mansoni</i> cercariae by humans	.5% /week	a
u_2	Rate of uptake of <i>C. sukari</i> cercariae by humans	.5% /week	a
s_1	Rate of <i>S. mansoni</i> cercarial shedding for I_{jSm}	4125/week	(7,10)
s_2	Rate of <i>S. mansoni</i> cercarial shedding for I_{aSm}	5100/week	(b)
s_3	Rate of <i>S. mansoni</i> cercarial shedding for I_{jSi}	14/week	(b)
s_4	Rate of <i>S. mansoni</i> cercarial shedding for I_{jSmCs}	10/week	(b)
s_5	Rate of <i>S. mansoni</i> cercarial shedding for I_{aSmCs}	10/week	(b)
s_6	Rate of <i>S. mansoni</i> cercarial shedding for I_{jCsSm}	7/week	(b)
s_7	Rate of <i>S. mansoni</i> cercarial shedding for I_{aCsSm}	7/week	(b)
s_8	Rate of <i>S. mansoni</i> cercarial shedding for I_{aSi}	5100/week	(b)
s_9	Rate of <i>S. mansoni</i> cercarial shedding for I_{cSm}	140/week	(b)
s_{10}	Rate of <i>S. mansoni</i> cercarial shedding for I_{cSi}	140/week	(b)
s_{11}	Rate of <i>S. mansoni</i> cercarial shedding for I_{cSmCs}	14/week	(b)
s_{12}	Rate of <i>S. mansoni</i> cercarial shedding for I_{cCsSm}	10/week	(b)
s_{13}	Rate of <i>C. sukari</i> cercarial shedding for I_{jCs}	10/week	(b)
s_{14}	Rate of <i>C. sukari</i> cercarial shedding for I_{aCs}	5.6/week	(b)
s_{15}	Rate of <i>C. sukari</i> cercarial shedding for I_{jSi}	5.6/week	(b)
s_{16}	Rate of <i>C. sukari</i> cercarial shedding for I_{jSmCs}	140/week	(b)
s_{17}	Rate of <i>C. sukari</i> cercarial shedding for I_{aSmCs}	140/week	(b)
s_{18}	Rate of <i>C. sukari</i> cercarial shedding for I_{jCsSm}	280/week	(b)
s_{19}	Rate of <i>C. sukari</i> cercarial shedding for I_{aCsSm}	280/week	(b)
s_{20}	Rate of <i>C. sukari</i> cercarial shedding for I_{aSi}	140/week	(b)
s_{21}	Rate of <i>C. sukari</i> cercarial shedding for I_{cCs}	140/week	(b)
s_{22}	Rate of <i>C. sukari</i> cercarial shedding for I_{cSi}	140/week	(b)
s_{23}	Rate of <i>C. sukari</i> cercarial shedding for I_{cSmCs}	140/week	(b)
s_{24}	Rate of <i>C. sukari</i> cercarial shedding for I_{cCsSm}	140/week	(b)

(a) Parameters calibrated from prevalence data; (b) Parameters estimated directly from laboratory experiments; (c) Parameters estimated directly from field data.

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