| | Theory | | | | Experiment | | |
|---|---|---|---|---|---|---|---|
| | **Symbol** | **Definition** | **Units** | **Model value** | **Experimental observable** | **Exp. value** | **Ref.** |
| **Population partitioning model** | $\lambda$ | Strain specific *P*-to-*A* transition rate | hour$^{-1}$ | Varied | -- | | |
| | $\theta$ | Strain-specific sensitivity threshold | Kg/cm$^2$ | Varied | -- | | |
| | $\gamma$ | Strain-specific signaling rate | Kg/hour | Varied | -- | | |
| | $v$ | Strain-specific *A*-cells velocity | μm/min | Varied around 12 | Velocity of aggregating cells | 12μm/min | [53] |
| | $\tilde{v}$ | Rescaled cell velocity ($D \to \infty$ limit; see Sup. Information) | hour$^{-1}$ | Varied | -- | | |
| | $N_0$ | Initial number of *P*-cells | # cells | Varied | -- | | |
| | $\eta$ | Decay constant of the signal | min$^{-1}$ | 1.2 | Parameter used for model fitting. | | |
| | $D$ | Signal diffusion coefficient | cm$^2$/s | Varied | cAMP diff. coeff. (2% agar)<br>CMF diff. coeff. (water film) | 4.4x10$^{-6}$ cm$^2$/s<br>8x10$^{-7}$ cm$^2$/s | [54–56] |
| **Resource competition model** | $\mu$ | Decrease rate of survival probability | hour$^{-1}$ | 2x10$^{-3}$ | Number of alive/moving loners versus time | 2x10$^{-3}$ hour$^{-1}$ | Fitting from [14] |
| | $\varsigma$ | Resistance to starvation parameter | -- | 2 | | 2 | |
| | $T_{sur}$ | Loner maximum lifespan | hour | 240 | | 240 hour | |
| | $T_{ger}$ | Spore germination time | hour | 4 | Mean germination time 1-3 days old spores | 4-8 hour | [58] |
| | $\delta$ | Spore death rate | hour$^{-1}$ | 2x10$^{-4}$ | -- | | |
| | $c$ | Maximum division rate | hour$^{-1}$ | 0.173 | Doubling time | 4 hour | [50] |
| | $s$ | Spore:stalk ratio | -- | 0.8 | Spore:stalk proportion | ~ 80:20 | [57] |
| | $\omega$ | Spore germination success | -- | 0.63 | Germination efficiency | 0.63 | [9] |
| | $R_0$, $X_0$ | Food pulse size; normalized initial population size | # cells | 3x10$^5$ | -- | | |
| | $R_{1/2}$ | Resources consumption half saturation constant | -- | $0.1R_0$ | -- | | |
| | $\bar{T}_{st}$ | Mean starvation time | hour | Varied | -- | | |