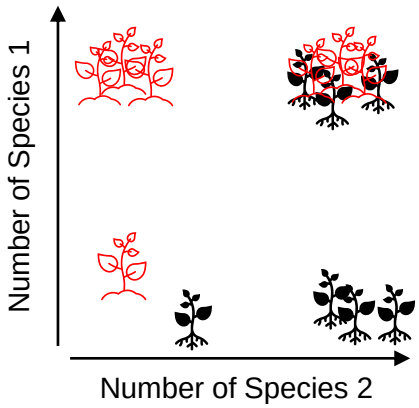
1. Fecundity assays under varying competition and treatments

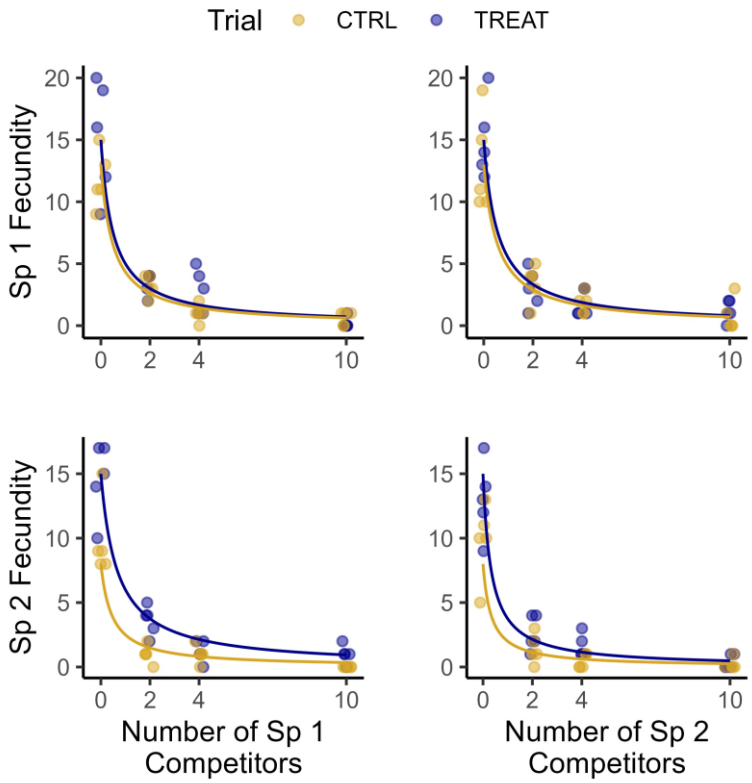
Fecundity experiment under different Levels of inter and intra-specific competition



X

Experimental Factor

2. Fit population dynamic model to data



$$\frac{N_{i,t+1}}{N_{i,t}} = \frac{\lambda_i}{1+\alpha_{ii}N_{i,t}+N_{j,t}\alpha_{ij}}$$

Term	Control	Treatment
λ_1	15	13
λ_2	15	8
α_{11}	2	2
α_{21}	1.5	2.2
α_{12}	1.75	1.75
α_{22}	3	3

3. Determine predicted coexistence determinants

Coexist if: $\rho < \frac{\kappa_i}{\kappa_j} < \frac{1}{\rho}$, where:

Relative Fitness Ratio = $\frac{\kappa_i}{\kappa_j} = \frac{\lambda_i - 1}{\lambda_j - 1}\sqrt{\frac{\alpha_{ji}\alpha_{jj}}{\alpha_{ij}\alpha_{ii}}}$

Niche Difference = $1 - \rho = 1 - \sqrt{\frac{\alpha_{ij}\alpha_{ji}}{\alpha_{ii}\alpha_{jj}}}$