1 Supplementary Material

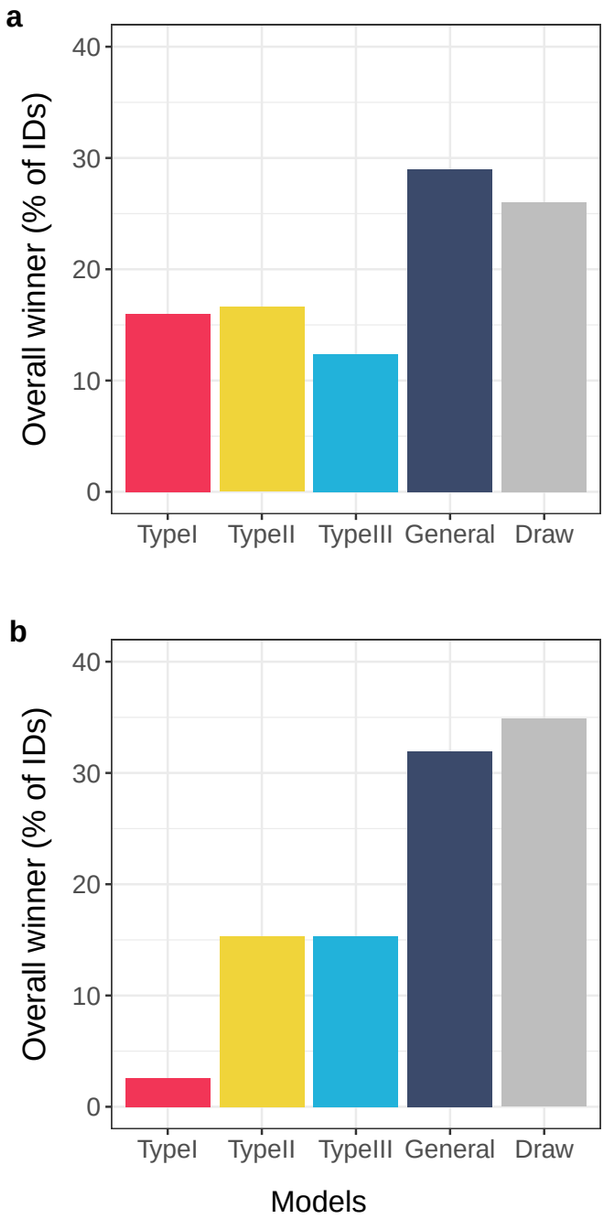

Figure S1: The percentage number of IDs where each mechanistic model was the best fitted model among the candidate of models (Type I, II, III and Generalised functional response models); based on **a** AICc and **b** BIC. The best fitted model was defined as: if a model had the lower **a** AICc or **b** BIC value and ΔAIC>2 or ΔBIC>2 for all pairwise comparisons. IDs which did not have a consistent winner (i.e. had models that won some comparisons but not all) were labelled draws.

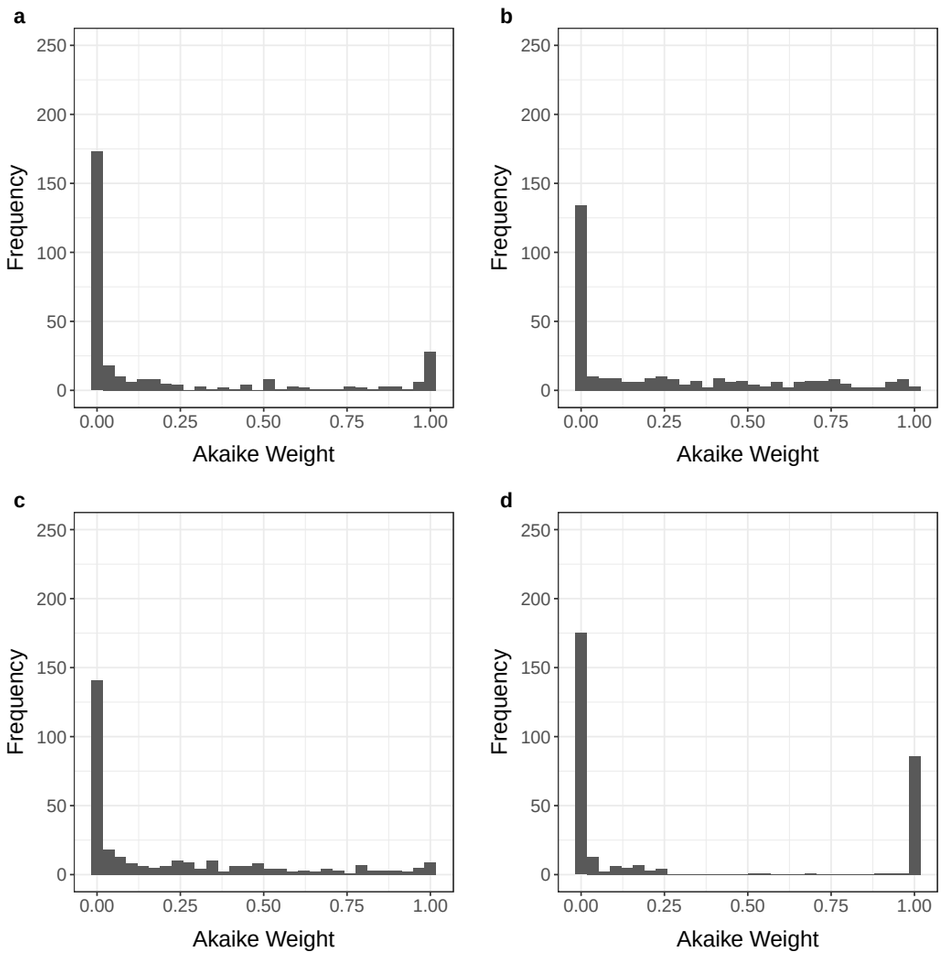

Figure S2: The frequency of Akaike Weights (which have been calculated for each ID) for each of the mechanistic models: **a** Holling's Type I, **b** Type II, **c** Type III and **d** Generalised functional response. Akaike Weights were normalised across the candidate set of models to sum to 1. Akaike Weights describe the probability that a model is the best model given the candidate set of models (the mechanistic models). An Akaike Weight of 1 suggests unambigous support for the model by the data.