**Table S1** Model selection through AIC values

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| --- | --- | --- | --- | --- | --- |
| **Model rank** | **Step** | **Plant-level variables** | **Neighbourhood-level variables** | **AIC** | **ΔAIC** |
| 1 | 7 | sqrt(total.insects.plant) + vigour + maturity + other.insects | log(SL.6m.count+1) | 190.9 | 0 |
| 2 | 8 | sqrt(total.insects.plant) + vigour + maturity | log(SL.6m.count+1) | 191.4 | 0.5 |
| 3 | 6 | sqrt(total.insects.plant) + +vigour + maturity + other.insects | log(SL.50cm+1) + log(SL.6m.count+1) | 191.6 | 0.7 |
| 4 | 5 | sqrt(total.insects.plant) + vigour + maturity + other.insects | log(SL.50cm+1) + log(SL.6m.count+1) + other.senecio.2m + (1|site/quadratID/plantquadID) | 193.6 | 2.7 |
| 5 | 4 | sqrt(total.insects.plant) + vigour + maturity + other.insects | log(SL.50cm+1) + log(SL.2m.count+1) + log(SL.6m.count+1) + other.senecio.2m | 195.5 | 4.6 |
| 6 | 3 | log(total.flowers+1)+ sqrt(total.insects.plant) + vigour + maturity + other.insects | log(SL.50cm+1) + log(SL.2m.count+1) + log(SL.6m.count+1) + other.senecio.2m | 197.5 | 6.6 |
| 7 | 2 | FHvsS + log(total.flowers+1)+ sqrt(total.insects.plant) + vigour + maturity + other.insects | log(SL.50cm+1) + log(SL.2m.count+1) + log(SL.6m.count+1) + other.senecio.2m | 199.5 | 8.6 |
| 8 | 1\* | FHvsS + log(total.flowers+1)+ sqrt(total.insects.plant) + log(size) + vigour + maturity + other.insects | log(SL.50cm+1) + log(SL.2m.count+1) + log(SL.6m.count+1) + other.senecio.2m | 201.4 | 10.5 |
| 9 | 9 | vigour + maturity + other.insects | log(SL.6m.count+1) | 224.1 | 33.2 |

\* = the initial full model

All models included random effects for the small quadrat nested within the larger quadrat nested within site. SL.dens.6m = density of *Senecio lautus* within the 6 m quadrat.