

Table S1. Selection of the most plausible GLM, GAMM, and GAMLSS models, predicting survival, growth, probability of reproduction, and fecundity for *Kalanchoe delagoensis*. The model selected was denoted in bold. *df*= degree freedom; AICc = Akaike Information Criterion corrected for small sample sizes; s = smooth terms; cs= cubic spline; sigma.fo= sigma.formula.

| Model | <i>df</i> | AICc | Models |
|---|------------|----------------|---------------|
| Survival (binomial distribution) | | | |
| Survival~log(height + height²) | 494 | 566.70 | GLM |
| Survival ~ height | 494 | 574.40 | GLM |
| Survival ~ height ² | 494 | 574.40 | GLM |
| Survival ~s(log(height)) | 494 | 568.26 | GAMM |
| Survival ~s(log(height + height ²)) | 494 | 568.65 | GLMM |
| Growth (smoothing, cubic splines, normal distribution) | | | |
| log(height(t+1))~cs(log(height)),sigma.fo=~cs(log(height)) | 124 | 227.81 | GAMLSS |
| log(height(t+1))~log(height),sigma.fo=~cs(log(height)) | 127 | 232.18 | GAMLSS |
| log(height(t+1))~cs(log(height)),sigma.fo=~log(height) | 127 | 232.18 | GAMLSS |
| log(height(t+1))~log(height),sigma.fo=~log(height) | 130 | 238.41 | GAMLSS |
| log(height(t+1))~cs(log(height)) | 128 | 250.76 | GAMLSS |
| log(height(t+1))~log(height) | 131 | 254.24 | GAMLSS |
| Reproductive Probability (binomial distribution) | | | |
| Reproduction(t+1)~log(height) | 494 | 392.50 | GLM |
| Reproduction(t+1)~log(height+height ²) | 494 | 393.40 | GLM |
| Reproduction(t+1)~s(log(height)) | 493 | 394.55 | GAMM |
| Reproduction(t+1)~s(log(height+height ²)) | 493 | 395.40 | GAMM |
| Reproduction(t+1)~s(height) | 493 | 405.10 | GAMM |
| Reproduction(t+1)~ height | 493 | 433.40 | GLM |
| Fecundity (number of plantlets produced), (poisson (<i>PO</i>) or negative binomial distribution (<i>NBI</i>)) | | | |
| plantlets ~ height (<i>NBI</i>) | 269 | 2601.31 | GAMLSS |
| plantlets ~cs(log(height)) (<i>PO</i>) | 267 | 11924.00 | GAMLSS |
| plantlets ~cs(height) (<i>PO</i>) | 267 | 12099.50 | GAMLSS |
| plantlets ~log(height) (<i>PO</i>) | 270 | 12292.10 | GAMLSS |
| plantlets ~ height (<i>PO</i>) | 270 | 13834.00 | GAMLSS |