Table A6

Comparison of competing models for seedlings on Akaike Information Criterion (AIC). GLM = generalized linear model; GLMM = generalized linear mixed model; ZI = zero inflated; Family = family of error distribution; negbin1 = negative binomial (variance that increases linearly with the mean); negbin2 = negative binomial (variance that increases quadratically with the mean); Df = degrees of freedom; The optimal model is placed on the top of table. dLogLik and dAIC are the difference between subsequent models and the best one in term of AIC and log likelihood (logLik).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model type | family | logLik | AIC | dLogLik | dAIC | Df |
| **GLM ZI** | **nbinom2** | **-426.7** | **871.4** | **66.1** | **0.0** | **9** |
| GLMM ZI | nbinom2 | -426.7 | 873.4 | 66.1 | 2.0 | 10 |
| GLM ZI | nbinom1 | -427.0 | 874.0 | 65.8 | 2.6 | 10 |
| GLM | nbinom1 | -431.7 | 877.3 | 61.2 | 6.0 | 7 |
| GLMM | nbinom1 | -432.6 | 879.2 | 60.2 | 7.9 | 7 |
| GLMM ZI | nbinom1 | -432.1 | 880.1 | 60.7 | 8.8 | 8 |
| GLM | nbinom2 | -433.6 | 881.1 | 59.2 | 9.8 | 7 |
| GLMM | nbinom2 | -433.6 | 883.1 | 59.3 | 11.7 | 8 |
| GLM ZI | Poisson  | -445.3 | 910.6 | 47.5 | 39.3 | 10 |
| GLMM ZI | Poisson  | -445.1 | 914.3 | 47.7 | 42.9 | 12 |
| GLM | Poisson  | -489.2 | 1000.3 | 3.7 | 128.9 | 11 |
| GLMM | Poisson  | -492.8 | 1003.6 | 0.0 | 132.3 | 9 |

Table A7

Comparison of competing models for saplings on Akaike Information Criterion (AIC). GLM = generalized linear model; GLMM = generalized linear mixed model; ZI = zero inflated; Family = family of error distribution; negbin1 = negative binomial (variance that increases linearly with the mean); negbin2 = negative binomial (variance that increases quadratically with the mean); Df = degrees of freedom; The optimal model is placed on the top of table. dLogLik and dAIC are the difference between subsequent models and the best one in term of AIC and log likelihood (logLik).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model type | family | logLik | AIC | dLogLik | dAIC | Df |
| GLMM  | nbinom1 | -678.3 | 1372.6 | 261.9 | 0.0 | 8 |
| GLMM ZI  | nbinom2 | -677.0 | 1375.9 | 263.2 | 3.3 | 11 |
| GLMM ZI  | nbinom1 | -678.3 | 1376.6 | 261.9 | 4.0 | 10 |
| GLMM  | nbinom2 | -685.7 | 1387.4 | 254.5 | 14.8 | 8 |
| GLM ZI  | nbinom2 | -682.4 | 1390.8 | 257.8 | 18.2 | 13 |
| GLM  | nbinom1 | -687.3 | 1394.6 | 252.9 | 22.0 | 10 |
| GLM ZI  | nbinom1 | -686.9 | 1397.9 | 253.3 | 25.3 | 12 |
| GLM  | nbinom2 | -694.2 | 1408.5 | 246.0 | 35.9 | 10 |
| GLMM ZI  | Poisson  | -829.7 | 1677.4 | 110.5 | 304.8 | 9 |
| GLMM  | Poisson  | -843.2 | 1702.5 | 97.0 | 329.9 | 8 |
| GLM ZI  | Poisson  | -887.7 | 1801.5 | 52.5 | 428.9 | 13 |
| GLM  | Poisson  | -940.2 | 1900.4 | 0.0 | 527.8 | 10 |

Table A8

Comparison of competing models for recruits on Akaike Information Criterion (AIC). GLM = generalized linear model; GLMM = generalized linear mixed model; ZI = zero inflated; Family = family of error distribution; negbin1 = negative binomial (variance that increases linearly with the mean); negbin2 = negative binomial (variance that increases quadratically with the mean); Df = degrees of freedom; NA = not applicable to computational/convergence issues. The optimal model is placed on the top of table. dLogLik and dAIC are the difference between subsequent models and the best one in term of AIC and log likelihood (logLik).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model type | family | logLik | AIC | dLogLik | dAIC | Df |
| GLMM  | nbinom2 | -253.4 | 516.7 | 102.0 | 0.0 | 5 |
| GLMM  | nbinom1 | -256.0 | 520.0 | 99.4 | 3.3 | 4 |
| GLMM ZI  | nbinom1 | -256.0 | 524.0 | 99.4 | 7.3 | 6 |
| GLM ZI  | nbinom2 | -259.6 | 535.3 | 95.7 | 18.5 | 8 |
| GLM ZI  | nbinom1 | -261.4 | 536.8 | 94.0 | 20.1 | 7 |
| GLM  | nbinom1 | -264.4 | 542.9 | 90.9 | 26.2 | 7 |
| GLM  | nbinom2 | -275.4 | 562.8 | 80.0 | 46.1 | 6 |
| GLMM ZI  | Poisson  | -291.7 | 599.5 | 63.6 | 82.7 | 8 |
| GLMM  | Poisson  | -304.0 | 617.9 | 51.4 | 101.2 | 5 |
| GLM ZI  | Poisson  | -300.9 | 619.8 | 54.5 | 103.0 | 9 |
| GLM  | Poisson  | -355.4 | 724.7 | 0.0 | 208.0 | 7 |
| GLMM ZI | nbinom2 | NA | NA | NA | NA | NA |

Table A9

Comparison of competing models for first quality recruits on Akaike Information Criterion (AIC). GLM = generalized linear model; GLMM = generalized linear mixed model; ZI = zero inflated; Family = family of error distribution; negbin1 = negative binomial (variance that increases linearly with the mean); negbin2 = negative binomial (variance that increases quadratically with the mean); Df = degrees of freedom; NA = not applicable to computational/convergence issues. The optimal model is placed on the top of table. dLogLik and dAIC are the difference between subsequent models and the best one in term of AIC and log likelihood (logLik).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model type | family | logLik | AIC | dLogLik | dAIC | Df |
| GLMM  | nbinom2 | -177.9 | 365.7 | 57.9 | 0.0 | 5 |
| GLMM  | nbinom1 | -178.6 | 367.3 | 57.1 | 1.6 | 5 |
| GLMM ZI  | nbinom1 | -177.7 | 371.4 | 58.0 | 5.7 | 8 |
| GLMM ZI  | Poisson  | -189.1 | 392.2 | 46.7 | 26.5 | 7 |
| GLM  | nbinom1 | -192.5 | 393.1 | 43.2 | 27.4 | 4 |
| GLM ZI  | nbinom2 | -191.0 | 396.0 | 44.7 | 30.3 | 7 |
| GLM ZI  | nbinom1 | -191.7 | 399.3 | 44.1 | 33.6 | 8 |
| GLM  | nbinom2 | -197.1 | 402.3 | 38.6 | 36.6 | 4 |
| GLMM  | Poisson  | -197.5 | 405.0 | 38.3 | 39.3 | 5 |
| GLM ZI  | Poisson  | -203.0 | 417.9 | 32.8 | 52.2 | 6 |
| GLM  | Poisson  | -235.7 | 477.5 | 0.0 | 111.8 | 3 |
| GLMM ZI  | nbinom2 | NA | NA | NA | NA | NA |

Table A10

Comparison of competing models for lower quality recruits on Akaike Information Criterion (AIC). GLM = generalized linear model; GLMM = generalized linear mixed model; ZI = zero inflated; Family = family of error distribution; negbin1 = negative binomial (variance that increases linearly with the mean); negbin2 = negative binomial (variance that increases quadratically with the mean); Df = degrees of freedom; NA = not applicable to computational/convergence issues. The optimal model is placed on the top of table. dLogLik and dAIC are the difference between subsequent models and the best one in term of AIC and log likelihood (logLik).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model type | family | logLik | AIC | dLogLik | dAIC | Df |
| GLMM  | nbinom1 | -196.3 | 404.6 | 57.3 | 0.0 | 6 |
| GLMM  | nbinom2 | -200.5 | 411.0 | 53.0 | 6.4 | 5 |
| GLMM ZI  | nbinom1 | -197.9 | 411.7 | 55.7 | 7.2 | 8 |
| GLMM ZI  | poisson | -197.1 | 414.1 | 56.5 | 9.6 | 10 |
| GLM ZI  | nbinom2 | -196.3 | 416.6 | 57.2 | 12.1 | 12 |
| GLM ZI  | nbinom1 | -204.5 | 427.1 | 49.0 | 22.5 | 9 |
| GLM  | nbinom1 | -209.0 | 430.0 | 44.5 | 25.4 | 6 |
| GLMM  | poisson | -207.2 | 430.4 | 46.4 | 25.8 | 8 |
| GLM  | nbinom2 | -221.8 | 455.5 | 31.8 | 51.0 | 6 |
| GLM  | poisson | -253.5 | 519.1 | 0.0 | 114.5 | 6 |
| GLM ZI  | poisson | -252.5 | 527.0 | 1.0 | 122.4 | 11 |
| GLMM ZI | nbinom2 | NA | NA | NA | NA | NA |