Q1-fecund-prep

We pooled all the data points in Nguyen and Liebman (2022) into one regression of ln(individual fecundity +1) against ln(individual aboveground mass + 0.005) and estimated twenty-four means of fecundity on natural logarithm scales using emmeans(model, ~ Biomass, at = list(Biomass = c(). The values in Biomass = c() were the mean of 24 quantiles of individual plant size on the original scale (gram/individual).

## NOTE: Results may be misleading due to involvement in interactions  
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Table 1: Mean on original scale (M) and mean (m) and standard deviation (s) on natural logarithm scale estimation from a set of 24 mean aboveground mass values. m and s were used to assign the mean and standard deviation values in the rlnorm function in the simulation.

| Aboveground mass | M | m | SE\_ln\_Seed | s |
| --- | --- | --- | --- | --- |
| 0.04 | 13.58 | 2.66 | 0.21 | 0.89 |
| 0.09 | 30.84 | 3.44 | 0.18 | 0.76 |
| 0.14 | 46.55 | 3.85 | 0.17 | 0.70 |
| 0.21 | 67.56 | 4.22 | 0.16 | 0.65 |
| 0.28 | 91.73 | 4.52 | 0.15 | 0.61 |
| 0.38 | 122.33 | 4.81 | 0.14 | 0.56 |
| 0.48 | 155.93 | 5.05 | 0.13 | 0.53 |
| 0.56 | 182.74 | 5.21 | 0.13 | 0.51 |
| 0.64 | 208.18 | 5.34 | 0.12 | 0.50 |
| 0.79 | 257.03 | 5.55 | 0.12 | 0.48 |
| 0.97 | 316.83 | 5.75 | 0.12 | 0.46 |
| 1.23 | 403.27 | 6.00 | 0.11 | 0.45 |
| 1.65 | 542.18 | 6.29 | 0.11 | 0.44 |
| 2.30 | 757.22 | 6.63 | 0.11 | 0.43 |
| 3.16 | 1,040.21 | 6.94 | 0.11 | 0.43 |
| 4.69 | 1,552.89 | 7.34 | 0.11 | 0.44 |
| 6.63 | 2,204.30 | 7.69 | 0.12 | 0.46 |
| 8.92 | 2,975.76 | 7.99 | 0.12 | 0.48 |
| 13.50 | 4,529.40 | 8.41 | 0.13 | 0.52 |
| 21.21 | 7,163.44 | 8.87 | 0.14 | 0.58 |
| 32.94 | 11,200.58 | 9.31 | 0.16 | 0.63 |
| 54.32 | 18,619.89 | 9.82 | 0.18 | 0.70 |
| 123.01 | 42,785.63 | 10.64 | 0.21 | 0.83 |
| 669.01 | 240,902.15 | 12.35 | 0.28 | 1.11 |

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Table 2: Mean on original scale (M) and mean (m) and standard deviation (s) on natural logarithm scale estimation from a set of 36 mean aboveground mass values. m and s were used to assign the mean and standard deviation values in the rlnorm function in the simulation.

| Aboveground mass | M | m | SE\_ln\_Seed | s |
| --- | --- | --- | --- | --- |
| 0.03 | 10.89 | 2.45 | 0.22 | 0.74 |
| 0.06 | 19.66 | 3.01 | 0.20 | 0.67 |
| 0.10 | 34.29 | 3.55 | 0.18 | 0.60 |
| 0.13 | 43.83 | 3.79 | 0.17 | 0.57 |
| 0.16 | 53.56 | 3.99 | 0.17 | 0.55 |
| 0.21 | 68.94 | 4.24 | 0.16 | 0.52 |
| 0.26 | 83.97 | 4.43 | 0.15 | 0.50 |
| 0.31 | 101.30 | 4.62 | 0.14 | 0.48 |
| 0.38 | 121.92 | 4.80 | 0.14 | 0.46 |
| 0.46 | 149.14 | 5.00 | 0.13 | 0.44 |
| 0.52 | 168.46 | 5.12 | 0.13 | 0.43 |
| 0.57 | 184.03 | 5.21 | 0.13 | 0.42 |
| 0.62 | 201.80 | 5.30 | 0.13 | 0.42 |
| 0.69 | 224.99 | 5.41 | 0.12 | 0.41 |
| 0.82 | 267.21 | 5.58 | 0.12 | 0.40 |
| 0.94 | 307.86 | 5.73 | 0.12 | 0.39 |
| 1.08 | 354.18 | 5.87 | 0.11 | 0.38 |
| 1.31 | 428.67 | 6.06 | 0.11 | 0.37 |
| 1.59 | 522.33 | 6.25 | 0.11 | 0.36 |
| 2.01 | 658.32 | 6.49 | 0.11 | 0.36 |
| 2.50 | 821.70 | 6.71 | 0.11 | 0.36 |
| 3.10 | 1,021.39 | 6.92 | 0.11 | 0.36 |
| 4.15 | 1,372.04 | 7.22 | 0.11 | 0.36 |
| 5.22 | 1,729.63 | 7.45 | 0.11 | 0.37 |
| 6.74 | 2,239.67 | 7.71 | 0.12 | 0.38 |
| 8.04 | 2,677.78 | 7.89 | 0.12 | 0.39 |
| 10.63 | 3,553.98 | 8.17 | 0.12 | 0.41 |
| 13.92 | 4,671.69 | 8.44 | 0.13 | 0.44 |
| 19.40 | 6,542.71 | 8.78 | 0.14 | 0.47 |
| 25.42 | 8,607.77 | 9.05 | 0.15 | 0.47 |
| 33.55 | 11,410.00 | 9.33 | 0.16 | 0.50 |
| 44.77 | 15,297.15 | 9.62 | 0.17 | 0.53 |
| 63.76 | 21,916.24 | 9.98 | 0.18 | 0.57 |
| 103.75 | 35,972.34 | 10.47 | 0.20 | 0.63 |
| 271.83 | 96,021.59 | 11.44 | 0.24 | 0.76 |
| 877.92 | 318,074.08 | 12.63 | 0.29 | 0.91 |

Nguyen, H. T. X., and Liebman, M. (2022). Impact of cropping system diversification on vegetative and reproductive characteristics of waterhemp (*A. tuberculatus*). *Frontiers in Agronomy*, *4*. <https://doi.org/gpsrmj>