Preliminary Results

A summary table of the fitted models and their results

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| Response | Model | Relationship | Effect of carcass weight significant | Effect of carcass type significant | Carcass type × Carcass weight significant | Figure |
| Clutch size | Zero-inflated negative binomial | Quadratic | √ |  | √ | 1 |
| Breeding success | Binomial | Quadratic | √ |  | √ | 2 |
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\* All models included parent size and generation as the fixed effects and pair id as the random effect; selection between linear and quadratic models was based on the likelihood ratio tests and AIC.

\* A significant interaction between carcass type and carcass weight indicates that the pattern differs between the wild and lab carcasses.

Figure 1. The relationship between clutch size and carcass weight for lab and wild carcasses. The optimal weight is larger for wild carcasses than lab carcasses.

Clutch_Size_Carcass_Weight

Figure 2. The relationship between breeding success and carcass weight for lab and wild carcasses. Breeding success is defined as at least one larva was observed in the breeding container. The patterns differ between the two carcass types. Note the extremely wide confidence interval for the large wild carcasses.

Breeding_Success_Carcass_Weight

Figure 3.

Additional thoughts

1. The weight range is different between lab and wild carcasses. We might want to consider omitting the large wild carcasses over 100 grams so that the weight range is comparable between the two carcass types. Moreover, the few large wild carcasses tend to be influential to the model fit because of their high leverage, and the model estimation becomes more uncertain at that area.