**Brazil adar mosquito ANOVAs for genetic variation and phenotypic plasticity**

Model for larvae development

Compared State and Locality level with all the data and then just the data within Amazonas state. The Locality level identifies at which comparison (SJU-TPN) the State level identified as insignificant (Rio- Toc).

Larv\_mod=sLL~Temp\_let\*State+(1|Fam\_new) +(1|State:Temp\_let:Fam\_new)

anova(larv\_mod)

Analysis of Variance Table of type III with Satterthwaite

approximation for degrees of freedom

Sum Sq Mean Sq NumDF DenDF F.value Pr(>F)

Temp\_let 4699.3 2349.67 2 182.414 530.91 < 2.2e-16 \*\*\*

State 1332.8 444.26 3 84.321 100.38 < 2.2e-16 \*\*\*

Temp\_let:State 228.6 38.10 6 158.537 8.61 4.155e-08 \*\*\*

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

**Evidence of additive genetic variation, plasticity and genetic variance for plasticity of larvae development time by temperature and state.**

larv\_mod1<-lmer(sLL~Temp\_let\*Locality+(1|Fam\_new)+(1|Temp\_let:Locality:Fam\_new), data=adar\_adult)

anova(larv\_mod1)

Analysis of Variance Table of type III with Satterthwaite

approximation for degrees of freedom

Sum Sq Mean Sq NumDF DenDF F.value Pr(>F)

Temp\_let 4542.3 2271.13 2 175.609 513.47 < 2.2e-16 \*\*\*

Locality 1744.0 290.67 6 78.646 65.72 < 2.2e-16 \*\*\*

Temp\_let:Locality 305.5 25.46 12 146.561 5.76 4.335e-08 \*\*\*

**Evidence of additive genetic variation, plasticity and genetic variance for plasticity of larvae development time by temperature and locality.**

larv\_mod3<-lmer(sLL~Temp\_let\*Locality\*Sex+(1|Fam\_new)+(1|Temp\_let:Fam\_new), data=Amazonas\_all)

anova(larv\_mod3)

Analysis of Variance Table of type III with Satterthwaite

approximation for degrees of freedom

Sum Sq Mean Sq NumDF DenDF F.value Pr(>F)

Temp\_let 1965.42 982.71 2 45.03 322.03 < 2.2e-16 \*\*\*

Locality 29.30 29.30 1 23.09 9.60 0.005049 \*\*

Sex 19.23 19.23 1 935.70 6.30 0.012235 \*

Temp\_let:Locality 0.64 0.32 2 45.03 0.11 0.900213

Temp\_let:Sex 1.08 0.54 2 933.31 0.18 0.837380

Locality:Sex 2.00 2.00 1 935.70 0.66 0.417959

Temp\_let:Locality:Sex 25.32 12.66 2 933.31 4.15 0.016080 \*

**Evidence of additive genetic variation, plasticity and genetic variance for plasticity of larvae development time by temperature, sex and locality.**

larv\_mod4<-lmer(sLL~Temp\_let\*Locality+(1|Fam\_new)+(1|Temp\_let:Fam\_new), data=Amazonas\_all)

> anova(larv\_mod4)

Analysis of Variance Table of type III with Satterthwaite

approximation for degrees of freedom

Sum Sq Mean Sq NumDF DenDF F.value Pr(>F)

Temp\_let 2090.73 1045.36 2 44.346 338.70 < 2.2e-16 \*\*\*

Locality 31.23 31.23 1 23.027 10.12 0.004161 \*\*

Temp\_let:Locality 1.35 0.68 2 44.346 0.22 0.804161

**Evidence of additive genetic variation, plasticity but no genetic variance for plasticity of larvae development time by temperature and locality within Amazonas state.**