**RESULTS**

**Do behavioral syndromes exist?**

Significant behavioral correlations were observed between most of the behavioral assays in both high and low treatment groups as confidence intervals did not overlap 0 (Tables 1-4). The Exploration and Novel latency assays had an extremely high negative correlation between individuals in both treatment groups (high = -0.992, CI = -0.991, -0.541; low = -0.948, CI = -0.998, -0.788). The negative correlation persisted within individuals, indicating a behavioral syndrome despite the within-individual correlation being much weaker (high = -0.193 CI = -0.265, -0.015; low = -0.243 CI = -0.357, -0.086). This means that more exploratory individuals were more likely to approach the novel item quicker. Sociality and novel latency also had strong negative correlations implying that more social individuals were also more likely to quickly interact with the novel item. Novel duration-exploration, sociality-exploration and novel duration-sociality all had significant positive correlations, indicating neophobic individuals tended to be less social and less exploratory.

The repeatability values for all traits were all significant since the confidence intervals for each assay do not include 0 (Table 5). Exploration is the most repeatable in both high (r = 0.386, CI = 0.221, 0.547)and low (r = 0.551, CI = 0.329, 0.693) diet treatments. When considered alongside the strong correlations, the consistent repeatability across both within- and between-individuals shows that there are behavioral syndromes.

**Does diet impact personality and behavioral syndromes?**

Although behavioral syndromes do exist, it is not impacted by diet quality. Figure 1 shows that the differences in repeatability between high and low treatment groups are not significant. The novel duration and social assays in particular are very close together, indicating that individuals fed on a high-quality diet do not spend more or less time in the relevant zones than those fed low-quality diets. The low diet group has a higher exploration repeatability but, again, this value is not significant since the confidence intervals overlap.

This trend is also seen in the correlations between each behavioral trait (Tables 1-4) where the values for both high and low are quite similar. Furthermore, pMCMC > 0.05 for all traits in each model which confirms that no significant differences exist. This is true for both between and within individuals. Figure 2 is a visual representation of the correlations between exploration and each of the other assays. From the plot, while it is clear that strong behavioral correlations do exist, there is no difference between individuals on a high-quality diet and those on a low-quality diet.

Mantel tests comparing the high and low matrices for both between- and within-individuals also gave non-significant values for both correlation and covariance, further emphasizing the non-significant differences between the high diet matrix and the low diet matrix.

Based on the mantel test, pMCMC and comparison of the models and matrices generated, it is clear that diet had no impact on the behavioral syndromes of *L. delicata.*

**Does diet impact behavior?**

As seen in Figure 3, there were no significant differences observed between the behaviors of the high and low group (in all cases, p > 0.05). The biggest difference occurred in sociality where high diet individuals spent a logged average of 0.68 seconds more time in the social zone than their low diet counterparts. However p = 0.098 and is therefore not considered significant. These t-test results reveal that diet quality did not have an impact on the sociality, neophobia or exploratory behavior of *L. delicata.*