|  |  |  |
| --- | --- | --- |
| **General Prediction** | **Specific Prediction** | **Statistical Evidence That Would Support Prediction** |
| 1. Herbivorous insects will be locally adapted to their host plants. | Monarch populations around the world will have higher mean performance on sympatric milkweed species than on allopatric milkweed species. | Higher mean performance in sympatric vs. allopatric combinations |
| 2. Generalist genotypes will have higher mean performance across environments than specialist genotypes. | Ancestral North American monarch populations, which have relatively broad host plant breadth, will have higher mean performance across hosts than derived monarch populations, which have narrow host plant breadth. | Higher mean performance in ancestral North American populations than in derived populations |
| 3. Organisms transplanted outside of their realized niche will have higher variation in fitness than organisms within their realized niche. | Monarch populations reared on allopatric host plants will have higher variation in performance than monarchs reared on sympatric hosts. | Lower coefficient of variation in performance in sympatric vs. allopatric combinations |

**Table 1 –** General predictions pertaining to local adaptation and evolution of specialization, and specific predictions for our study.