

Seed Morphology Variation in a Hyperdiverse Tropical Plant Genus

McKenna Peel, *Utah State University* | Jerry Schneider and Noelle Beckman, *Utah State University*

Introduction

- The measurement and variation in the seed ridges is important because that determines how much of the secondary metabolites go through the digestion of the seed disperser
- This will in turn influence the speed of digestion, and if the seed disperser digests it quickly then the seed won't be carried far from the parent plant
- Whereas, if the seed is digested at a slower rate, then it will be carried further away from the parent plant
- If the seed is dropped in close approximation to the parent plant then it will be more likely to be in a suitable habitat, but also be prone to competition with the same species
- This could also lead to the species being more prone to destruction of diseases, because if they are closer then the disease could take out the species easier

Methods

1. First, place the seed on the seed holder with the ridges facing outward and place it under the microscope
2. Next, measure the deepest seed ridge, from the bottom of the pit to the perimeter encompassing the seed
3. Repeat this procedure for 5 random seeds of each sample species
4. Record the seed ID number, the seed number, and the deepest seed ridge in millimeters

Results

As seen in Figure 1, there is a lot of variation in the seed ridge depth. There is a significant difference in several of the species.

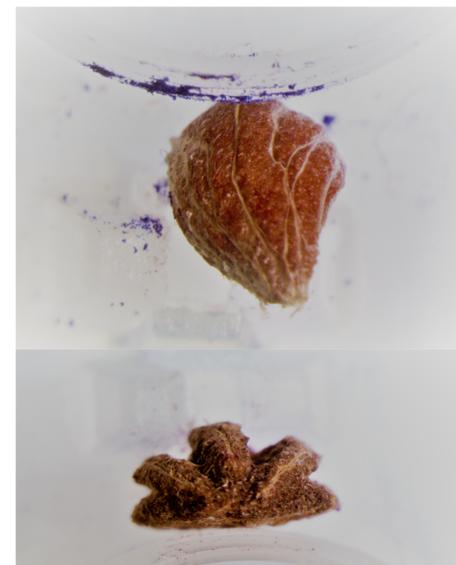
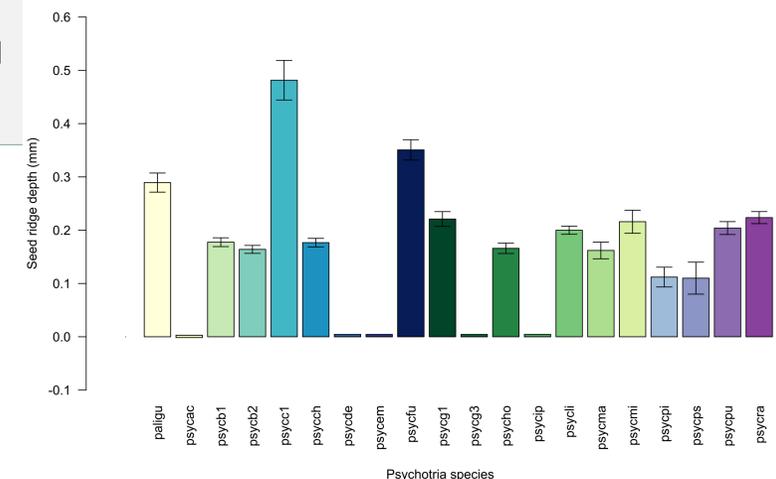


Figure 1- Depth of Seed ridge of genus Psychotria



This image shows the variation in the color and size of the plant.

This image shows the variation in seed ridge depth.

Conclusions

This variation could be important in the traits determining seed dispersal dynamics. This gives us more reason to explore the secondary metabolites in the pulp and see how it influences the digestion dynamics.

Study conducted with funding from a USU Undergraduate Research and Creative Opportunity Grant.



McKenna Peel
Utah State University
Department of Biology
Kenna.smith2000@gmail.com



UtahState
University