

Seed Morphology and Dispersal of *Achyrrachaena mollis*

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The morphological traits of a plant's seeds impact how well they are able to disperse over time, which is a crucial mechanism for reproduction, gene flow, and the movement of plant species in a rapidly changing climate. Although seed morphology is a strong indicator of seed dispersibility, there is limited knowledge of the extent to which seed morphology is impacted by genetics and environmental conditions. This project examines the morphological variation of *Achyrrachaena mollis* in order to understand the relationship between genetics, the environment, and seed morphology within the context of wind-dispersed seeds. Wild *A. mollis* seeds across fifteen populations in southern Oregon were planted in a controlled greenhouse, and each of the plants' seeds had their morphological traits measured. I expected seed morphology to maintain significant variation among populations, because the environmental conditions of each population likely selected for seeds with favorable morphological traits. I also expected the variation of seed morphology to decrease, because a common garden system likely reduced the impact the environment has on diversifying morphological traits. The experimental results indicated there was a significant difference among all of the populations' seed morphological traits. The majority of seed traits analyzed also showed reduced variation between wild and greenhouse populations.