Seed Morphology and Dispersal of Achyrachaena 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 Achyrachaena 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.