

Abstract Submitted  
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**The Importance of Seed Characteristics in the Dispersal of Splash-Cup Plants** JOEL EKLOF, RACHEL PEPPER PEPPER, JULIANA ECHTERNACH, Univ of Puget Sound — Splash-cup plants disperse their seeds by exploiting the kinetic energy of raindrops. When raindrops impact the splash-cup, a 3-5 mm vessel that holds seeds, the seeds are projected up to 1 m away from the parent plant. It has been established, using 3D printed models, that a 40° cone angle maximizes dispersal distance when seeds are not present in the cup. We therefore use 40° cups with the addition of different types of seeds to determine the effect that seeds of varying characteristics have on the dispersal and splash dynamics of splash-cup plants. Splash characteristics and dispersal distances of seeds with differing characteristics such as size, shape, texture, density, and hydrophobicity were compared to one another, as well as to the case of having no seeds present. We found that the presence of seeds dramatically decreased dispersal distance and changed splash characteristics (are measured by the angle and velocity of the resulting splash). In addition, different types of seeds yielded splashes with differing dispersal distance and splash characteristics. Splash characteristics and dispersal distances of glass beads of differing hydrophobicity were compared to determine the effect hydrophobicity has on dispersal and splash dynamics. These beads yielded some differences in dispersal distance, but no notable difference in splash dynamics. Models of the conical fruit bodies of the splash-cups were 3D printed and high-speed video was used to find splash characteristics, and dispersal distance was calculated by measuring the distance from the model to the final resting position of the seeds and droplets.

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