

The Effect of Seed Parachute Morphology on Drag and Dispersion

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Plants like the common dandelion (*Taraxacum officinale*) and the common salsify (*Tragopogon porrifolius*) rely on their parachute-like structures (hairs or filaments) to enable wind-dispersion and carry a seed load. The radially spreading hairs naturally create radially varying porosity. Near the center, the inter-filament distance would be smaller than the boundary layer forming over individual hair thickness, creating an effective solid disk within a critical radius. The presence of this disk then alters the total drag over the parachute as the contribution to drag from individual filaments lessens. Given the evolutionary importance of these structures and their interactions with surrounding fluid, it's possible parachute morphology (hair length, number, and thickness) have been tuned. Here, we will show the effect of parachute morphology on dispersion outcomes and the exchange between this critical radius and drag on the seed.