

## Plant Seed Adaptations

Many plants reproduce sexually. Pollen grains from one plant's flowers fertilize the eggs in another plant's flowers. These fertilized eggs then develop into embryos within a plant's seeds.

Unlike animals, plants growing under poor conditions can't just get up and move to a better location. Their seeds have more options, though. Plants can disperse their seeds far and wide. This prevents offspring from having to compete with their parent plants for light, water, and nutrients. In some cases, it also helps the plant species grow in new locations.

Wind and water are the two most effective ways seeds disperse. A single gust of wind can carry hundreds of thousands of dandelion seeds to a new field. Ocean currents can transport plants thousands of miles, even to a remote island or a new continent.

Animals can also help. Berries taste good to animals, which eat their seeds and later drop them undigested when they defecate. Other seeds have hooks, barbs, and burrs that can attach to an animal's hair or fur—or to a person's clothing. These types of seeds are called "hitchhikers."

The adaptations that allow seeds to float thousands of miles on ocean currents probably began as fortunate accidents. Perhaps one individual plant had a mutation that resulted in a tougher or waxier seed coat that made the seed more waterproof. This slightly altered seed coat might allow some of that plant's seeds to drift short distances—a few miles downstream or a few miles offshore to nearby islands. Over thousands of plant generations, some of these plants might have evolved seeds with increasingly tough or waxy seed coats. Their coverings would be so resistant to water that they could drift around the world.

Adaptations that allow seeds to hitchhike on an animal's fur probably evolved similarly. Perhaps one individual plant had a mutation that resulted in small changes to the seed coat, making it rougher or even producing small hooks or spikes. Or perhaps a seed that already had hairs for protection against drying out had a mutation that stiffened the hairs and gave them barbs. These new structures might have allowed some of that plant's seeds to attach briefly to passing animals. These seeds could travel farther and do better than the seeds of other plants of the same species. Over thousands of plant generations, plants with the stickiest or prickliest seeds would have done better than other plants of the same species, passing their genes on to future generations.