

The Overview of Seed Dormancy

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Description

Seed dormancy is an evolutionary trait that stops seeds from germinating under unfavorable ecological circumstances, which would normally result in low seedling survival rates. Under a combination of environmental circumstances that are ordinarily favorable to the germination of non-dormant seeds, dormant seeds do not germinate in a specific amount of time.

There are two unique classes of seed dormancy: exogenous and endogenous (Scarification). Exogenous dormancy is brought about by the conditions outside of the seed's incipient organism. An illustration of exogenous lethargy is the point at which the seed coat is excessively solid for dampness to penetrate, adequately forestalling germination.

Delay germination, which enables dispersal but preventing simultaneous germination of all seeds, is a key function of seed dormancy. The staggered germination protects certain seeds and seedlings from injury or death due to brief periods of adverse weather or transitory herbivores; it also allows some seeds to germinate when competition for light and water from other plants is less strong. Seed quiescence is another type of delayed seed germination, which differs from real seed dormancy and happens when a seed fails to germinate due to external environmental circumstances that are too dry, warm, or cold to allow germination.

Many plant species have seeds that take months or years to germinate, and some seeds can stay in the soil seed bank for up to 50 years before germinating. Some seeds have a long viability time, and the oldest known germinating seed was discovered in Siberian permafrost tissue in a research. Researchers successfully regenerated *Silene stenophylla* seeds that were believed to be 31,800 years old.

True dormancy, also known as intrinsic dormancy, is produced by internal seed characteristics that prohibit germination under normal conditions. Exogenous and endogenous seed dormancy is two common classifications for seed dormancy, based on which component of the seed induces hibernation. Physical, physiological, and morphological dormancy are the three forms of dormancy depending on their manner of action. A variety of categorization methods have been devised to categories distinct latent seeds, but none has received widespread acceptance. Dormancy occurs for a variety of causes that frequently overlap, resulting in situations that are difficult to categories. This dilemma is exacerbated by the fact that a seed that is latent for one cause may become dormant for another reason at a later time these seeds will germinate if they are gathered and planted in an environment that is warm and/or moist enough. Non-dormant seeds distributed late in the growth season wait until the soil temperature increases in the spring, or in the event of seeds disseminated during dry times, until it rains and there is enough soil moisture, in natural conditions. Quiescent, not dormant, seeds do not germinate because they contain fleshy fruits that prevent germination. Many garden plants contain seeds that germinate quickly if given enough water and warmth, despite their wild predecessors' dormancy. Because of years of selection pressure from plant breeders and gardeners who maintained and nurtured plants that lacked seed dormancy, these cultivated species lack seed dormancy. Seeds of certain mangroves are viviparous and start to grow while still appended to the parent; they produce an enormous, weighty root, which permits the seed to enter into the ground when it falls. Viviparous germination is a variation of mangroves for saline climate.