

What Plants do in the Winter

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We often think of winter as a period of nothingness for our outdoors plants. Grass is brown, leaves have fallen, and seeds are months away from germinating. It's a time for us humans to bundle up more to enjoy outdoor activities, drive with the heater on, staying inside enjoying houseplants or planning for next year's garden, or wondering why you still haven't moved to somewhere warm. But there's actually more going on than meets the eye outdoors.



Quite a few seeds and bulbs need a period of cold weather, referred to as cold stratification, to germinate or start growing in the spring when there's sufficient warmth and moisture. Without the cold stratification specific hormones in the plants don't get triggered or get triggered at the wrong time throwing off the timing they need for successful growth. Winter naturally takes care of the cold stratification but this is actually something professional growers as well as the home gardener can achieve in refrigerators. Colorful bulb planters showing their colors in late winter and early spring are the results of this. How to do this we'll cover in a future article.

The winter dormancy period in plants is a chemical reaction to less sunlight and lower temperatures. Photosynthesis is the name given when plants turn light, water, and nutrients into energy. It requires sunlight so as day length diminishes means photosynthesis slows. Photosynthesis also requires enzyme activities that drive chemical reactions and those enzymes become much less efficient as temperatures drop. At some point the combination of lower temperatures and less light affect specific proteins important to photosynthesis, thereby genetically signaling a start to dormancy and it's subsequent energy conservation for the plant. In spring the reverse occurs.

The advantages of dormancy is not just that you don't have to mow the yard for a while. Some diseases and insect infestations, if not stopped, are at least slowed. Damaged leaves are dropped and eventually replaced. Some proteins are broken down and recreated into new compounds, and cell walls and membranes are built and maintained.

Another very important effect of dormancy is the natural removal of water from most of the plant's above ground structures. Plant growth requires water, which freezes in sub-zero temperatures. Water expands when it freezes, so water in a cell that freezes can easily destroy the cell's integrity, resulting in dead tissue. We see this as winter die back or winter burn and if severe enough can cause the death of plants. Dormancy reduces this possibility, however even if dormancy is "scheduled" properly within the plant, hard freezes in early fall or late spring when there's still a lot of moisture in plant tissues can cause widespread damage as can very cold, lengthy cold snaps with little to no snow cover in the middle of winter.

So even the right plant with the right genetic make up planted in the right area can still be damaged or even killed by a stint of unexpected weather. Best advice is once spring arrives be patient. A plant's recovery from winter damage may take a little while longer than usual. Maybe that plant you think is dead just needs more time to recover and eventually will be just fine.

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