



Earth Gauge

A National Environmental Education Foundation Program

## Thanksgiving Holiday

**Does weather affect your Thanksgiving meal? You bet! From wild turkey survival to the life-cycle of the apples in your pie, weather conditions can have a big impact on the traditional turkey-day fixings. This year, impress your dinner companions with some interesting weather-food facts.**

### WILD TURKEYS

While it is a common misconception that wild turkeys cannot fly, they actually can and do fly – but not very far! When turkeys beat their wings continuously, they are able to travel about one-eighth of a mile; gliding allows them to travel up to one mile. This short flight distance means that turkeys do not migrate south for the winter months and must survive cold and snowy weather across much of their range.



**Tough birds:** Wild turkeys live year-round in some of the chilliest parts of the U.S., including the Midwest and Northeast, and are able to survive sub-zero temperatures. As a matter of fact, turkeys can settle in roosting areas for up to *two weeks* during spells of severe weather, losing up to 40 percent of their body weight without succumbing to starvation!

**Snarled by snow:** The bigger winter challenge for wild turkeys is snowy weather. Wild turkeys eat all sorts of ground forage, including seeds, grains, and small bits of vegetation, but they generally cannot reach foods under more than six inches of snow. Soft, powdery snow also makes it harder for turkeys to move around – the birds will generally “wait it out” in roosts until snow crusts over or melts.

Despite extreme weather, most wild turkeys make it through winter. Survival rates during mild or average winters are between 70-100 percent; harsher winter survival rates are 55-60 percent. Even during harsh winters, more than enough turkeys survive to maintain healthy breeding populations.

### CRANBERRIES

The cranberry, a close relative to the blueberry, is native to the northeastern, south-central, and southeastern United States. Cranberries are fruits that grow on long vines in bogs, which are wetlands that provide a unique habitat with acidic water and special soil that contains layers of sand and decaying matter. This important crop is also cultivated in man-made wetlands. The life-cycle of a cranberry vine is intricately tied to seasons and weather conditions.

**Early summer:** Pink flower blooms are pollinated by bees, after which cranberry fruits begin to develop.

**Early fall:** Cranberries grow fully and are harvested in September or October.

**Fall to early winter:** New flower buds become dormant due to low temperatures and shorter days.

**Mid-winter:** Growers flood the bogs with water, which freezes and insulates the buds.

**Late-winter to early spring:** When the ice thaws, the plants remain dormant until they are exposed to temperatures of 32 to 45 degrees Fahrenheit for a critical amount of time.

**Late spring:** The plants begin new growth and their leaf and flower buds bloom.



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## APPLES

The life-cycle and health of an apple is directly related to seasons and weather.

**Spring:** In the spring, new trees are planted. Pollination, essential to fruit development, occurs in late spring when mild, sunny days trigger blossoms to open and provide the weather necessary for bees to fly from flower to flower.

To keep pest populations down, many apple growers use Integrated Pest Management (IPM) techniques, which are pest-control methods that are less harmful to the environment than typical methods. One technique that farmers use is monitoring weather (temperature, humidity, and precipitation). This helps them predict pest and disease outbreaks and decide when to spray pesticides to minimize impact on water quality and maximize impact on pests.



**Summer:** How well apples grow over the summer depends on precipitation amounts. In drought or dry summers, orchards may need irrigation or the apples will not grow big enough. Apple growers might also prune the trees to allow sunlight to reach the fruits. By the end of the summer, apples complete their growth period and begin to ripen.

**Fall:** When cool nights arrive, an enzyme in red apples is produced, causing their color to deepen. Apples become fully ripe, are harvested, and are made into a variety of different foods and juices. After the harvest ends, farmers prepare the orchards for winter.

**Winter:** Flower and leaf buds appear on apple trees in late fall and the trees lie dormant throughout winter. In mid-winter, farmers prune the trees so they will receive an abundance of winter sunlight and their foliage and flowers will be healthy, full, and productive the next spring.

## SWEET POTATOES

Sweet potato originated in the Western Hemisphere. The most common type of sweet potato found in U.S. markets is the “moist-fleshed” type, red-skinned with dark-orange flesh. It is possible to grow some variety of sweet potato in much of the U.S., but commercial production is confined to just a few states, primarily in the Southeast and California. The northernmost state that reports significant commercial production of sweet potatoes is New Jersey.

Sweet potato production generally requires a minimum frost-free period of 110 to 150 days. “Georgia Jet” is a 90-day variety that can be grown all the way to the Canadian border.

**Frost** can damage sweet potato vines and roots, and cold soils can reduce the potatoes’ ability to keep well in storage after harvest.

**Heavy rains** can prevent sweet potato roots from forming properly, or may cause the potatoes to split.



## WINE

The growth and health of wine grapes – and the quality of wine – are affected by many different weather conditions.



**Sun:** White and red grapes that receive a lot of sun exposure generally result in fuller-bodied wines. In order to ripen correctly, wine grapes need about 1,400 hours of sunlight during their growing season!

**Wind:** Too much wind can damage grape vines, reducing crop yield or halting grape maturation, which can result in an unfinished wine.

**Rain:** Grape vines generally need about 22 inches of rain per year to survive. However, too much rain during the summer can cause mildew growth, damaging crops. Too much rain shortly before grape harvest can affect a finished wine by reducing the amount of sugar in the grapes.

**SOURCES:****Wild Turkeys**

Massachusetts Department of Fish and Game. "MassWildlife: Wild Turkeys." [http://www.mass.gov/dfwele/dfw/dfw\\_turkey.htm](http://www.mass.gov/dfwele/dfw/dfw_turkey.htm).

Wisconsin Department of Natural Resources. "Should we feed Wild Turkeys?" <http://dnr.wi.gov/org/land/wildlife/HUNT/turkey/wntfeeding.htm>.

**Cranberries**

University of Massachusetts Cranberry Station. "How Cranberries Grow." <http://www.umass.edu/cranberry/cranberry/seasons.shtml>

**Apples**

Cornell Cooperative Extension. Integrated Crop & Pest Management Guidelines for Commercial Vegetable Production, 2008. <http://www.nysaes.cornell.edu/recommends/1frameset.html>.

New York Apple Association. NY Apple Country Fun Facts: How Do Apples Grow? <http://www.nyapplecountry.com/seasons.htm>.

Virginia Cooperative Extension. Physiology of Pruning Fruit Trees. <http://www.ext.vt.edu/pubs/treefruit/422-025/422-025.html>.

**Sweet Potatoes**

ATTRA - National Sustainable Agriculture Information Service publication "Sweetpotato: Organic Production" online at <http://attra.ncat.org/attra-pub/sweetpotato.html>.

**Wine**

Calwineries. "Climate and Wine." <http://www.calwineries.com/learn/grape-growing/climate>.