

Weather & Gardening

How do I utilize Weather and Climate information for successful gardening?

Many of the plants we buy contain tags indicating that they are **annual**, **perennial**, **temperate**, or **tropical**. In addition, these tags describe how the plant will respond to weather conditions (temperature, rainfall, wind, light and surrounding structures). While you may not be able to control these conditions,

you can fine tune the location (shady vs. sunny) of the plant that is suggested for the specified zone considering the light, heat and the plant hardiness zone information of your area. This brochure should help you, the gardener, understand how local weather and climate can be utilized for successful gardening.

How does weather affect my garden?



Weather is the ultimate factor determining whether plants will thrive or perish. Temperature, moisture and their extremes have a direct effect on the survival of plants. Climate is the main reason plants favor certain places to grow. Climate is the behavior of the weather which can be described by both average values and extremes over a period of time. Knowing the local climate is a key factor to successful gardening.



WEATHER FORECAST OFFICE
N2788 COUNTY RD FA
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Weather & Gardening

for Rochester, MN and surrounding areas



NOAA's National Weather Service
Climate Services Program

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What are the key weather elements for gardening?

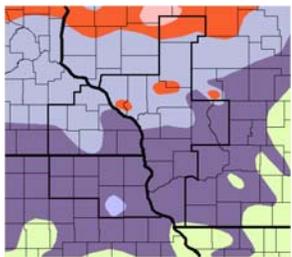
Freezes: Freezing temperatures determine the length of the growing season. Airport (official) temperatures are measured about 5 feet above the ground. As a result light frosts can occur when official temperatures are as high as 36°F. Meanwhile killing frosts are likely when the temperature falls to 28°F. The following table provides the probabilities of these temperatures occurring and the length of frost/freeze-free days in the **Rochester area**.



Rochester, MN Frost/Freeze Data *				
		Probability		
		10%	50%	90%
Spring (Latest Occurrence)	36°F	Jun 10	May 15	Apr 28
	32°F	May 16	May 3	Apr 20
	28°F	May 4	Apr 18	Apr 1
Autumn (Earliest Occurrence)	36°F	Sep 13	Sep 22	Oct 2
	32°F	Sep 19	Oct 2	Oct 15
	28°F	Sep 25	Oct 10	Oct 26
# of Frost/Freeze Free Days	36°F	149	129	109
	32°F	167	152	137
	28°F	200	175	150

* National Climatic Data Center's (NCDC) *Climatology of the United States No. 20 1971-2000.*

When selecting perennial plants for your garden, insure they will survive the winter by utilizing the United States Department of Agriculture's (USDA) Plant Hardiness Zone Map. This map factors in average winter minimum temperatures.



Plant Hardiness Zone	Average Annual Minimum Temp (°F)
3a	-35 to -40
3b	-30 to -35
4a	-25 to -30
4b	-20 to -25
5a	-15 to -20

USDA Plant Hardiness Zones

The **Rochester area is located in Zone 4a**, where the minimum winter temperatures are normally between -25°F and -30°F. **The coldest temperature ever recorded in the Rochester area was -42°F on January 7, 1887. The coldest temperature in recent times is -35°F on February 2, 1996.** See the following web site for further information on the USDA plant Hardiness zones:

<http://www.usna.usda.gov/Hardzone/hzm-nm1.html>

Heat: Extreme heat stresses plants and can even result in their demise. The American Horticultural Society (AHS) determined Heat Zones based on the average number of days per year with temperatures greater than 85°F. Many plants have this information on their tags, so choose a plant which is suitable to your location.



The Rochester area averages 26 days a year in which the temperature exceeds 85°F. This places the Rochester area in Plant Heat Zone 4 (>14 to 30 days). See the following web site for further information on the AHS Plant Heat Zones:

http://www.ahs.org/publications/heat_zone_map.htm

Wind: Transpiration from the plants and evaporation from the soil causes significant moisture loss. Since wind enhances evaporation and transpiration, on a hot day the wind will increase water needs, which could dehydrate the plant.



Knowing the average wind speed and direction in your local area can help you plan for better gardening. You can reduce the air circulation by building fences and planting hedges. **The annual average wind for the Rochester area is 12 mph from the south.** For day-to-day information, you can make a more informed decision by consulting the

National Weather Service web site for current conditions as well as the forecast for areas in and around the **Rochester area**:

<http://weather.gov/lacrosse>

Moisture: Plant tissues must contain enough water to keep their cells active. Some plants may be advertised as drought-tolerant, but no plant can survive becoming completely dry. Too much water can cut off the oxygen supply to the roots. Knowing the local seasonal rainfall averages and soil types can help determine which plants may need additional watering, or special planting requirements to avoid over watering.



The Rochester area receives an average of 31.40 inches of precipitation annually. The image below provides a monthly breakdown of this precipitation.

Rochester, MN
Monthly Average Precipitation
(1971-2000)

