

# 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  
LA CROSSE WI 54601



# Weather & Gardening

for Winona, MN and surrounding areas



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Climate Services Program

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## What are the key weather elements for gardening?

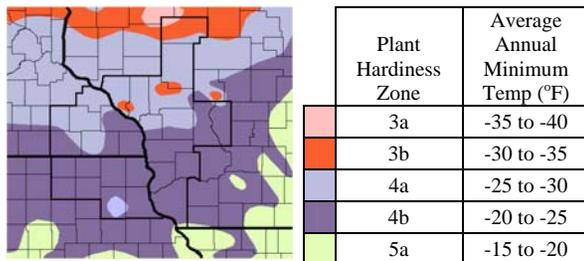
**Freezes:** Freezing temperatures determine the length of the growing season. Airport (official) temperatures are measured about 5 feet above the ground. As a result light frosts can occur when official temperatures are as high as 36°F. Meanwhile killing frosts are likely when the temperature falls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



Winona, MN Frost/Freeze Data *				
		Probability		
		10%	50%	90%
Spring (Latest Occurrence)	36°F	May 25	May 8	Apr 21
	32°F	May 10	Apr 24	Apr 7
	28°F	Apr 29	Apr 15	Mar 31
Autumn (Earliest Occurrence)	36°F	Sep 14	Sep 26	Oct 9
	32°F	Sep 21	Oct 5	Oct 19
	28°F	Oct 1	Oct 17	Nov 2
# of Frost/Freeze Free Days	36°F	164	141	117
	32°F	187	164	140
	28°F	207	184	161

\* 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.



USDA Plant Hardiness Zones

The **Winona area is located in Zones 4a and 4b**, where the minimum winter temperatures are normally between -20°F and -30 °F. **The coldest temperature ever recorded in the Winona area was -35°F on January 12, 1912. The coldest temperature in recent times is -31°F on February 4, 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.



**Winona averages 39 days a year in which the temperature exceeds 85°F. This places Winona in the Plant Heat Zone 5 (>30 to 45 days). Gardeners on the bluff tops near Winona are 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](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 Winona area is 9 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 **Winona 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 Winona area receives an average of 34.20 inches of precipitation annually. The image below provides a monthly breakdown of this precipitation.**

Winona, MN  
Monthly Average Precipitation  
(1971-2000)

