

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
9200 WHITE LAKE RD
WHITE LAKE MI 48386



Weather & Gardening

for the Saginaw Valley
(Bay, Midland, & Saginaw Counties)



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

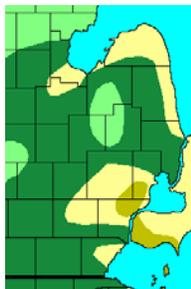


above the ground. As a result light frosts can occur when official temperatures are as high as 36°F. Meanwhile killing frosts are likely when the temperature falls to 28°F. The following table provides the probabilities of these temperatures occurring and the length of frost/freeze-free days in the Saginaw Valley.

Saginaw, MI Frost/Freeze Data *				
		Probability		
		10%	50%	90%
Spring (Latest Occurrence)	36°F	May 27	May 12	Apr 26
	32°F	May 13	Apr 30	Apr 16
	28°F	Apr 27	Apr 16	Apr 4
Autumn (Earliest Occurrence)	36°F	Sep 15	Sep 28	Oct 11
	32°F	Sep 27	Oct 12	Oct 28
	28°F	Oct 9	Oct 24	Nov 8
# of Frost/Freeze Free Days	36°F	159	139	119
	32°F	185	165	145
	28°F	212	191	170

* 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

Plant Hardiness Zone	Average Annual Minimum Temp (°F)
5a	-15 to -20
5b	-10 to -15
6a	-5 to -10
6b	0 to -5

The Saginaw Valley is located in Zones 5a, 5b, and 6a, where the minimum annual temperatures are normally between -5°F and -20°F. However temperatures have been as cold as -31°F (Bay City on February 5, 1918). 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 Saginaw Valley normally experiences 29 days a year in which the temperature exceeds 85°F. This places the Saginaw Valley in the 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 Saginaw Valley is 9.3 mph from the southwest. 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 in the Saginaw Valley:

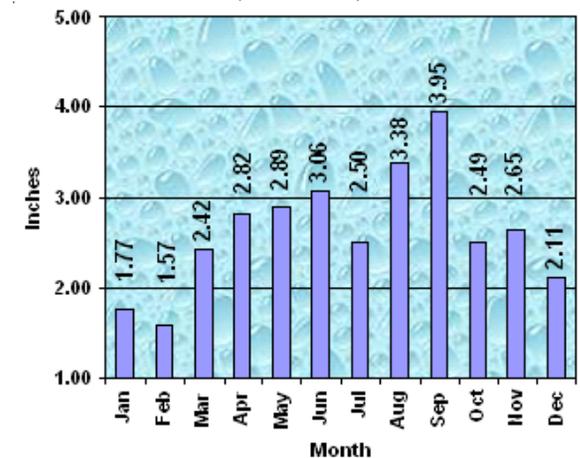
<http://weather.gov/detroit>

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.



MBS International Airport receives an average of 31.61 inches of precipitation annually. The image below provides a monthly breakdown of this precipitation.

MBS International Airport
Monthly Average Precipitation
(1971-2000)



Similar monthly and annual precipitation totals are found throughout the Saginaw Valley.