Growing Season in Albuquerque

and Fall Freeze Dates for Selected Cities

National Weather Service

The terrain of the Albuquerque Metropolitan Area produces a diverse growing season across the Rio Grande Valley, from the Sandia foothills to the West Mesa. Generally, the growing season is shortest in the valley, where cold air drainage leads to earlier freezes in the autumn, and later freezes in the spring. Lack of data prevents real precise average dates of first and last freezes in the foothills, but long-term records at the Albuquerque International Airport (elevation 5300 feet) can be used for an accurate assessment of the growing season for much of the city.

Due to the cold air drainage into the valley, early morning temperatures tend to be about five degrees higher over the heights and west mesa. However, as you climb higher into the eastern foothills, this trend eventually reverses. Consequently, it is likely that the growing season in the eastern foothills, above 6000 feet, is not much different from the valley. People living in those areas above 6000 feet should use the valley freeze dates for planning, instead of the heights.

The most extensive temperature records in the city are those from the National Weather Service. However, from 1893 until 1931, the instruments were moved from place to place, ranging from elevations of 4950 feet to 5100 feet. Since 1931, complete records have been kept at the site now known as Albuquerque International Airport. Perhaps the complete records can be seen as the extreme scenario, while records since 1931 can be viewed as accurate for most purposes.

Since 1893, the earliest freeze on record was on September 18, 1912. The latest freezes on record were May 27, 1917 and May 27, 1918. The latest date fro the first freeze of the autumn was November 17, 1963. The earliest date for the last freeze of the spring was March 18, 1990 (though technically, this is still considered winter). The following tables give dates that should be more meaningful for different sections of the Middle Rio Grande Valley, along with the number of years of record for each location.

Date of First Fall Freeze for the ABQ Metro Area

Location	Elevation (Ft.)	Early	Average	Late	Years of Record
ABQ Sunport	5300	OCT 8	OCT 26	NOV 17	61
Los Lunas	4840	SEP 28	OCT 16	NOV 2	29
Bernalillo	5070	SEP 20	OCT 13	NOV 1	36
Sandia Park	7100	SEP 15	OCT 10	NOV 15	38

Average Growing Season

Location	Elevation (Ft.)	Long (Days)	Short (Days)	Average (Days)
ABQ Int. Airpor	5300	226	155	191
Los Lunas	4840	190	143	161
Bernalillo	5070	195	117	163
Sandia Park	7100	190	113	150

The following tables include both date for first temperature at or below 32 degrees and for first temperatures at or below 28 degrees. These data are grouped according to National Weather Service climatologic and New Mexico crop reporting divisions.

	32 Degrees			28 Degrees		
	Mean	**Early**	**Late**	**Mean**	**Early**	**Elevation**
Northwest Plateau						
Aztec Ruins	OCT 7	SEP 02	NOV 01	OCT 17	SEP 13	5644
Chaco Canyon	SEP 29	AUG 24	OCT 31	OCT 07	AUG 24	6177
El Morro	SEP 25	SEP 04	OCT 13	OCT 05	SEP 04	7227
Farmington	OCT 05	SEP 04	OCT 23	OCT 14	SEP 19	5625'
Gallup	SEP 26	JUL 07	OCT 23	OCT 12	SEP 13	6468
Star Lake	SEP 23	AUG 24	OCT 17	OCT 06	SEP 04	6635
Zuni	OCT 13	SEP 13	NOV 01	OCT 19	OCT 01	6311
Northern Mtns.	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Chama	SEP 12	JUL 02	OCT 14	SEP 27	JUL 02	78501
Cimarron	OCT 02	SEP 09	NOV 02	OCT 16	SEP 18	6542
Cuba	SEP 21	AUG 21	OCT 23	OCT 04	SEP 13	7045
Des Moines	OCT 04	SEP 04	OCT 31	OCT 11	SEP 04	6632
Eagle Nest	AUG 19	JUL 01	SEP 19	SEP 09	JUL 01	8260
El Vado Dam	SEP 15	JUL 01	OCT 05	SEP 24	SEP 03	6740
Espanola	OCT 09	SEP 16	OCT 31	OCT 14	SEP 20	5645
Jemez Springs	OCT 17	SEP 19	NOV 02	OCT 31	OCT 08	6264
Las Vegas	OCT 05	SEP 05	OCT 22	OCT 12	SEP 20	6866
Los Alamos	OCT 14	SEP 18	NOV 03	OCT 23	SEP 19	7424
Raton	OCT 10	SEP 04	NOV 01	OCT 19	SEP 18	6640
Red River	AUG 25	JUL 01	SEP 19	SEP 16	AUG 28	8676
Santa Fe	OCT 14	SEP 03	NOV 02	OCT 23	SEP 27	6718
Taos	SEP 29	SEP 03	OCT 16	OCT 09	SEP 17	7650
Valmora	OCT 02	SEF 05	OCT 25	OCT 09	SEP 10	6312
Northeast	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Bell Ranch	OCT 21	OCT 08	NOV 10	OCT 31	OCT 08	4500
Clayton	OCT 15	SEP 17	NOV 09	OCT 26	SEP 27	4970
Clovis	OCT 28	SEP 28	NOV 20	NOV 03	OCT 08	4290
Conchas Dam	OCT 31	OCT 08	NOV 27	NOV 12	OCT 13	4244
Elida	OCT 20	SEP 22	NOV 10	OCT 02	SEP 22	4354
Mosquero	OCT 11	SEP 18	NOV 02	OCT 20	SEP 25	5650
Portales	OCT 17	SEP 21	NOV 07	OCT 31	OCT 08	4010
Roy	OCT 11	SEP 04	OCT 31	OCT 23	SEP 25	5878
Tucumcari	OCT 27	SEP 26	NOV 22	NOV 03	OCT 08	4086

Southwest Mtns.	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Grants	OCT 03	SEP 04	OCT 17	OCT 14	SEP 20	6520
Luna	SEP 12	JUL 01	OCT 04	SEP 23	SEP 09	7050
Quemado	SEP 21	AUG 18	OCT 07	OCT 02	SEP 04	6879
Central Valleys	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Albuq. Airport	OCT 26	OCT 08	NOV 17	NOV 06	OCT 17	5300
Carrizozo	OCT 17	SEP 23	NOV 09	OCT 27	OCT 08	5405
Elephant Butte	NOV 10	OCT 27	DEC 06	NOV 19	NOV 02	4576
Socorro	OCT 23	SEP 28	NOV 17	NOV 01	OCT 08	4585
Central Mtns.	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Cloudcroft	S EP 2 8	SEP 02	NOV 03	OCT 15	SE P 12	8661
Estancia	SEP 10	SEP 13	OCT 2 1	OCT 10	SEP 14	6107
Gran Quivira	OCT 14	SEP 18	NOV02	OCT20	OCT 08	6605
Mountainair	OCT 06	SEP 04	NOV 02	OCT 14	SEP 16	6520
Ruidoso	SEP 21	JUL 24	OCT 12	OCT 02	SEP 11	6937
Southeast	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Artesia	OCT 30	SEP 18	NOV 27	NOV 05	OCT08	3320
Carlsbad	NOV 03	OCT 08	NOV 26	NOV I 1	OCT 2 8	3232
Fort Sumner	OCT 22	SEP 21	NOV 08	NOV 02	OCT 08	4025
Hobbs	NOV 04	OCT 08	NOV 29	NO V 15	OCT29	3615
Roswell	OCT-27	SEP 14	NOV 23	NOV 06	OCT 03,	3649
Santa Rosa	OCT 24	OCT 03	NOV 09	NOV 02	OCT 08	4622
Tatum	CT 2 2	SEP 20	NOV 10	NOV 03	SEP 28	4100
Southern Desert	**32° F Mean**	**32° F Early**	**32° F Late**	**28° F Mean**	**28° F Early**	**Elevation**
Alamogordo	NOV 02	OCT 15	NOV 21	NOV 10	OCT 28	4350
Columbus	NOV 04	OCT 08	DEC 01	NOV 08	OCT 27	4065
Deming	OCT 31	OCT 10	NOV 18	NOV 05	OCT 18	4300
Lordsburg	NOV 02	OCT 09	NOV 27	NOV 08	OCT 09	4250
NMSU Las Cruces	OCT 29	SEP 30	NOV 20	NOV 05	OCT 17	3881
Orogrande	NOV 02	SEP 30	NOV 20	NOV 05	OCT 17	4182

Weather Impacts on Albuquerque Gardening

Dr. Jim Siebert, KOB-TV, Albuquerque, New Mexico

Altitude

Albuquerque is high desert with the altitude at 5,000 feet and even higher in the foothills. With the high altitude, the atmosphere is thinner and many plants struggle with the intensity of solar radiation. The altitude is also responsible for temperatures cooling at night during the long hot summers, as well as cold winters.

Date of First FallFreeze for the ABQ Metro Area					
Location	Elevation (Ft.)	Early	Average	Late	Years of Record
ABQ Sunport	5300	OCT 8	OCT 26	NOV 17	61
Los Lunas	4840	SEP 28	OCT 16	NOV 2	29
Bernalillo	5070	SEP 20	OCT 13	NOV 1	36
Sandia Park	7100	SEP 15	OCT 10	NOV 15	38

Average Growing Season				
Location	Elevation (Ft.)	Long (Days)	Short (Days)	Average (Days)
ABQ Int. Airpor	5300	226	155	191
Los Lunas	4840	190	143	161
Bernalillo	5070	195	117	163
Sandia Park	7100	190	113	150

Temperature

Heat and wind are commonplace during the spring and summer months and these are the culprits when plants look dry. But the evenings are cool and it's cool in the shade. That holds true for plants as well as people.

Plants may tend to dry out during the day and their appearance may be "wilty" in the afternoon, but it is important to wait until evening or the next morning before you decide it needs water. Many plants appear to wilt as a response to heat, but they tend to recover as soon as the heating of the day is over. This is a normal process for plants in New Mexico.

Precipitation

Oceans are the main source of water for the earth and Albuquerque is far away from any ocean. Mountains offer more challenges for water to make it into the area. Any moisture that must travel over a mountainous area tends to dry on the windward side, thus leaving little moisture for the leeward side. As moisture is forced upward in elevation, it tends to cool and condense and by the time the moisture makes it over the mountain, there is not a lot left. Therefore, since there are several mountain chains between Albuquerque and any oceans, it is difficult for any moisture to make it into the area.

Rainfall Extremes		
Location	Albuquerque	New Mexico
Greatest Annual Rainfall	16.3" in 1858	62.45" in 1941 at White Tail Otero County
Greatest 24-hour Rainfall	2.26" Sept 27-28 1893	11.28" May 19, 1955 Lake Maloya Colfax County

Another challenge for any rain to make it to the ground is the fact that the air is that for most months the air is very dry thus a lot of rainfall evaporates before it reaches the ground. This is called virga, and coincidentally this is also a main reason why so many people in New Mexico are struck by lightning. Most people do not head indoors during a thunderstorm until it starts raining. So while many of these storms are producing virga where none of the rain is making it to the ground, there

Albuquerque Climate Summary Period of Record: 1/1/1914 – 4/30/2000													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temp.	47.1	53.2	60.7	70.0	79.3	89.3	91.7	88.9	82.4	71.1	57.0	47.8	69.9
Average Min. Temp.	23.1	27.5	32.8	40.6	49.8	59.0	64.4	62.8	55.9	43.8	31.2	24.4	43.0
Average Total	0.4	0.4	0.5	0.5	0.7	0.6	1.4	1.5	1.0	0.9	0.4	0.5	8.7
Average Total Snow	2.4	1.9	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.1	1.1	2.4	10.3

is still plenty of lightning. Gardeners are considered in a high-risk group since most gardens are located outside, so it is important to remember common sense when a thunderstorm approaches. The weeds will still be there after the shower and in fact it may make it easier to weed when the soil has received a little rain.

Growing Season

The number of days between the last spring frost and the first frost of winter is called the GROWING SEASON. In Albuquerque, we have, on average, a growing season of 150 to 191 days, depending on where you live.

Average Fall Freeze Dates						
	32°F Mean	**32°F Early**	**32°F Late**	**28°F Mean**	**28°F Early**	**Elevation**
Santa Fe	14-Oct	3-Sep	2-Nov	23-Oct	27-Sep	6718'
ABQ Sunport	26-Oct	8-Oct	17-Nov	6-Nov	17-Oct	5300'

You can safely set out tender plants after the last frost of the season, but how do you know when the last frost has occurred? Fortunately, weather experts have been keeping records for many years and from these records we learn that the last frost date in Albuquerque generally occurs between April 18th and May 8th. However, these dates are from the "averages" over the years, and as we already know it is impossible to know if this year is going to be "average."

So to be safe, you can probably plant by the end of April, but you should watch weather reports closely and be prepared to protect tender plants with coverings of cloth, plastic jugs, or mulch if a late frost is predicted. You can plant earlier, but then you need to be rather vigilant for the following weeks.

Weather statistics for Albuquerque are gathered at the airport, valley, foothill, and mountain locations. Keep in mind that the foothill and mountain locations will have later frost dates.

The FIRST FROST means the first autumn night when temperatures dip low enough to kill tender foliage. This typically occurs around October 26th, but in the Heights it can happen earlier, as well as in other parts of the city. You need to know this date so you can figure how many days you have to "make a crop" when planting vegetables. If you plant squash on July 1st, and the seed packet says 95 days to maturity, you should have squash to harvest in October, but keep in mind that this would be cutting it close to the first frost. For such a late planting date, a faster-maturing variety would be a better choice.

Microclimates

The climate varies significantly from the valley to the tops of the mountains, and there are many different climates between these two extremes. Some areas are warmer, or may be protected from the wind, while other may be colder and so forth. It is important to consider how your planting area may differ from other locations around the city. Look for places that will help you take advantage of precious runoff from showers like an area near a draining roof or from a raised bed.

Wind patterns and the formation of wind tunnel effects between structures and planting areas create microclimates. The wind causes more rapid drying, even in the winter, and this will affect the conditions of plants.

When you plan a landscape or make new plantings, try to construct your own microclimate that will give you a weather advantage.

Orchards are frequently planted on the north slope of a hill because it warms slower than the south slope, keeping the trees dormant longer and reducing the risk of damage by late frosts in the spring.

Apricots, almonds, and other early flowering plants can be planted on the north side of a house or wall. There, the shadow keeps the ground and plant colder longer, delaying bloom.

Average Annual Precipitation Data Collected by the National Weather Service		
Paradise Hills	10.11 inches	West Side
Corrales	7.90 inches	Valley
Rio Bravo & Isleta	8.97 inches	Valley
Indian School & I-25	9.13 inches	Heights
Wyoming & Candelaria	10.79 inches	Heights
Chelwood & Candelaria	11.74 inches	Heights
Indian School & Tramway	13.37 inches	Foothills
Glenwood Hills	14.68 inches	Foothills
Sandia Park	19.08 inches	East Mountains

A cold frame or hot bed can lengthen the growing season. In a properly constructed cold frame, you can garden 12 months of the year.

Build or grow windbreaks to protect your garden. Shade and wind protection reduces water loss, sun-scald, blossom-end, and other problems. Design your garden to utilize any existing wall, structure, or hedge to block the prevailing winds.

New Mexico has a definite surplus of sunlight. Most of the crops you grow will do better in up to 33% shade. Plant tall crops such as corn or amaranth (C-4 crops, which need as much light as they can get) to partially shade other crops (C-3 crops, which need only "full sunlight").

Use the warmth of a south-facing wall to grow more tender plants, or to coax early bloom from frost-tolerant bulbs and perennials. Large landscape rocks can function the same way for small spring plants. An enclosed courtyard is the ultimate in protected growing conditions.

Orientation

North, south, east, or west – What's the difference? For many plants, orientation can mean the difference between surviving cold winters, or not; making a fruit crop, or not; getting through a hot summer beautifully, or not.

The best orientation for many plants in Albuquerque is one that gives morning sun and late afternoon shade. This means the east side of a house or other structure, or a large tree or hedge.

Plants that need a lot of heat year-round will be happy on a south-facing wall (unshaded).