



Vegetable Planting and Harvest Times – 3000 to 6000ft Elevations

Planting seeds or transplants at the optimal time of year helps ensure quick seed germination and the establishment of good roots, essential for nutrient uptake. This document provides guidelines for successful gardening in the central highlands of Arizona. There are several factors to consider.

Seeds or Transplants (Starts)

The growing season is quite short for the higher elevations, e.g., 221 days for the Verde Valley, 153 days for Prescott, so it is better to start seeds indoors for some crops or purchase starts for transplanting. Root crops are best planted in the ground from seed. Eggplant, tomatoes, peppers, broccoli, Brussels sprouts, cabbage and cauliflower are most often transplanted using starts, either purchased or started indoors. You may prefer to purchase starts for other vegetables and herbs that also do well when planted in ground from seed, depending on your microclimate and personal preference.

Soil Temperature

Knowing that the soil is warm enough for a spring planting is essential for seed germination. If the soil is too cold seeds may not germinate or when they do germinate plant growth may be stunted. Soil thermometers (digital or analog) are available at garden centers or online or use a kitchen meat thermometer. Take measurements in the morning when soil is the coolest. You can also check in the afternoon to get an average.

1. Insert the thermometer, pushing it 2 to 4 inches into the soil (typical planting depth for seeds), or less for small seeds.
2. Allow the thermometer to stabilize, which could take 30 seconds to a few minutes.
3. Take readings for 3 consecutive days to ensure your soil has warmed consistently for the crop's ideal temperature.

In the spring you can help warm the soil by covering it with black plastic or row cover. In the heat of summer shade cloth and mulch can help cool the soil.

Air Temperature

Day and night temperatures are another indicator of the appropriate planting time for the seeds or transplants. Air temperature influences soil temperature, seed metabolism, and moisture retention. While soil temperature is a key factor for germination, air temperatures are also important. Air warms the soil but if the air temperature is too high seeds may dry out before germinating or germinate erratically. If air temperature is too low, the soil stays cold and seeds remain dormant or germinate slowly. Cooler air helps retain soil moisture, critical for seed swelling and sprouting.

Expected Frost Dates

Another factor to consider is when to expect a spring and fall frost. Knowing your **expected** last spring frost date and your **expected** first fall frost date is important but not always practical due to inconsistencies in weather.

On-line tools are available to help you determine the % probability of a date for a late spring or early fall frost. Following is an example of a website that uses information generated by NOAA (National Oceanic and Atmospheric Administration). NOAA typically provides average frost/freeze dates based on 30-years of climate data that are updated every 10 years. The current information is for 1991-2020.

<https://garden.org/apps/frost-dates/>

Enter your ZIP code and it will provide historical frost information for the town closest to you.

Definitions: Frost – when ice forms on surfaces at or below 32 degrees; Freeze – when temperatures reach 32 degrees or below for at least an hour; Hard Freeze – when temperatures drop to 28 degrees or lower for an hour or more.

Following is an example of a chart to determine the probability of when to expect a fall frost. The “**First 32°**” line indicates there is a 10% chance the first 32° temperature will be on Oct 7th.

In the Fall									
Temperature	10%	20%	30%	40%	50%	60%	70%	80%	90%
First 16°	Nov 14	Nov 21	Nov 26	Dec 1	Dec 5	Dec 9	Dec 13	Dec 18	Dec 25
First 20°	Nov 8	Nov 13	Nov 17	Nov 21	Nov 24	Nov 27	Dec 1	Dec 5	Dec 11
First 24°	Oct 27	Oct 31	Nov 3	Nov 6	Nov 9	Nov 11	Nov 14	Nov 17	Nov 22
First 28°	Oct 13	Oct 19	Oct 23	Oct 26	Oct 29	Nov 1	Nov 5	Nov 9	Nov 14
First 32°	Oct 7	Oct 12	Oct 15	Oct 18	Oct 21	Oct 24	Oct 27	Oct 30	Nov 4
First 36°	Sep 24	Sep 29	Oct 2	Oct 5	Oct 8	Oct 10	Oct 13	Oct 17	Oct 21

Determining the % probability you are comfortable with depends on:

- the crop’s cold tolerance, i.e. 50-70% for cabbage, kale broccoli and peas because they can handle a light frost, 30% for semi-hardy crops with protection, 10% or less for frost sensitive plants like squash, tomatoes and peppers
- available resources (i.e. ability to replant if crop damage, using row covers or cold frames, etc.)

The “weeks before expected frost” on the page 3 chart is a guideline. You may choose to plant starts earlier if you can provide some frost protection.

Soil pH

Most vegetables and herbs prefer a soil pH of 6.0 to 7.5. Southwest soils tend to be alkaline (higher than 7.5). Adding soil sulfur can help lower the pH. Your local Cooperative Extension office may perform free soil pH tests.

Days to Maturity or Harvest

Most but not all seed packets include the number of days from planting seeds to when the crop can be harvested. Maturity can vary, depending on the microclimate. Knowing the expected maturity time is helpful.

Hours of Sun

Most crops will need 6 to 8 hours of sun, and the seed packet usually provides that information. Keep in mind that information is “in general” and with our intense sun, some shade cloth or other means of protection may be required.

When to Harvest

Higher elevation climates allow some crops to be planted and harvested in different seasons, for example, broccoli can be planted in the spring and harvested in summer and planted in late summer for a fall and winter harvest. This document includes both options, but you want to check the day, night and soil temperatures to be sure the weather is not too hot for the suggested summer planting time.

Within the 3000 and 6000ft elevations there can be a wide variety of growing season start and end times. Altitude or elevation itself does not affect the planting times. You will notice the following chart does not include planting dates. Soil, air temperatures and knowing expected frost dates are a much more accurate method of determining planting times because weather is such a contributing factor to successful vegetable gardening.



Photo source: Karen Kumar

Vegetables & Herbs	Best Option		When to Plant				When to Harvest			
	Seeds	Trans-plants (Starts)	Optimal Planting Soil Temp.	Day/Night Temps.	General Guidelines (Before=Expected)	Your Planting Date	Spring	Summer	Fall	Winter
Artichokes		X	60-70°F	D 60-75°, N 50-65°F	2 wks before last spring frost			X		
Asparagus		Crowns	50-65°F	D 60-75°, N 40-55°F	Early spring when soil is workable		X			
Basil	X		60-70°F	D 70-85°, N >50°F	2-4 wks after last frost			X		
Beans, Lima	X		>65°	D 70-85°, N 60-70°F	After last spring frost			X		
Beans, Snap Bush	X		>65°	D 70-85°, N 55-70°F	1-2 wks after last spring frost			X		
Beans, Snap Pole	X		>65°	D 70-85°, N 55-70°F	1-2 wks after last spring frost			X		
Beets	X		40-70°	D 50-70°, N >40°F	① 6-8 wks before first fall frost ② 2-3 wks before last spring frost		①		②	
Bok choy	X		50-70°F	D 55-75°, N >45°F	① 2-4 wks before last spring frost ② 6-8 wks before first fall frost		①		②	
Broccoli		X	50-65°	D 60-70°, N 40-55°F	① 2-4 wks before last spring frost ② 6-8 wks before first fall frost		①		②	②
Brussels sprouts		X	50-70°F	D 60-70°, N 45-60°F	85-100 days before first fall frost				X	
Cabbage Seeds	X		45-75°F	D 60-70°, N 45-60°F	Early spring when soil is workable			X		
Cabbage Transplants		X	45-70°F	D 55-70°, N 45-60°F	3-4 wks before last spring frost			X		
Carrots	X		45-85°F	D 65-70°, N 40-60°F	① 2-3 wks before last spring frost ② 8-12 wks before first fall frost		②	①	②	
Cauliflower		X	① 50-70°F ② 65-75°F	① D 55-70°, N 45-60°F ② D 65-75°, N 50-60°F	① 1-2 wks before last spring frost ② 6-8 wks before first fall frost			①	②	
Chard	X		60-70°F	D 60-75°, N 50-60°F	① 2-4 wks before last spring frost ② 6-8 wks before first fall frost			①	②	
Cilantro	X		55-60°F	D 60-75°, N 50-60°F	After last spring frost			X		
Collard greens	X		45-85°F	D 60-75°, N 45-65°F	① 4-6 wks before last spring frost ② 6-8 wks before first fall frost			①	②	
Corn	X		60-65°F	D 70-85°, N 50-60°F	After last spring frost			X		
Cucumber	X		70-95°F	D 70-85°, N 60-70°F	After last spring frost			X		
Eggplant		X	>65°F	D 70-90°, N >60°F	2-3 wks after last spring frost			X		
Garlic	Cloves		50-60°F	D 50-65°, N 32-50°F	2-3 wks before first fall frost			X		
Kale	X		45-85°F	D 60-75°, N 45-55°F	① 4-6 wks before last spring frost ② 6-8 wks before first fall frost		①		②	
Kohlrabi	X		45-75°F	D 60-75°, N 45-55°F	4-6 wks before last spring frost		X	X	X	
Leek	①	②	50-85°F	D 55-75°, N >40°F	① 8-10 wks before first fall frost ② 4 wks before last spring frost		①	②		①
Lettuce, head	X		60-65°F	D 60-70°, N 40-60°F	① 2-4 wks before last spring frost ② 6-8 wks before first fall frost		①		②	
Lettuce, leaf	X		60-65°F	D 60-70°, N 40-60°F	① 2-4 wks before last spring frost		①		②	

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					② 6-8 wks before first fall frost					
Melons	X		70-95°F	D 75-90°, N 60-70°F	1-2 wks after last spring frost			X		
Okra	X		65-75°F	D 75-95°, N > 60°F	2-3 wks after last spring frost			X		
Onions	Sets	X	50-70°F	D 50-75°, N 35-50°F	① 4-6 wks before last spring frost ② 4-6 wks before first hard frost			① ②		
Parsley	X		70-75°F	D 60-75°, N 40-60°F	2-4 wks before last spring frost			X		
Parsnip	X		50-70°F	D 50-75°, N > 35°F	2-4 wks before last spring frost				X	
Peas	X		45-75°F	D 55-70°, N > 32°F	4-6 wks before last spring frost		X			
Peppers		X	70-85°F	D 70-85°, N > 55°F	1-2 wks after last spring frost			X		
Potatoes, Irish	Chunks		45-55°F	D 60-70°, N > 40°F	2-4 wks before last spring frost				X	
Potatoes, Sweet	Slips		65-70°F	D 75-80°, N 55-70°F	2-4 wks after last spring frost			X	Before frost	
Pumpkin	X		60-70°F	D 70-85°, N 55-65°F	After last spring frost				X	
Radish	X		45-85°F	D 50-70°, N 40-60°F	① 4 wks before spring frost ② 4-6 wks before first fall frost		①		②	
Rhubarb		Crowns	40-60°F	D 50-65°, N 40-50°F	Early spring when soil is workable or in fall, 4-6 wks before ground freezes		X			
Rutabaga	X		50-70°F	D 50-70°, N 40-55°F	2-4 wks before last spring frost		*	X	X	
Spinach	X		40-75°F	D 50-70°, N > 35°F	① 1 st wk in Oct ② 1 st wk in Sept		①		②	②
Squash, summer	X	X	60-70°F	D 70-85°, N > 55°F	1-2 wks after last spring frost			X		
Squash, winter	X	X	65-70°F	D 70-85°, N > 55°F	1-2 wks after last spring frost			X	Before frost	
Tomatoes		X	65-70°F	D 70-85°, N 55-70°F	1-2 wks after last spring frost			X	X	
Turnips	X		60-75°F	D 55-75°, N 45-55°F	Up to 9 wks before first fall frost		*	X	X	

Notes: 1) Peppers and tomatoes won't set fruit when temperature is over 90°. 2)* Can overwinter with protection for early spring harvest.

Additional Resources

[Ten Steps to a Successful Vegetable Garden](#)

Growing information on many vegetables and herbs <https://harvesttotable.com/>

Yavapai County Gardening Publications <https://extension.arizona.edu/local-offices/yavapai-county/yavapai-gardening>

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