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Planting the Vegetable Garden

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The College of Agricultural, Consumer and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research, and Extension programs.

Know YOUR Climate --

- Sun / Shade patterns
- Sun moving from north/south sky
- Elevation
- Winds
- Protection
- Frost dates
- Growing Days
- Temperature swings



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Spring Frost Dates (Avg range)

- Jun 1-15
 - Grants, Gallup, Mora, Raton
- May 15-Jun 1
 - Las Vegas, East Mtns, Espanola, Alcalde, Santa Fe
- May 1-15
 - ABQ valley, Los Lunas, Silver City, Farmington
- Apr 15-30
 - City of Albuquerque, Roswell, Portales
- Apr 1-15
 - Las Cruces, Alamogordo*, Carlsbad
- <https://www.weather.gov/abq/springfreezetable>
- <https://www.plantmaps.com/interactive-new-mexico-last-frost-date-map.php>
- All dates are variable within regions, elevation, and vary year to year. Occasional later frost dates may occur.



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Plan BEFORE you plant

- How much space do you have?
- How do you plan to irrigate?
 - Drip, Hose, Flood,
- Do any of your plants require trellising?
 - Cucumbers, pole beans, tomatoes,
- How much room per variety do you need?



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Soil Prep and Health



- Dry soils – hydrophobic / dead
- Re-hydrate and mix
- Add compost 1 -2 week before planting
- Turn in cover crops – 3 weeks before planting
- Till vs minimal-tillage
- Raised bed vs in-ground
- Test manure before applying



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Container Gardening



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Raised Bed



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Row Covers

- Hoop supported vs. floating
- Perforated polyethylene vs. spun bonded polyester or polypropylene
- Provides a 2 to 4°F temperature boost
- May provide protection from insects



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Cold Frames

- Good place to start hardy seeds germinating
- Cool season vegetables will thrive within, even with freezing temperatures outside
- Safe place to start transplants being hardened off
- Protects from early frosts
- Easy to construct



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Mulch

- A layer of material on top of the soil to protect the soil, retain moisture, and reduce weeds.
- Types
 - Straw, leaves, newspaper, plastic, pecan shells, compost
- How to apply
 - Once plants are established, cover ground 2 – 4 inches
 - Water to help settle



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Mulching



- Pros
 - Keeps weeds at bay
 - Conserves soil moisture
 - Increases soil temp
- Cons
 - Could harbor pests
 - Labor and cost investment
 - Increases soil temp



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Watering

Be Consistent – check
Over + underwater
Drying out

Bubblers, drip, on timers, Ollas,
water catchment



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Vegetables and Temperature

- Many vegetables expire at cold temps; some suffer at high temps
- Plant vegetables for growth during their preferred temperature
- Warm Season vs. Cool Season Vegetables
- In general, warm season vegetables prefer temperatures in the 75 – 85 F range; cool season vegetables prefer temperatures in the 65 – 75 F range
- Certain plants germinate in preferred soil temperature ranges



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Soil Temperature for Veg Seed Germination

Source: <http://sacmg.ucanr.edu/files/164220.pdf>

Crops	Minimum (°F)	Optimum range (°F)	Maximum (°F)
Asparagus	50	75-85	95
Beans, Lima	60	75-85	85
Beans, Snap	60	75-85	95
Beets	40	65-85	95
Broccoli	40	60-85	95
Cabbage	40	60-85	95
Carrots	40	65-85	95
Cauliflower	40	65-85	95

- <http://sacmg.ucanr.edu/files/164220.pdf>
- Univ of California ANR Extension
- <https://extension.oregonstate.edu/gardening/techniques/soil-temperature-conditions-vegetable-seed-germination>



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Vegetable Planting guide

- <https://cmg.extension.colostate.edu/Gardennotes/720.pdf>

Table 1 – Vegetable Planting Guide

Vegetable	Germination Temperature ¹			Plant Spacing ²	Planting Depth	Days to Germination	Typical Days to Harvest	Age of Transplant (weeks)
	Min.	Optimum	Max.					
Cool Season Crops³								
Beets	40°	80°	90°	4-6"	¾-1"	7-10	60	
Broccoli ⁴	40°	80°	90°	18"	½"	3-10	65T ⁴	5-7
Cabbage ⁴	40°	80°	90°	18"	½"	3-10	85T ⁴	5-7
Carrots	40°	80°	90°	2-3"	¼"	10-17	70	
Cauliflower ⁴	40°	80°	90°	18"	½"	3-10	65T ⁴	5-7
Kohlrabi	40°	80°	90°	7-9"	½"	3-10	50	



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Days growing to maturity --

Red Russian
29 days baby; 50 days full size. *B. napus*
Smooth green, purple-veined leaves for baby

Habanero 598G 80 days green; 100 days orange ripe.
C. chinense

Waltham Butternut 105 days. *C. moschata*
Still the benchmark for large butternuts.

Variety	Days
Catalyst XR	66
Kickoff XR	69
Signature XR	73
Anthem XR	74
Natural Sweet	74
Xtra-Tender 3473	75
Vision MXR	75
American Dream	77
Enchanted	78
NEW Packout	79

Growing days to harvest based on optimal growing conditions. All dates are approx.

Plant description help inform growing and planting intentions based on your growing window.

Screenshots taken from seed catalogs. No endorsements of varieties or companies are being made.



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What to plant now – depends where you are

- Lettuce
- Spinach
- Kale
- Swiss Chard
- Radish
- Peas
- Broccoli**
- Cauliflower**
- Brussel sprouts**
- Carrots
- Beets
- Turnips
- Kohlrabi



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Cool Season Plants

- Lettuce
- Spinach
- Sweet Peas
- Radish
- Snapdragons
- Bachelor buttons
- Stock
- Calendulas
- Pansies



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Cool Season Vegetables: Family Ties

Allium Family (*Alliaceae*): Onions, Garlic, Leeks

Sunflower Family (*Asteraceae*): Lettuce

Parsley Family (*Umbelliferae*): Carrots, Celery

Goosefoot Family (*Chenopodiaceae*): Spinach, Beets, Chard

Mustard Family (*Cruciferae*): Broccoli, Cauliflower, Cabbage, Turnips, Collards, Kale



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Cool-Season Vegetables

- Highly or somewhat frost tolerant
- Seeds germinate at cool soil temperatures
- Tend to have shallow root systems
- Greater response to N and P application
- Bolting (seed stalk development) may be a concern when hot



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Cool-season Vegetables

- Many develop superior flavor and quality when they mature in cooler weather (example: broccoli)
- Flavor is improved with frost: cabbage, kale, kohlrabi, carrots, chard, turnip, tatsoi
- Lettuce and spinach tend to bolt and develop bitter flavor when maturing in hot weather
- Lettuce and spinach seed will not germinate if soil temp is $>85^{\circ}\text{F}$



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Cool Season Vegetables – Planting Guide for NM Area 2 (Albuquerque, Los Lunas, Santa Fe)

Vegetable Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beets			↔				↕					
Broccoli			↕				↕					
Carrots		↔					↔					
Chard, Swiss		↔					↔					
Lettuce, Leaf		↔					↔					
Onions		↔										
Spinach		↔						↔				



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Warm Season Plants



- Melons of all types
- Corn
- Tomatoes
- Sweet peppers
- Gourds
- Zinnias
- Blanket flower
- Sunflowers



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Warm Season Vegetables: Family Ties

Grass Family (*Poaceae*): Corn

Nightshade Family (*Solanaceae*): Tomatoes, Eggplant, Peppers, Potatoes

Mallow Family (*Malvaceae*): Okra

Bean Family (*Leguminosae*): Green Beans, Kidney Beans, Pinto Beans

Cucurbit Family (*Cucurbitaceae*): Cucumbers, Squash, Melons



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Warm Season

- Vegetables grown for their 'fruit' (tomatoes, peppers, melons, squash) require at least 8 hours of sunlight per day for healthy growth
- warm season vegetables prefer temperatures in the 75 – 85 F range and will be injured or killed by frost
- Check the soil temperature too
- Best as transplants



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Warm Season

- Start Seedlings 4-8 weeks before last frost
- Harden off tender seedlings
- Protect from cold and insects
- Set out when soil and outside temperatures are warm



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Warm Season Vegetables—Planting Guide for NM Area 2 (Albuquerque, Los Lunas, Santa Fe)

Vegetable Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beans, Pole					↔							
Corn, Sweet				↔	↔	↔						
Melons				↔								
Okra				↔								
Peppers, Bell & Chile				↔								
Potatoes, Irish				↔								
Squash, Summer				↔								
Tomatoes				↔								



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Direct seeding or transplanting?

- Some plants don't take transplanting well (cucurbits, root crops, beans and peas).
- Some do (tomato, pepper, eggplant, greens of all types, early corn).
- All plants that transplant well do just as well direct seeded.
- Can gain a week or two, depending on soil temperatures.
- Cost, hassle trade-offs.
- May help get ahead of weed problems.

Harvest at the Right Time



- Know your vegetables.
 - Premature harvest reduces amount of flavor compounds.
 - Late harvested may result in a fibrous, less tender, bland or bitter crop.

Attract pollinators and beneficials



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Additional Resources

- NMSU Extension Publications --
https://aces.nmsu.edu/pubs/_h/
- H – 252 Hoop House Vegetable
- H-457 Home Vegetable Gardening
- H-457B Growing Zones and Recommend Varieties
- H-216 When to Harvest Vegetables
- H-220 Starting Plants Early
- And many more ...



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THANK YOU

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