



PLANNING YOUR GARDEN IN THE JEMEZ

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JEMEZ SPRINGS PUBLIC LIBRARY

JUST FYI, WHAT & HOW DO I GROW?

Pretty conventionally, mostly organically

Permanent herb & berry beds

Tilled vegetable gardens & raised beds

Rotate crops - especially nightshade family

Don't use pesticides or herbicides

Make & use a lot of compost; I mulch

Use drip tape and drip irrigation to water, put on timers

Use companion planting

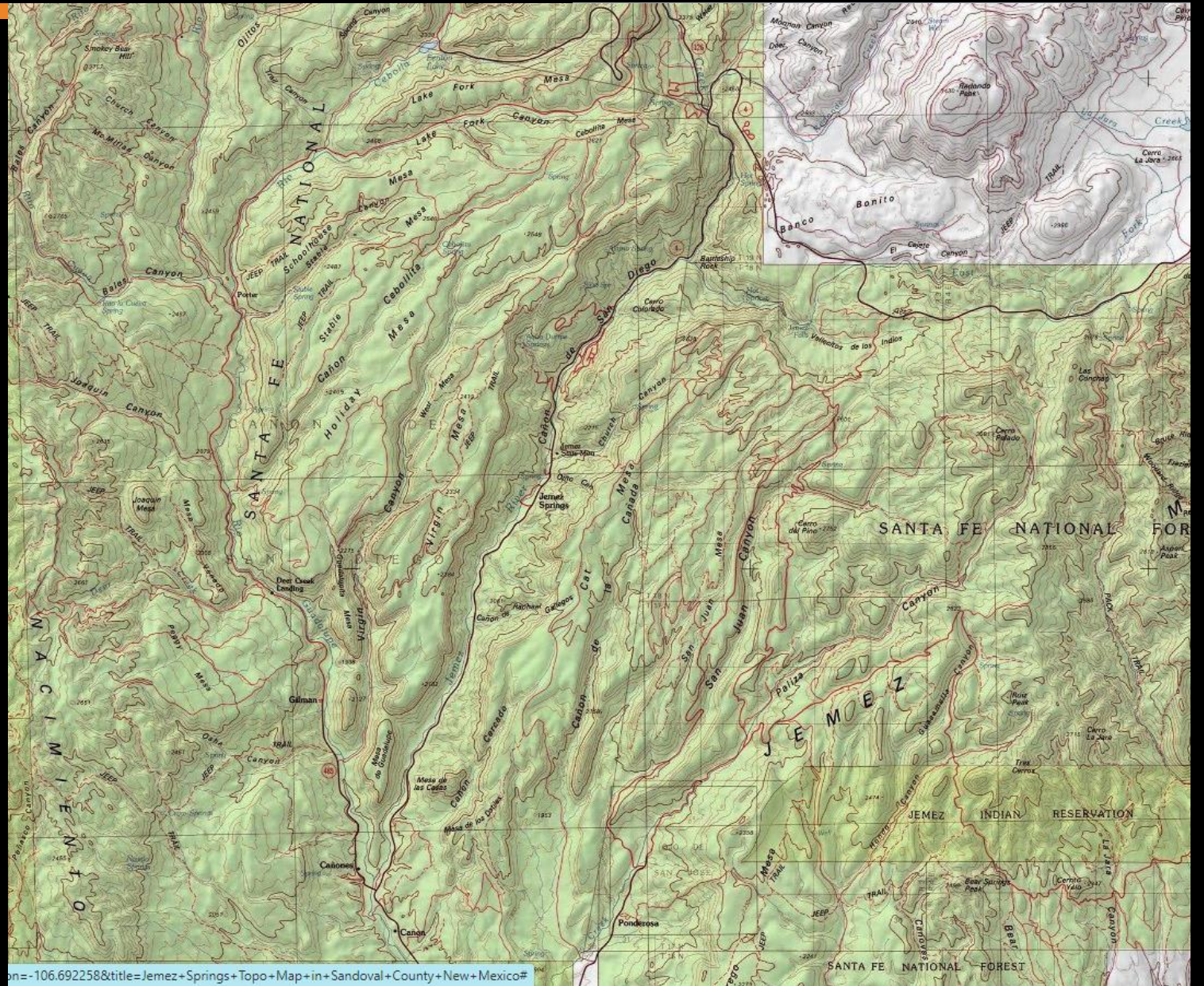
Experiment a lot

Tomatoes companion-planted with flowers and herbs



WHY IS GARDENING A CHALLENGE HERE?

- SOIL
- MOUNTAINS
- CLIMATE



CHALLENGE 1: SOILS

TEND TO BE:

Alkaline (high pH), affects
nutrient availability

Low in organic matter –
affects water retention and
soil micro-organisms



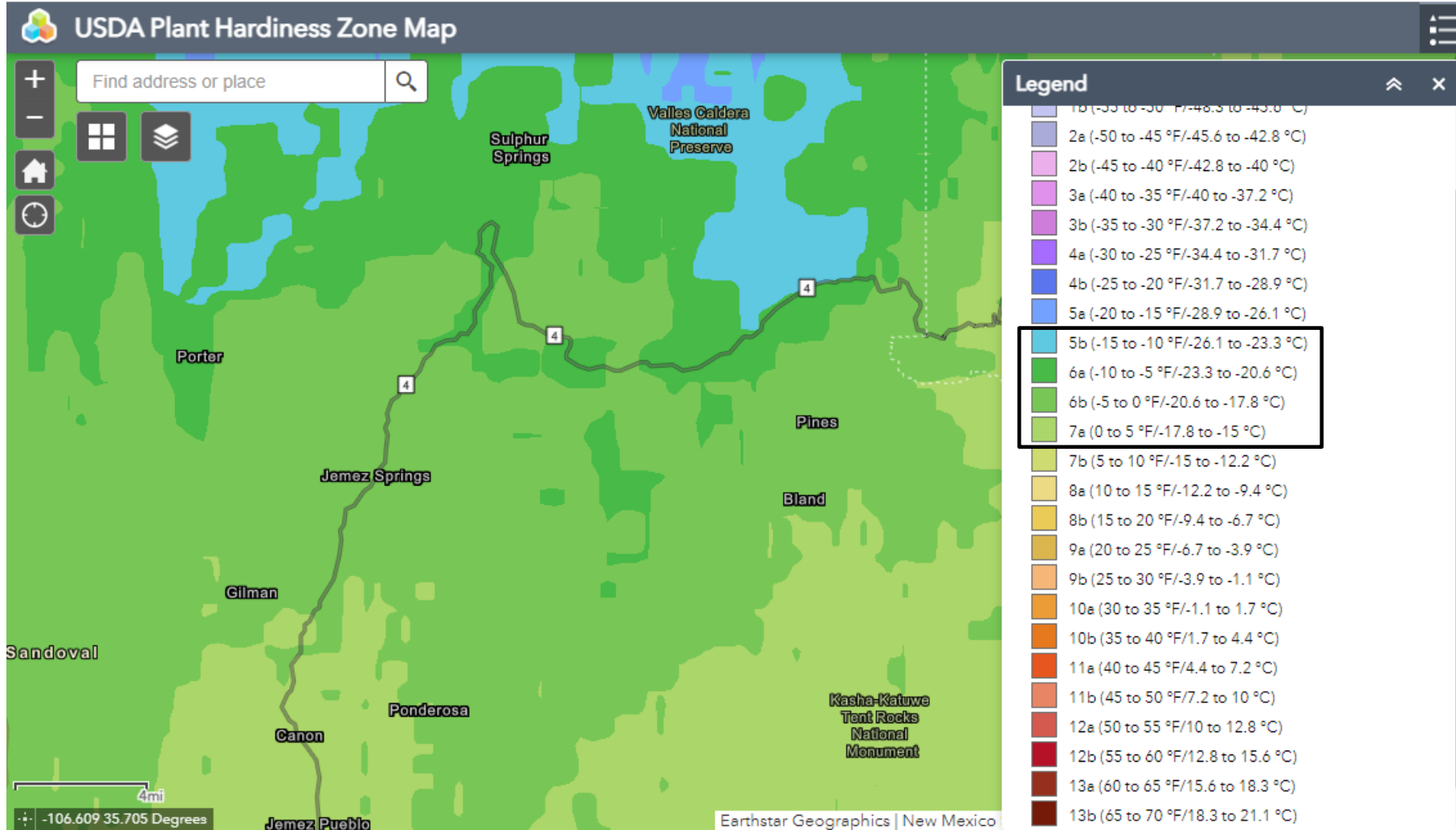


CHALLENGE 2: MOUNTAINS

- High elevations, range from 5600 - 8000+ ft
- Short growing seasons at higher elevations
- Topography creates microclimates

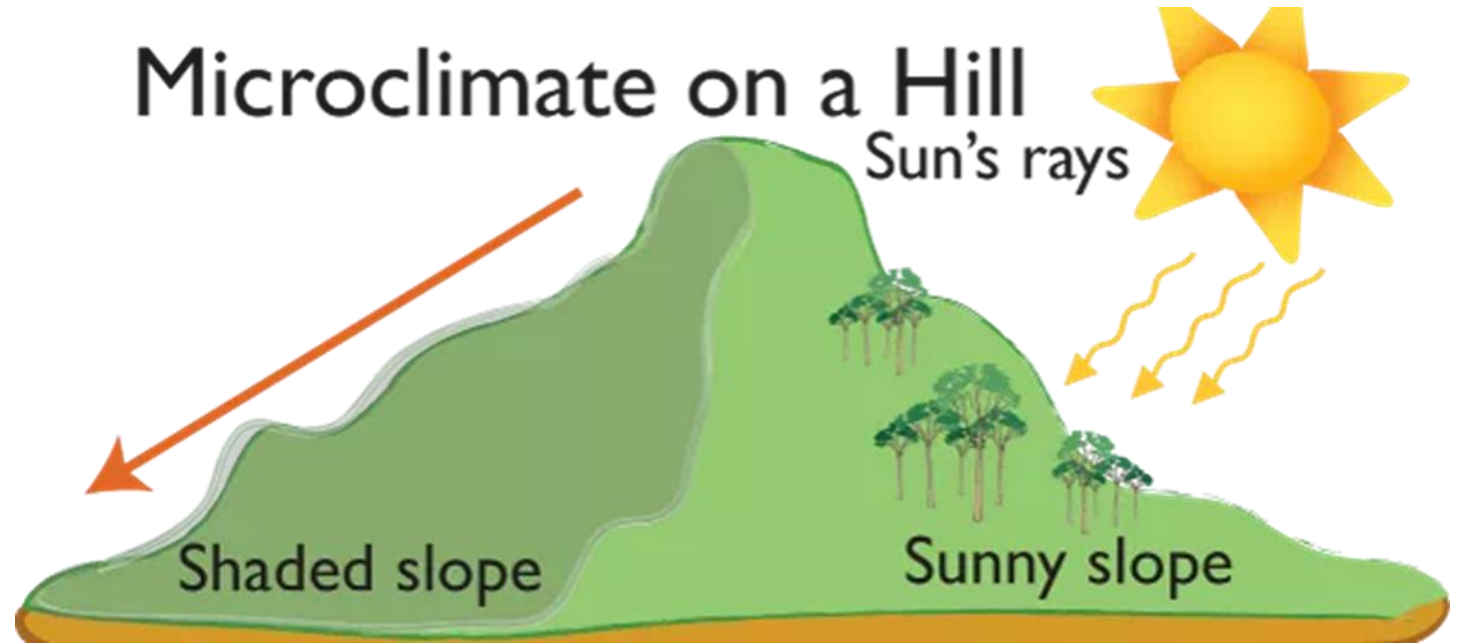
USDA HARDINESS ZONES

Commonly used for planting guidelines – seed packets, plant tags; somewhat useful



<https://planthardiness.ars.usda.gov/pages/view-maps>

- South-facing slopes can get too much sun and north-facing slopes, too little
- Temperatures decrease by $5.4^{\circ}/1000$ feet elevation
- Cold air drains from high to low at night; slope bottoms and valleys can get cold air drainage and frost pockets

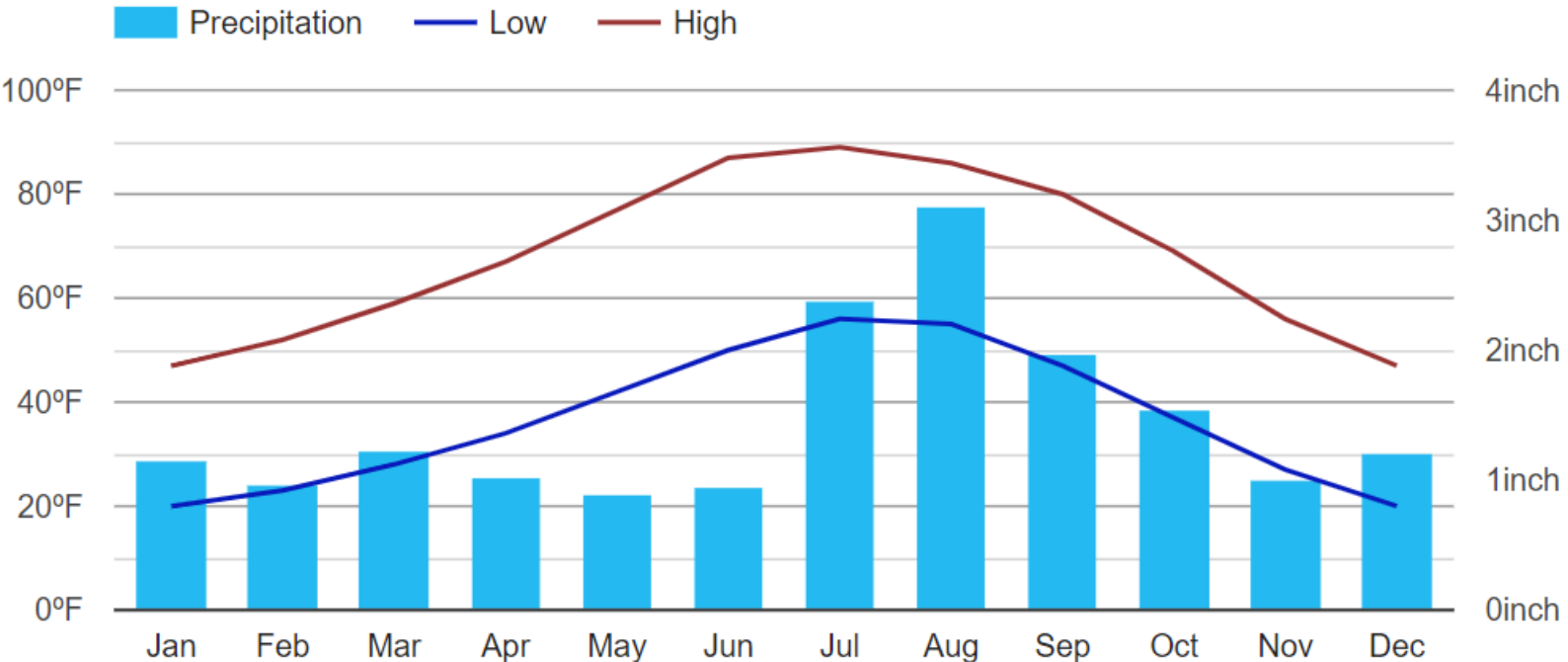


CHALLENGE 3: SOUTHWESTERN CLIMATE

- Low precipitation
- Summer monsoons
- Wind
- Scorching heat
- Blazing sun

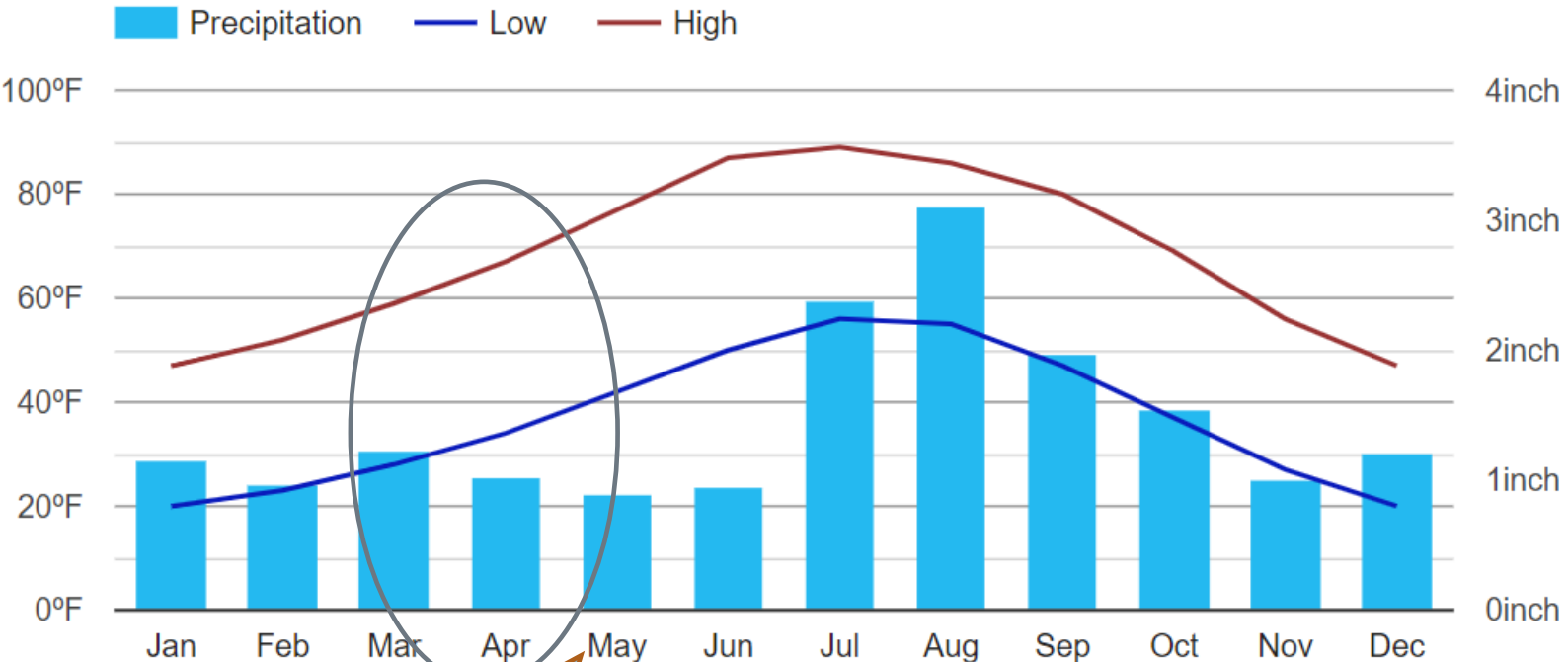


Jemez Springs Climate Graph - New Mexico Climate Chart



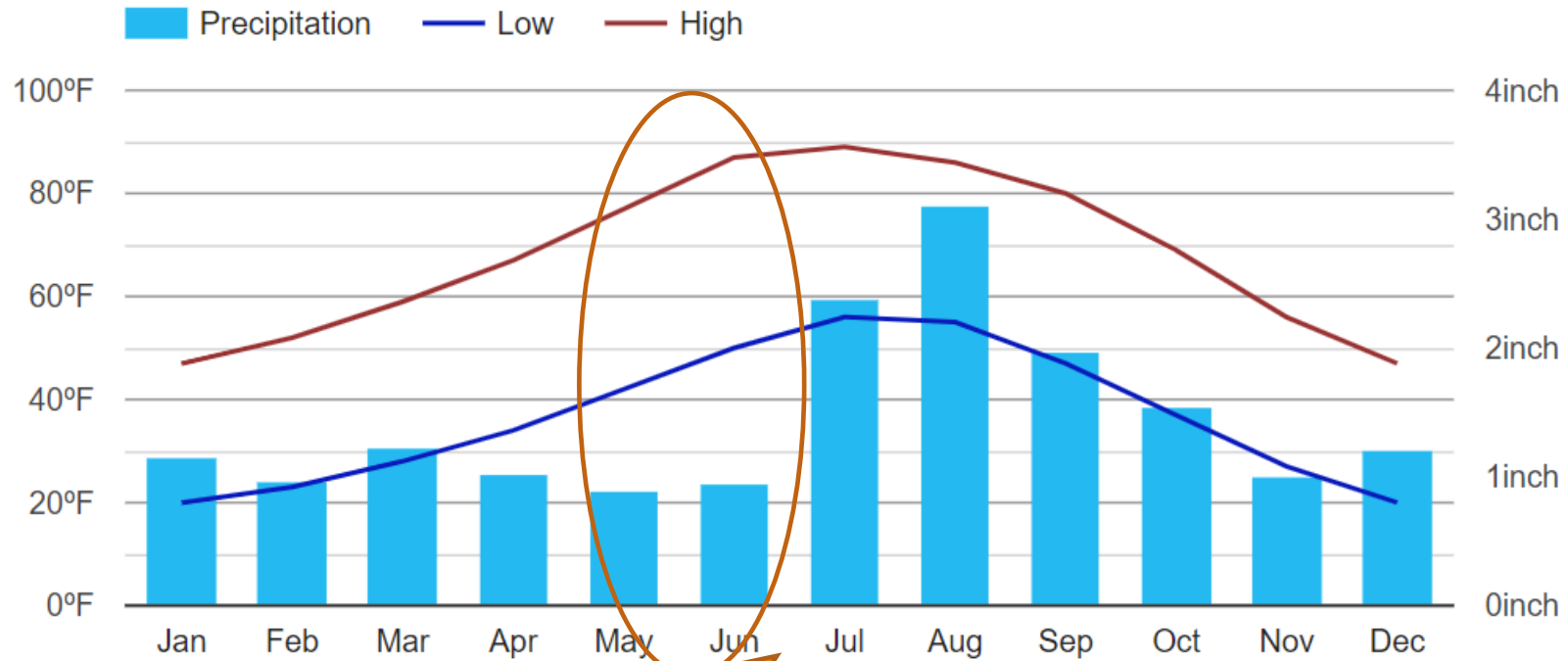
Average precipitation about 17" (liquid)

Jemez Springs Climate Graph - New Mexico Climate Chart



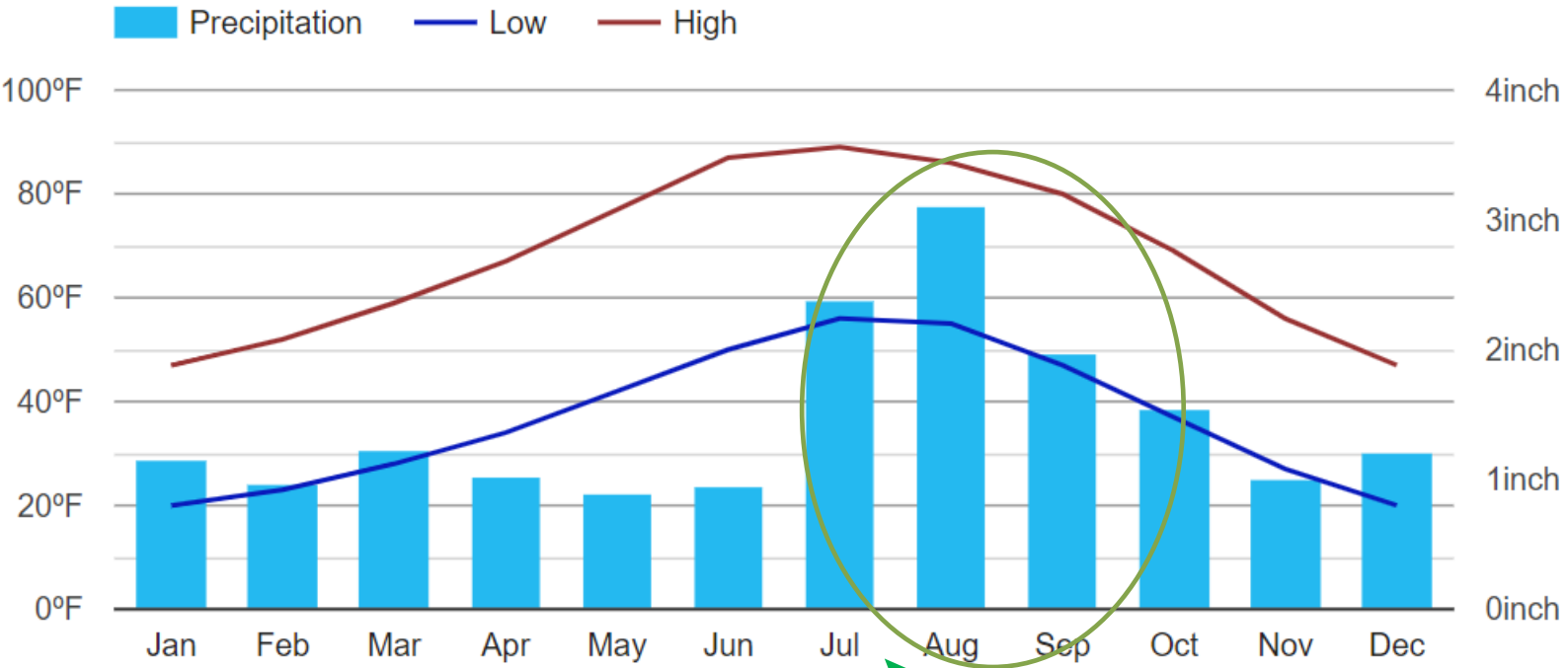
SPRINGTIME

Jemez Springs Climate Graph - New Mexico Climate Chart



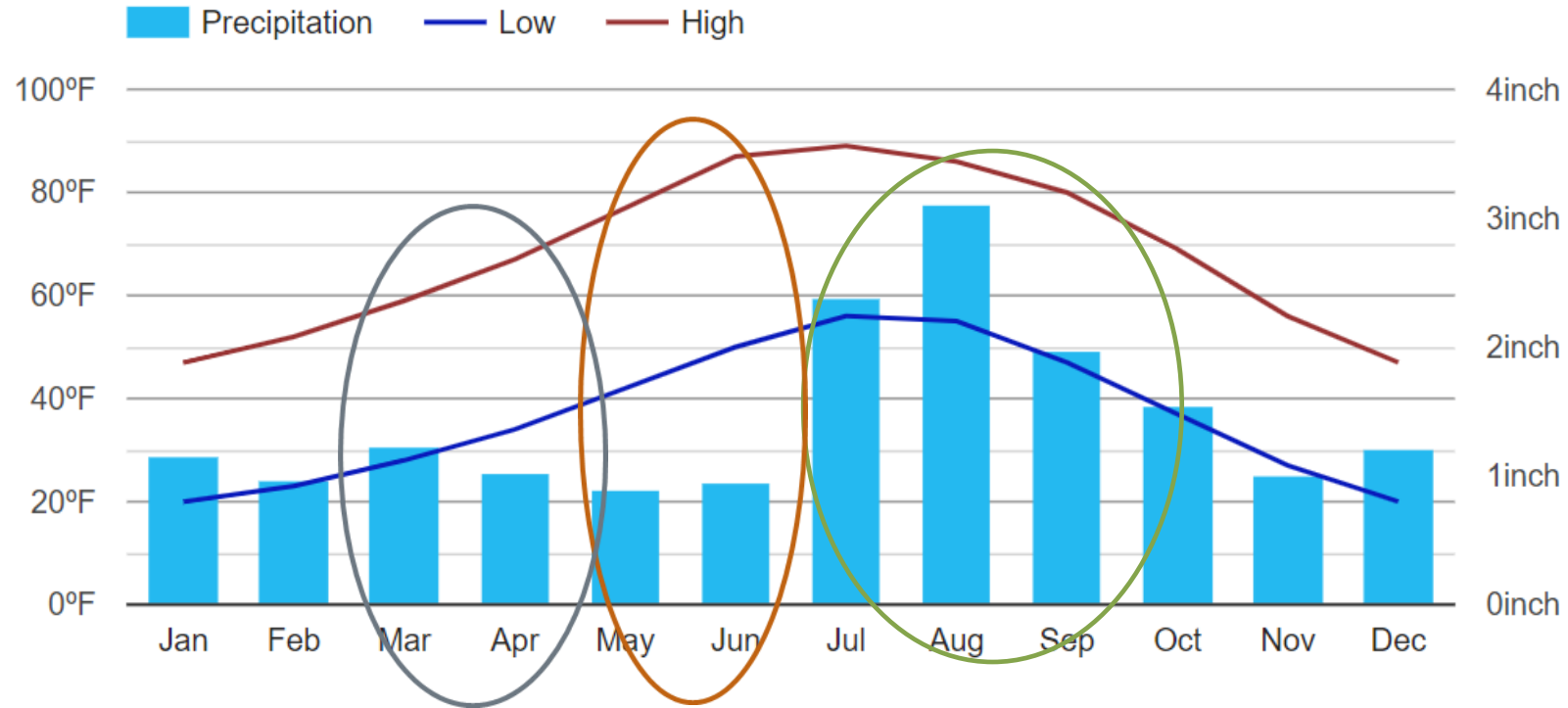
**HOT, DRY, WINDY
And INTENSELY SUNNY
"arid fore-summer"**

Jemez Springs Climate Graph - New Mexico Climate Chart



MONSOON →

Jemez Springs Climate Graph - New Mexico Climate Chart



There are **3** parts of the growing season



SO,
GARDENING!

WHEN TO PLANT?



FROST DATES



SOIL TEMPERATURES



BEFORE/AFTER
MONSOON ONSET

FROST DATES: THREE KINDS OF FREEZES

Light freeze - 29° to 32° Fahrenheit will kill tender plants.

Moderate freeze - 25° to 28° Fahrenheit is widely destructive to most vegetation.

Severe or hard freeze - 25° Fahrenheit and colder causes heavy damage to most plants.

The duration of the temperatures matters - whether the freeze is for minutes or hours.

SOME VEGGIES ARE MORE FROST HARDY THAN OTHERS

FREEZE TOLERANT: can take freezing temperatures (26° to 28°F)

Beets, bok choy, brussels sprouts
Cabbage, carrots, Chinese cabbage
Collard greens, endive, kale
Kohlrabi, peas, rutabaga
Spinach, turnips

FROST TOLERANT: can survive several hours at freezing temperatures (26° to 28°F)

Broccoli, cauliflower, celeriac
Garlic, lettuce, mustard
Onion, parsnip, radish, swiss chard

FROST TENDER: killed at a few minutes below 30° or 31-32° for 5-10 minutes

Beans, cantelope, corn
Cucumbers, eggplant, okra
Peppers, potatoes, sweet potatoes,
Summer squash, **tomatoes**
Watermelon, winter squash, zucchini

JEMEZ SPRINGS FROST DATES AND GROWING SEASON LENGTHS AVERAGE DATES

	Spring	Fall	Growing season
28°F freeze	26 April	21 October	179
32°F freeze	9 May	11 October	156

* Different values from talk given at library; those were probabilities. These are averages.

WHEN TO PLANT IS NOT JUST ABOUT FROST DATES

- Some plants need **warm soil** before they can grow well (tomatoes & peppers, squash & melons)
- Squash and melons will get squash bug infestations if planted too early (but they also need a long growing season)



SOIL TEMPERATURES FOR PLANTING

Minimum Soil Temperatures for Seed Sowing and Germination:

- 35°F: lettuce, onion, parsnip, spinach.
- 40°F: beet, broccoli, Brussels sprouts, cabbage, carrot, cauliflower, collards, Asian greens, Chinese cabbage, fava beans, kale, kohlrabi, mustard, arugula, radish, Swiss chard, turnip, pea, radish, rutabaga.
- 50°F: asparagus, celery, celeriac, corn, tomato.
- 60°F: bean, cucumber, eggplant, muskmelon, pepper, pumpkin, squash, watermelon.

Soil Temperature Needed for 70% Germination:

- 45°F: beets, lettuce, parsley, spinach.
- 50°F: broccoli, Brussels sprouts, cabbage, carrot, cauliflower, collards, Asian greens, Chinese cabbage, fava beans, kale, kohlrabi, mustard, arugula, radish, Swiss chard, turnip, pea, radish, rutabaga.
- 55°F: cabbage, corn, Swiss chard, tomatoes.
- 65°F: cucumbers, peppers.
- 70°F: beans, cantaloupe, melons, squash.
- 75°F: eggplant, okra, pumpkins.

Optimal Soil Temperature for near 100% germination:

- 65°F: parsnip.
- 70°F: spinach.
- 75°F: asparagus, lettuce, onion, parsley.
- 80°F: bean, carrot.
- 85°F: beet, cabbage, eggplant, pepper, radish, Swiss chard, tomato, turnip.
- 90°F: muskmelon.
- 95°F: corn, cucumber, pumpkin, squash, watermelon.

EXTEND THE SEASON: PROTECT FROM COLD & HEAT

COLD FRAME



RAISED BED WITH HOOPS

Note: to build a hinged top that's easy to access see: https://www.youtube.com/watch?v=ef_TS19TRQg



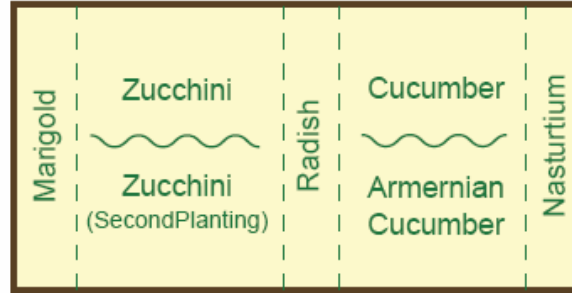
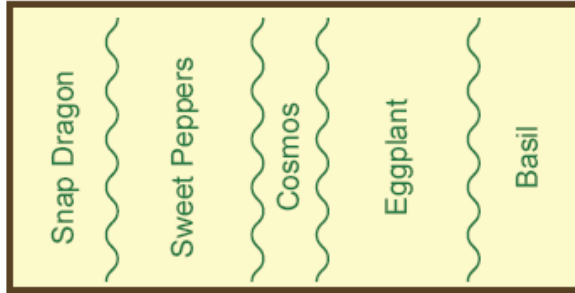
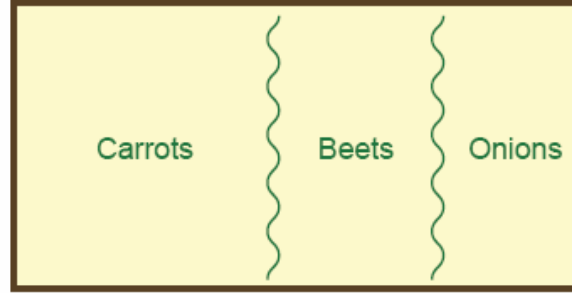
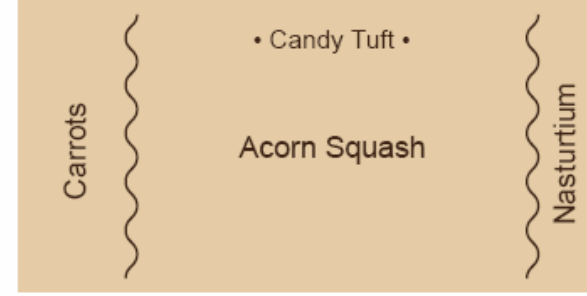
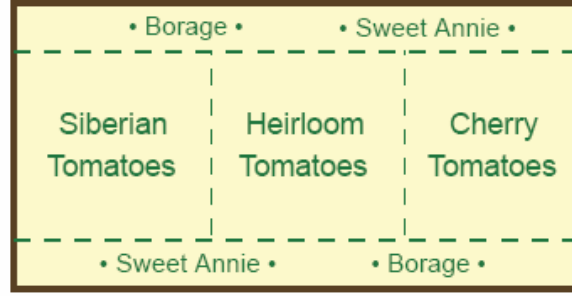
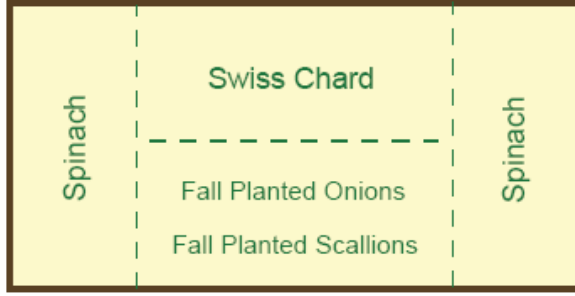
ROW COVERS

Companion planting:

- Intermixing different vegetables, herbs, and flowers.
- Encourages pollination, discourages pests and disease, and provide extra support and nutrients to some plants.
 - Example: "3 Sisters planting" beans, corn and squash
- Plant enemies: plants that **should not** be companions
 - E.g., tomatoes and cabbage family.
- See: <https://growincrazyacres.com/companion-planting-chart/>



EXAMPLE GARDEN PLAN WITH COMPANION PLANTS

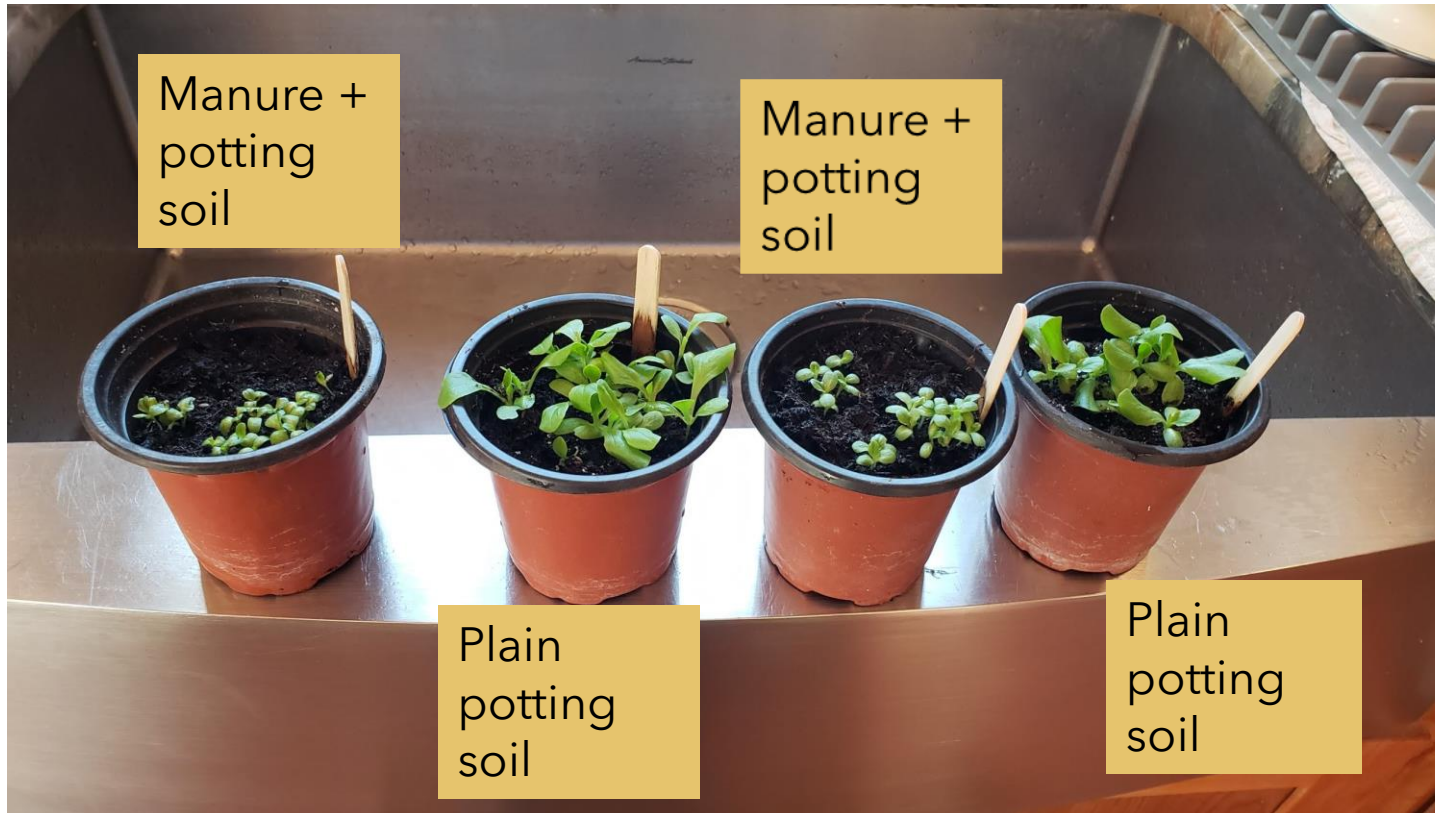


HELP YOUR ALKALINE, LOW-ORGANIC MATTER SOIL

- *Add compost & mulch*
- *Grow cover crops ("green manure")*
- *If leaves are chlorotic, decrease the pH by adding elemental sulphur*
- *Don't put wood ash on your garden*
- *Caution about applying manure: test & compost*



THE HEARTBREAK OF "WEED-FREE" MANURE. PERFORM THIS EXPERIMENT:



- Mix a little of the manure you want to test with some potting soil and put it in 2 pots
- Put plain potting soil in 2 pots
- Add some fast-germinating seeds like lettuce or beans
- Put under lights and water. As they grow, if the manure + soil seedlings are much smaller than plain soil, **DO NOT USE** this manure in your garden!



MISCELLANEOUS REMARKS

WATERING: STRATEGIZE TO MINIMIZE

- WATER ONLY WHERE NEEDED
- USE TIMERS AND WATER IN THE EARLY MORNINGS
- USE MOISTURE GAUGES - WATER WHEN SOIL IS AT ABOUT 40-50% CAPACITY
- MULCH WITH COMPOST, NEWSPAPERS, CARDBOARD
- CONSIDER USING SHADECLOTH TO REDUCE WATER STRESS



RAISE SEEDLINGS FROM SEED TO SAVE MONEY

- METAL SHELVES
- CHEAP LED LIGHTS
- A TIMER IS NICE



INEXPENSIVE WAYS TO RAISE YOUR OWN SEEDLINGS

- START IN SEEDLING CELL TRAYS; USE SEEDLING POTTING SOIL
- USE POPSICLE STICKS FOR MARKERS
- AFTER THEY GROW FIRST 2 "TRUE" LEAVES, RE-POT IN LARGER CONTAINER OR NEWSPAPER 'POT' USING REGULAR POTTING SOIL
- REUSE THE TRAYS AND POTS (WASH & STERILIZE EACH YEAR WITH BLEACH)



MAKE YOUR OWN NEWSPAPER SEEDLING POTS

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=YOTOYV9UKI8](https://www.youtube.com/watch?v=YOTOYV9UKI8)



MASTER GARDENING

[HTTPS://MASTERGARDENERS.NMSU.EDU/INDEX.HTML](https://mastergardeners.nmsu.edu/index.html)

WATCH THEIR CLASSES

The screenshot shows the website for the New Mexico State University Master Gardeners program. The header is dark red with the NMSU logo and navigation links. The main content area features a large heading for 'Extension Master Gardeners' and a photograph of a person working in a garden. Below the photo is introductory text and contact information for Lynda Garvin. A sidebar on the right contains a menu of links and a video player.

New Mexico State University
College of Agricultural, Consumer, and Environmental Sciences | ACES
Master Gardeners


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ACES Home Academics Research Extension & Outreach NM 4-H Alumni & Giving ACES Quick Links

NMSU > College of Agricultural, Consumer, and Environmental Sciences > Master Gardeners > Master Gardeners Home

Extension Master Gardeners



Are you interested in plants and gardening? Are you a life-long learner? Do you love to share what you're learning with others? The New Mexico Master Gardener Program has a place for you.


[Learn more](#) about the Extension Master Gardeners program.

If you are interested in becoming an Extension Master Gardener, contact your [Cooperative Extension Office](#) or an [Extension Master Gardeners Chapter](#) near you.

Lynda Garvin
State Master Gardener Program Manager
Email: lgarvin@nmsu.edu

- Master Gardeners Home
- Program Information
- County Chapters
- Report Volunteer Hours
- Resources ▾

Invest in the College



College of ACE... : ▶

ACES Calendar

KEEP LEARNING, ASKING QUESTIONS, AND EXPERIMENTING

State and County Extension

<https://extension.nmsu.edu/areas/garden.html>

<https://desertblooms.nmsu.edu/>

<https://extension.colostate.edu/topic-areas/yard-garden/>

Garden with the Masters

<https://sandovalmastergardeners.org/gardening-classes/gardening-with-the-masters-online/>

Facebook groups:

Northern NM Gardeners

Growing FOOD in and Around ALBUQUERQUE & Foraging Too

NMSU Extension Publications

Weeds

<https://pubs.nmsu.edu/circulars/CR698/>

Miscellaneous others:

<https://harvesttotable.com/vegetable-planting-and-soil-temperature/>

<https://growincrazyacres.com/companion-planting-chart/>

<https://sowtrueseed.com/blogs/monthly-garden-schedule-by-zone>

To build a hinged-top raised bed:

https://www.youtube.com/watch?v=ef_TS19TRQg

Newspaper pots:

<https://www.youtube.com/watch?v=YOTOyv9ukl8>



QUESTIONS?