Spring Vegetable Gardening

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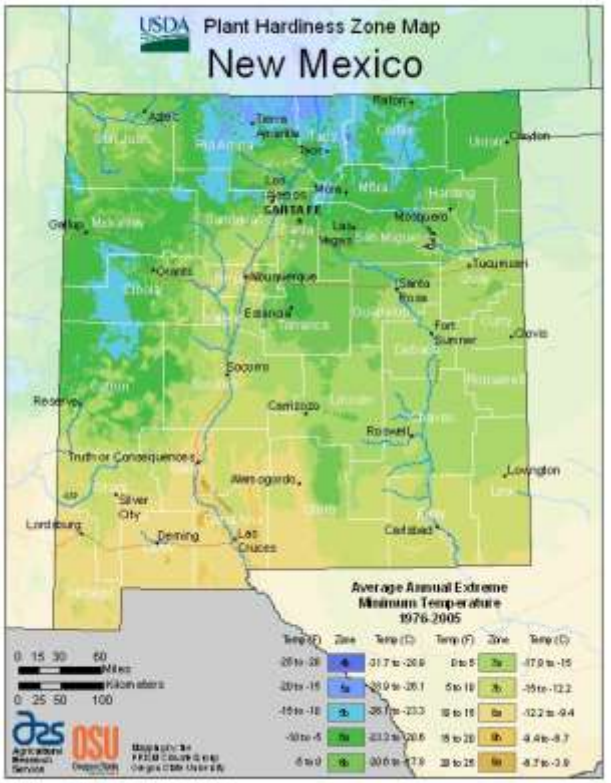
Growing Vegetables in Quay County

- USDA Hardiness Zone 7a or 6b (Zone 2 or 3)
- Length of the growing season
- Last frost / first frost dates

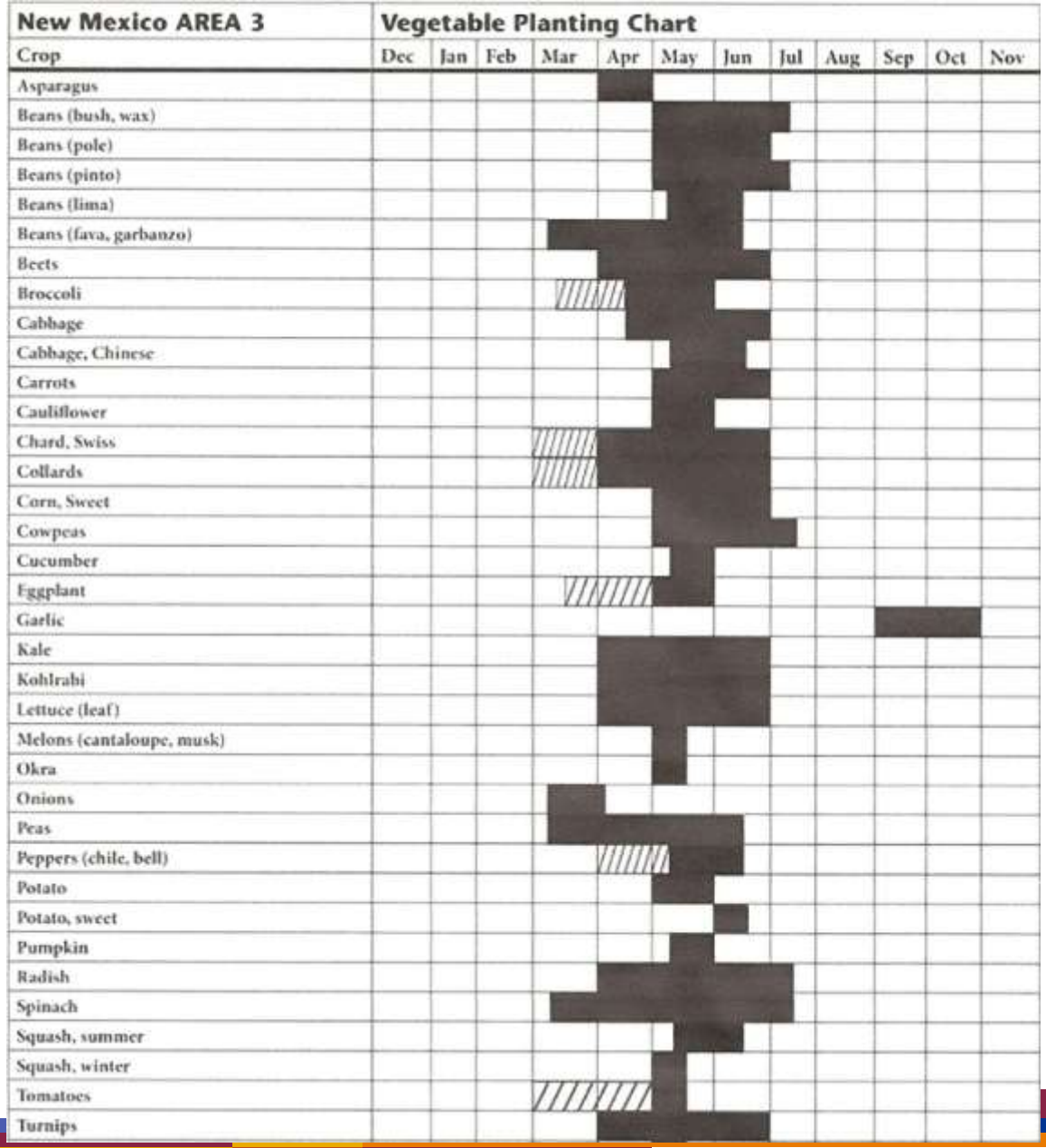


http://planthardiness.ars.usda.gov/PHZMWeb/

NM Number of Frost Free Days

- **Area 1**: more than 180 days (Las Cruces, Lordsburg, Hobbs)
- **Area 2**: less than 180, more than150 days (Albuquerque, Santa Fe, Roswell)
- **Area 3**: less than 150 days (Farmington, Los Alamos, Taos)

NM Area 3 Best Planting Windows



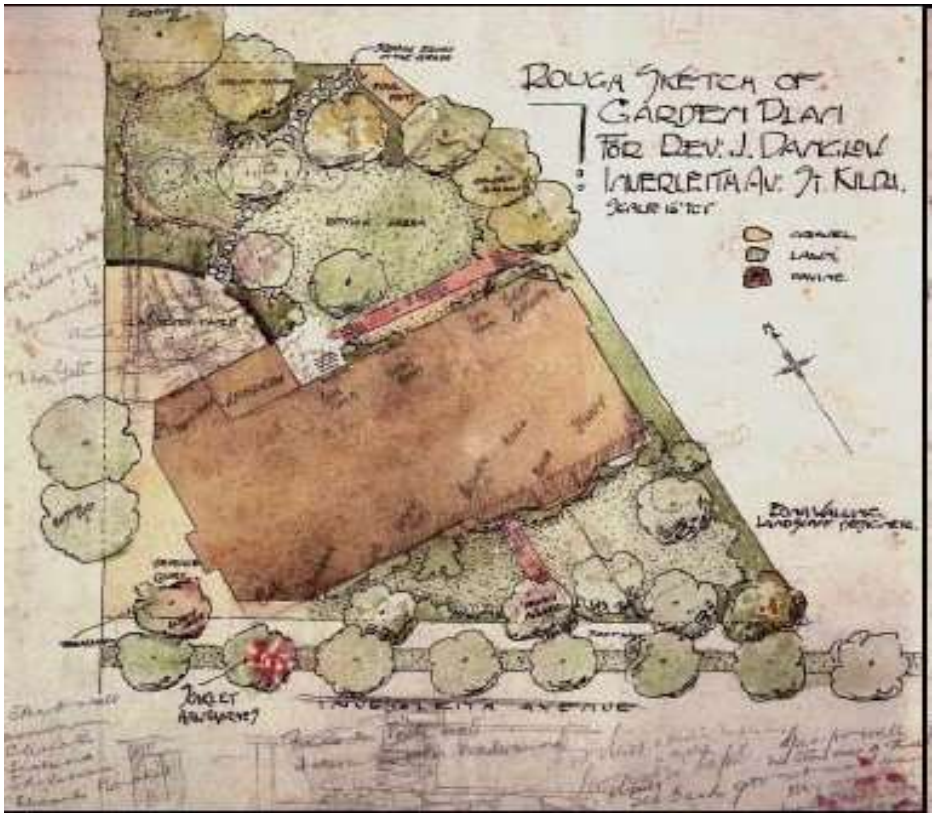
New Mexico AREA 3	Vegetable Planting Chart											
Crop	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Asparagus												
Beans (bush, wax)												
Beans (pole)												
Beans (pinto)												
Beans (lima)												
Beans (fava, garbanzo)												
Beets												
Broccoli												
Cabbage												
Cabbage, Chinese												
Carrots												
Cauliflower												
Chard, Swiss												
Collards												
Corn, Sweet												
Cowpeas												
Cucumber												
Eggplant												
Garlic												
Kale												
Kohlrabi												
Lettuce (leaf)												
Melons (cantaloupe, musk)												
Okra												
Onions												
Peas												
Peppers (chile, bell)												
Potato												
Potato, sweet												
Pumpkin												
Radish												
Spinach												
Squash, summer												
Squash, winter												
Tomatoes												
Turnips												

http://aces.nmsu.edu/pubs/_circulars/CR457B.pdf

Planning & Recordkeeping

- Placement
- Proximity to water
- Types of veggies (what do you like?)

- Keep a log book
  - Crop placement
  - Varietal results
  - General activities



Prepare Soil

- Best soil is deep, well drained, fertile soil that contains plenty of organic matter
- Soil can be improved with compost and manure
- Raised beds, with soil brought in, can be used short-term (or long-term)

Determining soil moisture using the wet ball method
Courtesy NRCS

Fertilization

- Essential elements derived from the soil
  N: Nitrogen
  P: Phosphorus 20-10-5
  K: Potassium
- But also,
  Calcium, Chlorine, Iron, Sodium, Zinc, Nickel, Silicon Magnesium, Sulfur, Manganese, Boron, Copper, Molybdenum

Fertilization Options

- Synthetic fertilizers
- Organic fertilizers
- Compost
- Composted manure
- Green manure

Planting

- Direct seeding
  - Easiest way to plant your garden
- Transplants
  - Used to obtain earlier maturity
  - If seed is expensive
  - Great way to get a jump on a short growing season

Water Properly to Improve Yields

- Best times
  - Evening
  - Early morning
- Scout
- How often?
  - After planting irrigate lightly every 2-3 days until germination
  - Once plants are established do not over or under water

Perennial Vegetable Crops

- Vegetables that may continue to produce for many years after establishment
  (Take extra care in placement)
  -Artichokes

  -Rhubarb

  -Asparagus

Warm vs. Cool Season Annual Crops

- Warm season crops include:
  - Squash, tomatoes, eggplant, okra, cucumber, beans, chile, bell peppers
- Cool season crops include:
  - Broccoli, carrots, spinach, lettuce, chard, kale, onions, beets, radishes

Know Your Plants

- Determinate: Bush-type.
  Tend to set fruit at same time and exhibit earlier maturity

- Indeterminate: Vining, pole-type.
  Tend to set fruit over prolonged period and have higher overall yields

Sweet Corn (*Zea mays*)

- Annual; member of grass family
- Plant sequentially every two weeks to prolong harvest
- Harvest when silks are brown and dry, and kernels are in milk stage

Sweet Corn

- Wind pollinated
  - poor pollination causes skips on cob
  - Plant in short, side-by-side rows
- Pollen source affects kernel quality

http://www.webgardenguide.com/admin/_files/newsannounce/Sweet_corn.jpg

Sweet Corn Cultivars

- ‘Merit’
- ‘Early Sunglow’
- ‘Hybrid Double Delicious’
- ‘Early Xtra-Sweet’
- ‘How Sweet It Is’

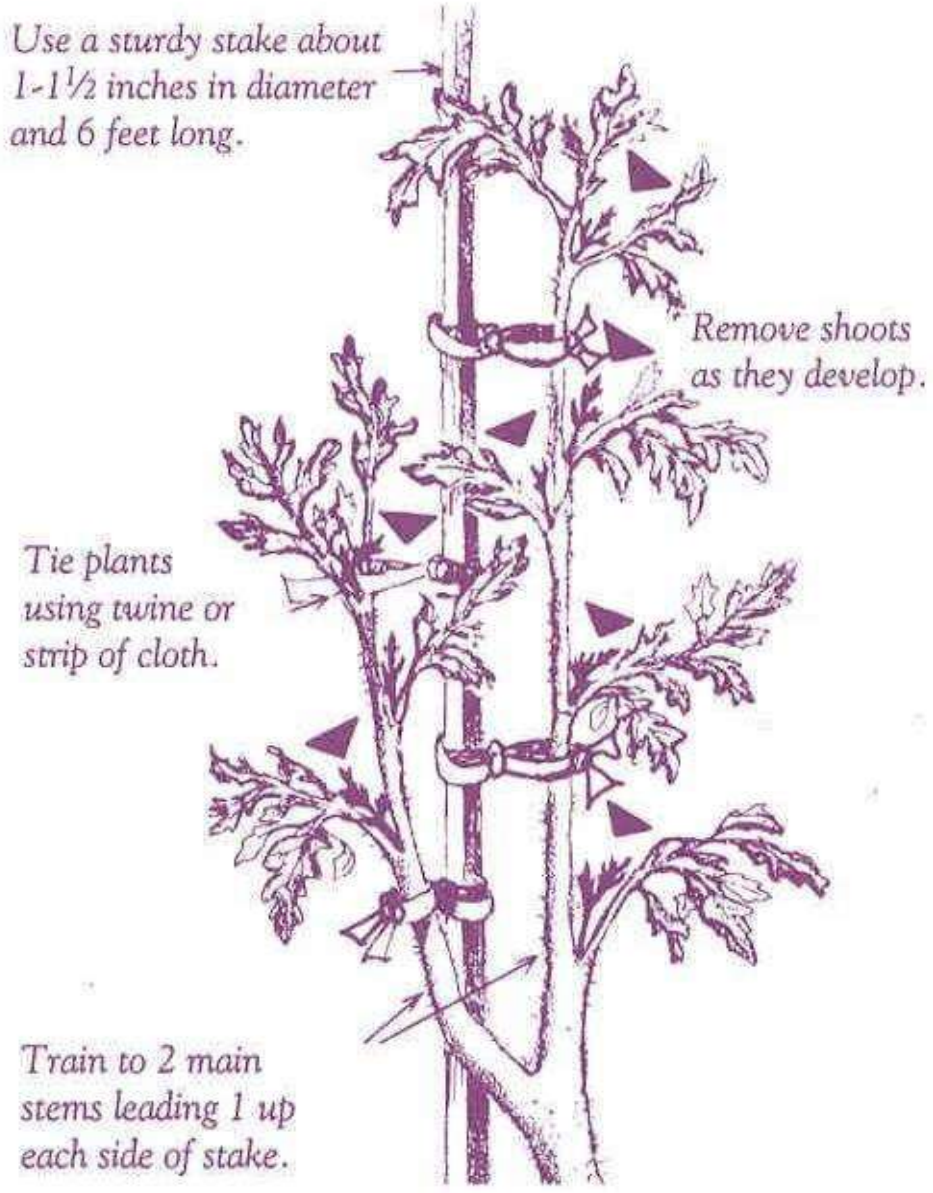
Solanaceous Crops

- Tomatoes, bell peppers, chile, eggplant, potatoes
- Grown as annuals

Tomatoes

- Most popular vegetable for home gardens
- Direct seed or transplant
- Self fertile (usually self-pollinated) flowers
- Bush-type (determinant) or vining (indeterminate) plants

“Trenching-in” long stemmed plants



Pruning and Staking

- Indeterminate cultivars
- Leave two main stems
- Remove suckers between leaves and main stem
- Remove suckers before they get 2 ½ inches long
- Remove late season flower buds

Disorders: Blossom End Rot

- Affects many vegetable & fruit crops
- Caused by stresses to the plants during fruit set (drought, heat)

Disorders: Splitting Fruit

- Once fruit reaches mature color epidermis cannot expand
- High water input will cause fruit to ‘split’
- Secondary fungal or bacterial pathogens infect ‘split’ fruit

Disorders: Poor Fruit Set

- Insect or disease pressure
- Temps < 50^{o} & > 90^{o}F will prevent pollination and cause blossom abortion
- Excessive nitrogen fertility will cause vigorous foliage but low fruit set (all leaves, no fruit)

Tomato Cultivars

- Plum and Small Types
- Beefsteak
- Paste
- Heirloom

Cucurbits

- Squash
- Pumpkins
- Gourds
- Cucumbers
- Melons

- Don’t transplant well
- Direct seeding is preferred

Squash Culture

- Warm season
- Herbaceous annual
- Types
  - Summer Squash: Harvested in immature state
  - Winter Squash: Hard rinds allow long storage
- Bush-type (determinant) or vining (indeterminate) plants

Cucurbit Pollination

- Most Cucurbit plants are monoecious
  - Separate female and male flowers are produced on same plant

- Can cross pollinate with other cultivars of the same species
- Bees essential for pollination

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

Allium Family (*Allioideae*)

- Onions
- Garlic
- Leeks

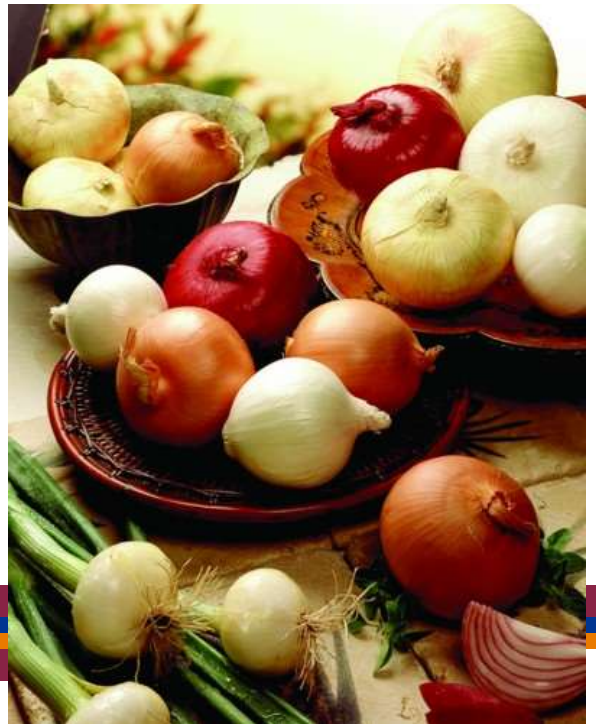
- Monocots

Onion / Garlic Culture

- Tolerant to frost or light freeze
- Shallow roots; water frequently
- Control weeds; *Alliums* don’t compete well

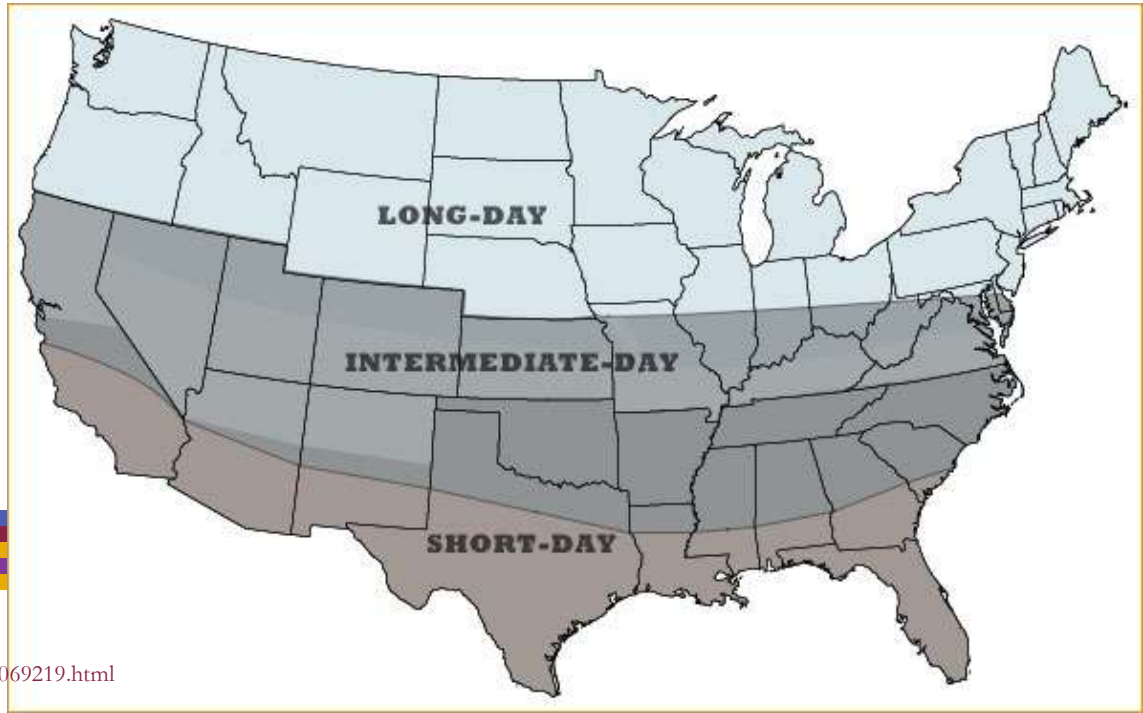
Onions (*Allium cepa*)

- Valued for their pungent, distinctive flavor
- Native to southern Asia
- Fleshy, basal plate main portion consumed
- Biennial grown as an annual crop



Onion Culture

- Day length critical to bulb formation:
  - Short-day: require 10-12 hours
  - Intermediate-day: require 12-14 hours
  - Long-day: require more than 14 hours



http://archive.constantcontact.com/fs069/1101447499422/archive/1110835069219.html

Onion Culture – Day Length

- Short-day: Bulbing begins early
  -If planted in the north, will produce small bulbs
- Intermediate-day: Most widely adapted
- Long-day: Includes most high solid, storage cultivars
  -If planted in the south, may not form bulbs

Onion Culture

- Harvest
  - May through August
  - Depends on variety
  - Seed vs. transplants
- Harvest when leaves begin to turn yellow and lodge
- Bolting may occur with cool spring temps
  -Plant resistant varieties

http://www.allotmentgirls.co.uk/files/images/onion.jpg

Sunflower Family (*Asteraceae*)

- Lettuce

Lettuce Types

- **Crisphead (var. capitata)**
  - Tight, heavy heads
  - Latest to mature
- **Butterhead (Bibb) (var. capitata)**
  - Small, loosely filled head
- **Looseleaf (var. crispa)**
  - Easiest to grow; earliest to mature
- **Romaine (Cos) (var. longifolia)**
  - Elongated heads
  - Matures later than butterhead and leaf

Lettuce Culture

- Plant in succession for prolonged harvest
- Temperatures above 70° F with long days cause lettuce to bolt
- High temperatures and excess maturity cause bitterness

Parsley Family (*Umbelliferae*)

- Carrots
- Celery
- Parsley

Carrots

Daucus carota var. *sativus*

- Family Apiaceae (Umbelliferae)
- Biennial, grown as an annual
- White, purple, yellow, orange, and red varieties

Carrot Culture

- Best growth between 59 to 65^{o}F
- Temperatures below 50^{o}F decrease color development and growth
- Prolonged high temperatures cause strong flavor and coarse roots

Carrot Culture

http://news.bbc.co.uk/2/hi/in_pictures/7725149.stm

- Heavy or rocky soil may prevent clean tap root development
- Carrot seedlings are salt sensitive; apply manure and fertilizer with care

Carrots (*Daucus carota* var. *sativus)*

- Somewhat tolerant to frost
- Mulch heavily before freeze
- Harvest before a hard freeze

/wp-content/uploads/2008/01/carrots.jp

Carrot Cultivars

- ‘Imperator’
- ‘Red Core Chantenay’
- ‘Danvers Half Long’
- ‘Nantes Coreless’

Goosefoot Family (*Chenopodiaceae*)

- Spinach
- Beets
- Chard

Spinach (*Spinacia oleracea)*

- Native to Iran
- Spina means “spiny”, Latin for prickly seed
- Hardy, cool-season annual

- High in vitamins A & C, calcium, iron, & potassium

Spinach Culture

- Tolerant to frost or light freeze
- Prefers growing temperatures between 55-65˚ F
- Tends to bolt and develop bitter flavor when maturing in hot weather
- Harvest older leaves to prolong harvest

Spinach Cultivars

- ‘America’
- ‘Winter Bloomsdale’ (Savoy)
- ‘Melody’ (Savoy)
- ‘Longstanding’
- ‘Hybrid Tyee’
- ‘Hybrid Avon’ (Savoy)
- ‘Giant Nobel’

Mustard Family (*Cruciferae*)

Also known as brassica, cruciferous or cole crops

- Broccoli
- Cabbage
- Cauliflower
- Collards
- Kale
- Turnips
- Radish
- Mustard greens

Broccoli (*Brassica oleracea* var *italica)*

- Cool season annual
- Tolerant to frost or light freeze
- Grown for the edible, immature flower head
- Relatively tolerant to environmental stress
- Best quality when planted to mature in cool weather

Broccoli Culture

- Temperatures below 40˚ F may cause chilling injury
- Harvest when heads are firm and florets haven't begun to open
- Button heads due to temperature extremes or nitrogen deficiency

Broccoli Cultivars

- ‘Bonanza Hybrid’
- ‘Green Goliath’
- ‘Green Comet Hybrid’
- ‘Emperior’
- ‘Green Valient’
- ‘Premium Crop’
- ‘Hybrid Packman’

General Strategies for Gardeners

- Vigilance: Always stay on top of ‘current events’ in your garden
- Provide proper nutrition
- Use caution with pesticides & herbicides
- Use high quality seed
- Use adapted varieties
- Plant at the correct time
- Harvest at the correct time

Important Sources of Information

Growing zones, recommended crop varieties, and planting and harvesting information for home vegetable gardens in New Mexico: http://aces.nmsu.edu/pubs/_circulars/circ457B.pdf

Or, for a complete list: http://aces.nmsu.edu/pubs/_h/

Thank you!

Questions?

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