

Planning and Growing a Cool Season Garden

Lee Miller and Renee Kee

UCCE Master Gardeners

**This is California- Where we
can garden year round.**

We are so fortunate!



Who are the cool season vegetables?

Onions

Garlic

Peas

Broccoli

Cauliflower

Collards

Cabbages

Kale

Chard

Spinach

Brussels Spouts

Asparagus

Who are the cool season vegetables?

Turnips

Rutabagas

Beets

Lettuce/greens

Carrots

Cardoon

Artichokes

Bok Choi

Parsnips

Fava Beans

Radish

Celery

What varieties should I plant?

- What do you and your family like to eat?
- Do they taste good?
- What varieties do well here?
- Use varieties with varying maturity dates to provide for continued harvest. Early, midseason and late.

Where to Plant?

- **Full sun.**
- **Accessible to Irrigation.**
- **Rotate crops to reduce pest and disease problems**

Brassica oleracea- wild cabbage

- All cabbages, broccoli, brussels sprouts, collards, cauliflower, kale and kohlrabi are variants of this single species demonstrating what selection and evolution in the hands of humans can do.

July 4th is time for:

- ❖ Cold beer and Barbeque
- ❖ Patriotic celebrations
- ❖ Fireworks
- ❖ Planting Brassica seeds for the fall garden.

So... Plan Ahead

- **Start your brussel sprouts , broccoli, cauliflower, cabbage seeds- July 4th or thereabouts. Brussel sprouts can be planted in mid to late June.**
- **Kale, Kohlrabi, Collards and lettuce can be either direct seeded or started in flats in late August.**
- **Start onion seeds in flats about mid-August.**

Use flats with compost or seed starting mix for starting seedlings.



For seed starting use finely sifted compost.



Use a deep flat for Brassicas
give roots some room.



Buying transplants from a nursery.

➤ Cons:

- Less choice in varieties and size.
- Fewer plants for the money, but maybe you only want a few.

➤ Pros:

- Less time invested in seeds, watering, monitoring, pest control.

Transplant time is:

- About 8 weeks after seeding.
- Around September 4th.

Use a planting guide

- Master Gardener handbook.
- Online planting guides.
- Lockhart Seeds has one based on UCCE.
- Seed catalogues and seed packets.
- Planting guide by Robert Norris.

Available here and now.

Where to plant in the garden?

- Replace harvested winter and summer crops --Onions and garlic, sweet peas, peas, corn, beans, melons, zucchini, strawberries with new winter plantings.
- The soil is usually still friable and easily worked for the new crop.

Soil Preparation

- Hand digging
 - Apply compost then dig it in.



Soil Preparation

- **Rototilling**
 - **Apply compost first, then rototill.**



Brassicas like rich soil

- Use lots of compost, or well rotted, aged manure for all the Brassicas.
- Work it into the soil before planting and mulch with compost after planting.



Healthy soil=Healthy Plants
=Healthier people... so feed
the soil and it will feed you.

Drip Irrigation works well with Brassicas.

- Plant broccoli, cabbage, brussel sprouts and cauliflower about 15-18 inches apart within the row.
- Set drip emitters spaced as for the above in poly-pipe for each plant.
- Use the same set-up each year.

Drip Irrigation



Use timers for auto watering



Shading in the garden

- Temporary shade is good for recently transplanted plants or for seedlings.
- Use shade cloth, shutters, shingles, burlap sack cloth or row covers.



Photo courtesy of Avant Gardening

Fall Cabbage

- **Select varieties with differing maturity dates to stagger harvest.**
 - **Transplant from flats-late August, early Sept.**
 - **Brassicas are Biennials- Must grow and harvest before spring bolting, i.e., going to seed.**
- **Spacing 15-18” in row; 24 “ between rows.**
- **Pests: imported cabbage worm, loopers, aphids.**

Cabbage Varieties

- **Early cabbage <100 days**
 - **Early Jersey Wakefield, 63 d.**
 - **Copenhagen Market, 66d**
 - **Golden Acre, 65 d.**
- **Red varieties**
 - **Red Dynasty, 78 d.**
 - **Red Acre, 76 d.**
 - **Ruby King-70 d.**



Cabbage Varieties

- **Late Cabbage >100 days**
 - **Danish Ballhead, 110 d.**
 - **Late Flat Dutch , 100 d.**

Brussels (Brussel) Sprouts

- **Varieties- Jade Cross hybrid, Bubbles, Vancouver, Tasty nuggets.**
 - Transplant from flats-late August, early Sept.
 - They are Biennials- Must grow and harvest before spring bolting.
- **Spacing 12-18” in row; 24 “ between rows.**
- **Pests/problems: imported cabbage worm, loopers, aphids.**

For Brussels Sprouts-variety matters

- ‘Long Island Improved’ is not a good variety for the Central Valley.
- Stay with those that work.

Broccoli

□ Early Season

- Early Dividend, F1, 45 d.
- Packman, F1, 55 d. Widely adapted.
- Premium Crop, F1, 58 d. 1975 AAS winner.
- Broccoli Green Sprouting Calabrese, 60 d, side shoots for 2-3 months.

Broccoli

□ Midseason

- Diplomat , F1, 68d. Territorial Seeds
- Marathon, F1, 68 d. Lockhart Seeds
- Waltham 29, 74 d. Open Pollinated,
- Arcadia, F1, 63 d. Johnny's Seeds
- Belstar, F1, 66 d. Territorial Seeds

Broccoli is ready



Cauliflower

- **Varieties:**
 - **Snow crown, 53 d.**
 - **Early Snowball A, 55 d.**
 - **Snowball Y Improved, 80 d.**
- **It is best to plant a self-blanching variety; i.e., leaves cover the head and keep it white.**

Brassica pests

- Imported Cabbage Worm-
 - Butterfly is a daytime visitor.
 - The caterpillar does the damage to all brassicas.



Imported Cabbage Worm damage



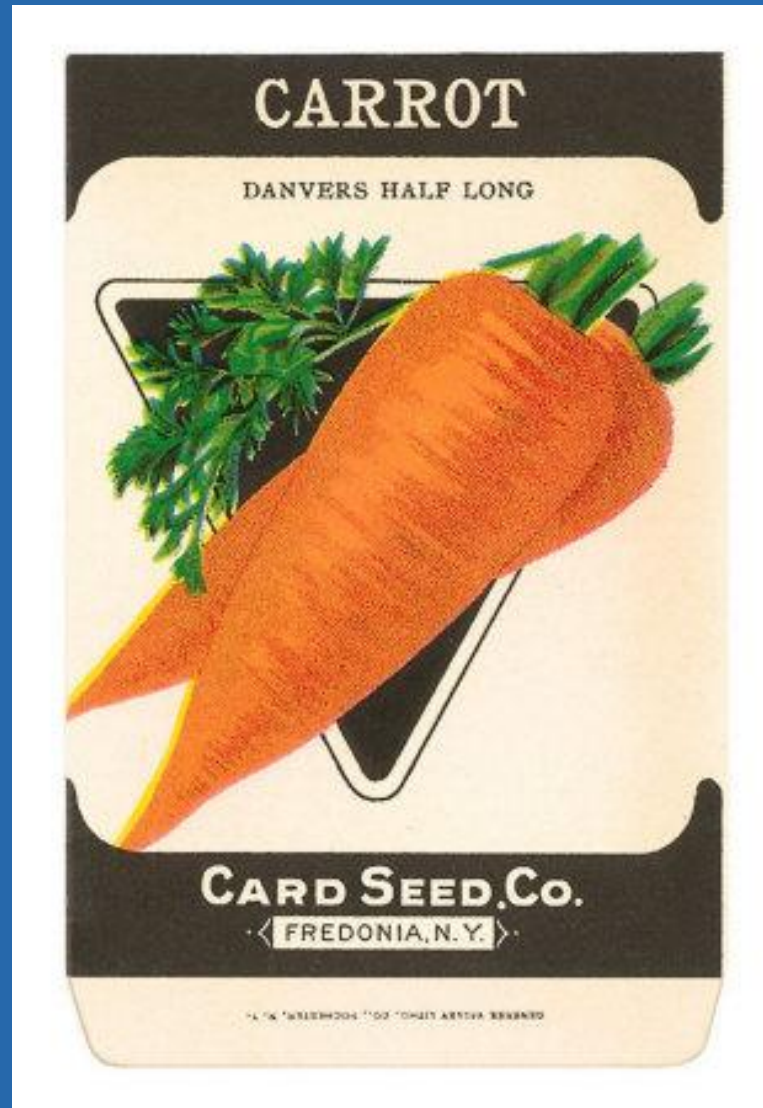
Cabbage Looper



Control of cabbage loopers and worms

- ❑ Use *Bacillus thuringiensis* to control these caterpillars. Commercially - Dipel or other products.
- ❑ If only a few imported cabbage butterflies are present-use a butterfly net to catch them. It is great sport!

Carrots



Carrots can be difficult to germinate

- Carrots grow best in cool spring and fall conditions-not summer.
- Use a board or burlap cover to keep the sun from baking the soil and the seeds. Remove upon germination and seedling emergence.

Burlap mulch for carrot seeds



Best Condition for carrots according to the World Carrot Museum

- “They love light, stone free, well drained, fertile soils with plenty of well rotted organic matter in them. Rich sandy peaty soils are perfect in providing the best conditions for the carrot roots to penetrate deeply and to swell.”

Carrots

- ❑ Shorter carrots for heavy soils
 - Red-cored Chantenay, Short 'n Sweet, Lady Finger, Amsterdam, minicor, Nantes, Danvers half-long.
- ❑ Longer carrots for lighter soils.
 - Imperator, Danvers,

Weeding /Thinning Carrots

- Tedious is the best description.
- Best to plant in 3 or 4 rows -4 inches apart, so that you can use a cultivating tool between rows.
- Carrots also need thinning to about 1.5 to 2 inches apart within the row.

Onions

- Use fresh onion seeds
- Start onions in flats in mid-August.
- Transplant onions in October.
- Or purchase onion sets from a nursery- sometimes not available until November.

Seed Longevity*

- **1 year** - Sweet corn, **onion**, parsnip, okra, parsley
- **2 years** - Beet, pepper, leek
- **3 years** - Asparagus, bean, carrot, celery, lettuce, pea, spinach, tomato
- **4 years** - Cabbage, cauliflower, Brussels sprouts, Swiss chard, kale, squash, pumpkin, radish, turnip, rutabaga
- **5 years** - Cucumber, endive, muskmelon, watermelon

*Table from Victory Seed Company

Onion seedlings



Planting Onion transplants

- Use paper mulch or 3 layers of newspaper as a mulch to suppress weeds.
- Plant through the paper by punching holes.
- Space plants 6 inches apart.
- Provide drip irrigation. T-tape or Emitters at 8 inches is ideal.

Cut back the tops on onions
before planting.



Planting through paper with a dibble



Later....



Onions

- Stockton Red



Onions

- Stockton Yellow



Garlic

- ❑ Plant in early October
- ❑ Plant cloves 1 inch deep through mulch paper or 3-4 layers of newspapers to suppress weeds.
- ❑ Space about 4 inches apart in row.
- ❑ Provide drip irrigation.



Genetically many are similar

- Hundreds of named species, that vary in character by where they are grown.
- Genetically they may be the same variety.

Garlic types

- Hardneck- *Allium sativum ssp ophioscorodon*. Have a stiff flowering stalk and 5-10 large cloves.
- Softneck- *Allium sativum ssp sativum*. Rarely produces a flower stalk, with 6-18 cloves, better for braiding. Less cold tolerant-works in CA, longer storage than hardneck.
- Silverskins are a subset of softneck. White skin, easiest to braid. Long storage

Garlic cultivars

- Kazakhstan Pink
- Spanish Rojas
- Lorz Italian
- Chesnok Red
- California Early White
- California Late White
- Inchelium Red



When to plant peas?

- Peas require a soil temperature above 50° F. Optimum is 65-70° F
- Peas can be planted in late October.
- Peas can be started in the greenhouse in late Jan. or early Feb. and transplanted to the garden in late Feb-early March.
- Peas do not do well after spring temperatures reach above 80° F.

Peas

- Pre-germination saves seed and time.
- Soak seeds for 2 nights and then plant about 2 inches deep, ASAP before roots tangle.



Snow Pea Cultivars

Mammoth Melting Sugar

- Need trellising

Oregon Sugar Pod II

- Short vine- no-trellis needed. Productive.

Oregon Giant Pod

- Large pod, sweet and crispy for mild climates.

Snow peas



Tall Pea Cultivars

- Alderman
- Freezonia (AAS winner)
- Green Arrow
- Maestro

Tall Peas will need trellising

- Cement reinforcing wire or cattle fencing.
- Old nets- gill nets, volley ball nets.
- Sticks, stakes, commercial netting
- Other?

Dwarf vine peas require no trellis

- Little Marvel
- Progress No 9 or Laxton's Progress.
- Greater Progress

Edible Pod or Snap Peas

- Sugar Ann (AAS winner)
- Sweet Snap (semi-dwarf)
- Sugar Snap (AAS winner)
- Super Sugar Mel
- Sugar Daddy (stringless, dwarf)
- Sugar Rae (dwarf)

Beets

- Direct seed – ½ inch deep, 1 inch apart in late August or early September.
- Selectively thin to about 4 – 6 inches
- Choice of cultivar-color and shape
 - Detroit Dark Red , 59d. red variety.
 - Burpee's Golden, 55d. Yellow
 - Chioggia, 54d. Heirloom, red and white rings. Pronounced 'kee-oh-gee-ya'

Chioggia Beet



Swiss Chard - cultivars

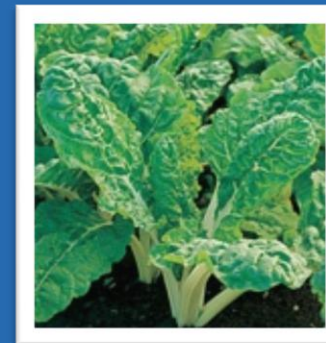
Rhubarb chard



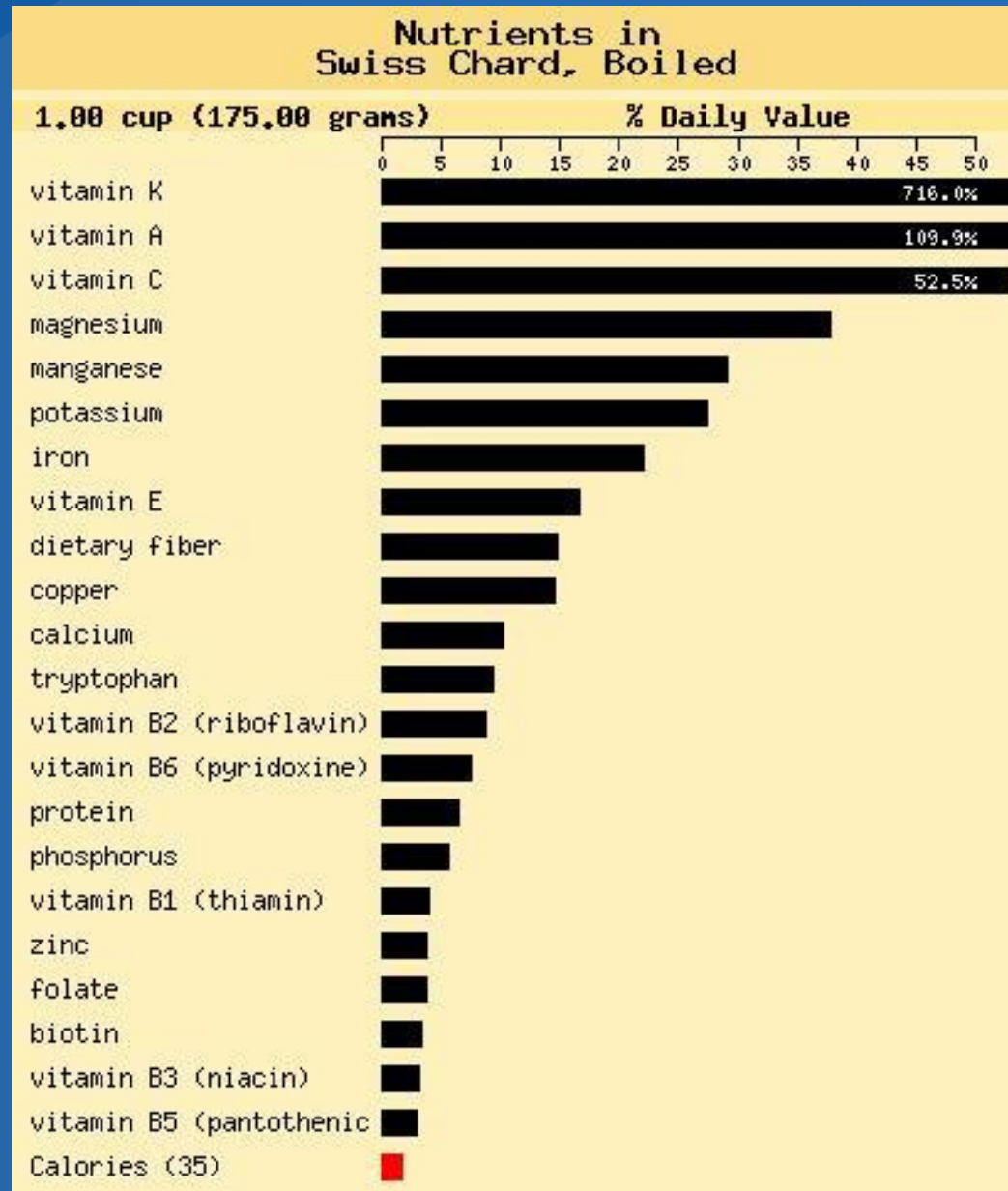
Bright Lights



Fordhook Giant



Swiss Chard is Dean's list in nutrition



Chard seed saving is easy-biennial



Chard can be a snail and slug refuge

- Monitor and trap or bait accordingly.



Kale

- Red Russian
- Dwarf Blue-Curled Scotch
- Plant 3 seeds close together $\frac{1}{2}$ inch deep, every 12 inches.
- Pinch out extras.



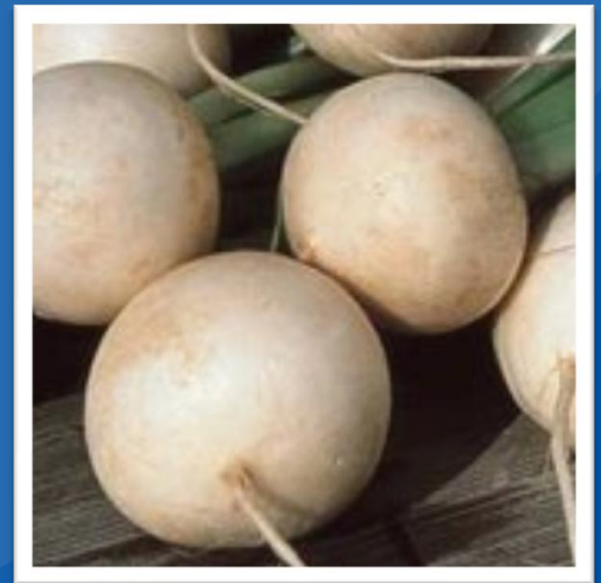
Kohlrabi

- Early White Vienna.
- Purple Vienna.
- Plant in late August-
direct seed $\frac{1}{2}$ inch
deep, 8 inches
apart.



Turnips

- Purple Top White Globe-57d
- Turnip Hakurei F1, 38 d
- Tokyo Cross F1 hybrid-35 d --greens only
- Seven Top –greens only



Rutabagas

- American Purple Top, 80-100 d.
- Cross between a turnip and a cabbage.



Lettuce (*Lactuca sativa*)



Why Grow lettuce?

- Many more varieties available as seeds than in the store as product.
- Home grown lettuce is fresher, tastier.
- Grow local and reduce carbon footprint.
- But....you do have to grow it, wash it, spin it dry, and store it properly.

How to plant lettuce:

- Seeds germinate at temperatures around 70° F.
- Seeds need some light to germinate. Plant about ¼ inch deep.
- August/September is hot which can trigger dormancy in the seeds.
- Shade the lettuce or plant in flats out of the sun to cool the soil, retain moisture and germinate the seeds.
- Transplant spacing about 8 inches apart.

Fall Planted Lettuce:

- Benefits from afternoon shade
- Even soil moisture
- Needs to mature when weather is cool.
- Plant more every couple of weeks for continuous harvest.

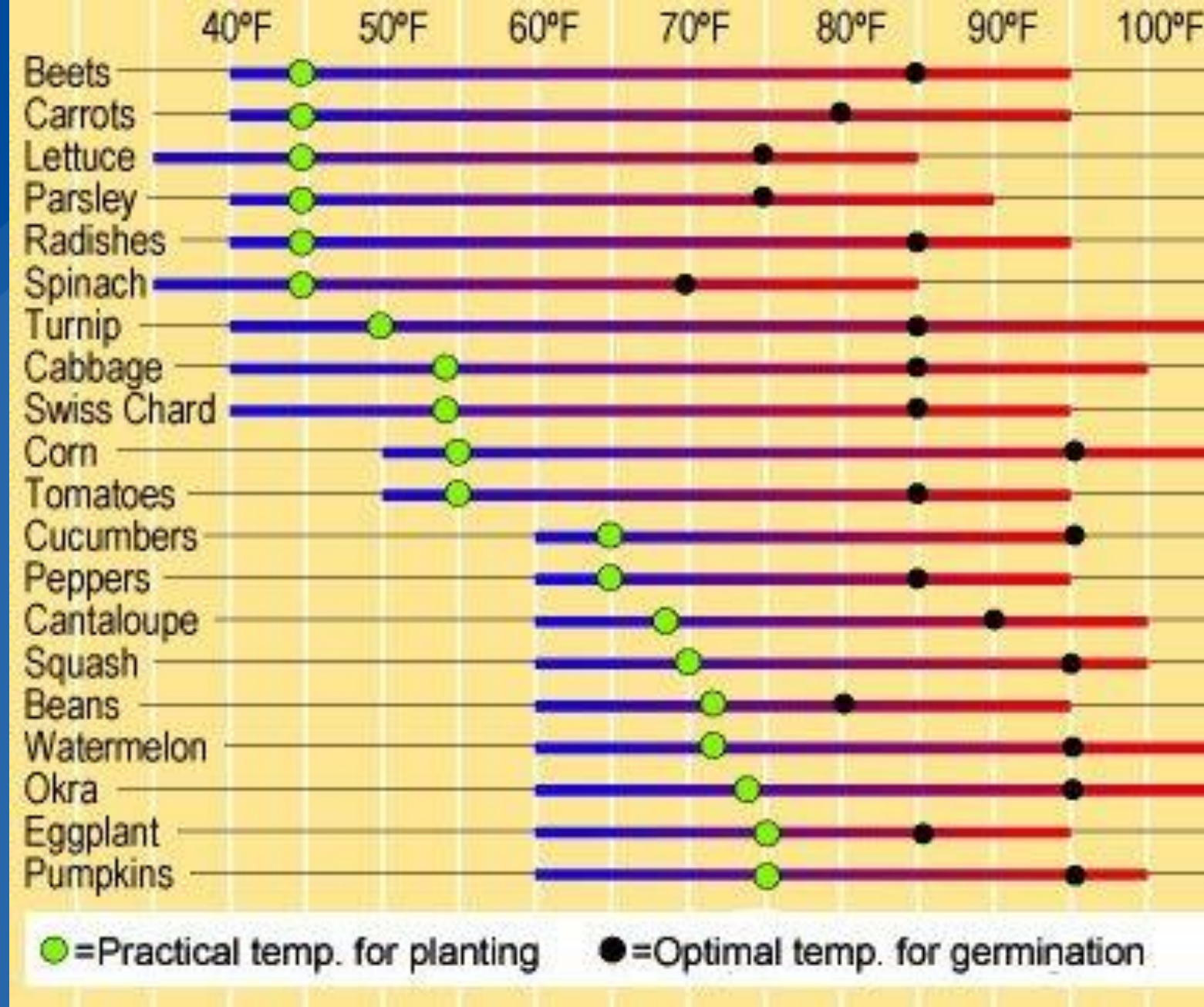


Table from Gardener's Supply Company



There is a great variety in lettuce

- Cos or Romaine
- Loose Leaf
- Butterhead
- Crisphead (Iceberg) forget it!
Hard to grow and the nutrition
is zilch.

Romaine or Cos

Nutritious, upright plant

- Varieties
 - Forellenschluss
 - Red Leprechaun
 - Parris Island
 - Valmaine
 - Rouge d'Hiver



Butterhead

Loose heading with a buttery soft leaf

- **Merveille des Quatre Saisons**
- **Esmeralda**
- **Buttercrunch (AAS)**
- **Yugoslavian Red**
- **Bronze Mignonette**



Loose Leaf

- Salad Bowl-AAS, heat tolerant, 50 d.
- Red Sails-AAS, 45 d.
- Red Velvet, 55 d.
- Oak Leaf, 40 d.
- Ruby AAS, 50-60 d.
- Bronze Arrowhead-AAS, 50d.
- Black-Seeded Simpson, 58d.
- Prizehead, 55d



Spinach

- Teton- 45-50 d. Slow to bolt.
- Tyee- resistant to downy mildew, slow to bolt. 45d.
- Melody hybrid, 45-50d. Vigorous, good holding ability, d.
- Olympia hybrid, 45d. Slow to bolt. Easy to grow.
- Bloomsdale, 45d.



How to grow spinach

- High nitrogen needs-compost rich soil.
- Even moisture.
- Afternoon shade or partial shade is good.
- Plant in mid-September.
- Warm temperature or drought can cause bolting.

Parsnips

- Use fresh seeds- even then germination is poor- sow extras.
- Germination may take 20d.
- Plant in late spring- 1/2 inch deep.
- Cold temperatures improve flavor.
- Varieties: Hollow Crown, Harris Model

Can I Save Money?

- If you grew a 20' x 30' garden, it would yield 350 pounds of vegetables.
- If you went and purchased all those 350 pounds of vegetables in a grocery store, you'd pay more than \$600 dollars.
- This garden costs about \$70 to plant. So you're saving money and getting great food to eat.
 - *Adapted from: Vegetable Gardening for Dummies (Wiley Publisher, 2009).*

San Joaquin County Master Gardeners

209-953-6112

Email: mgsanjoaquin@ucdavis.edu

