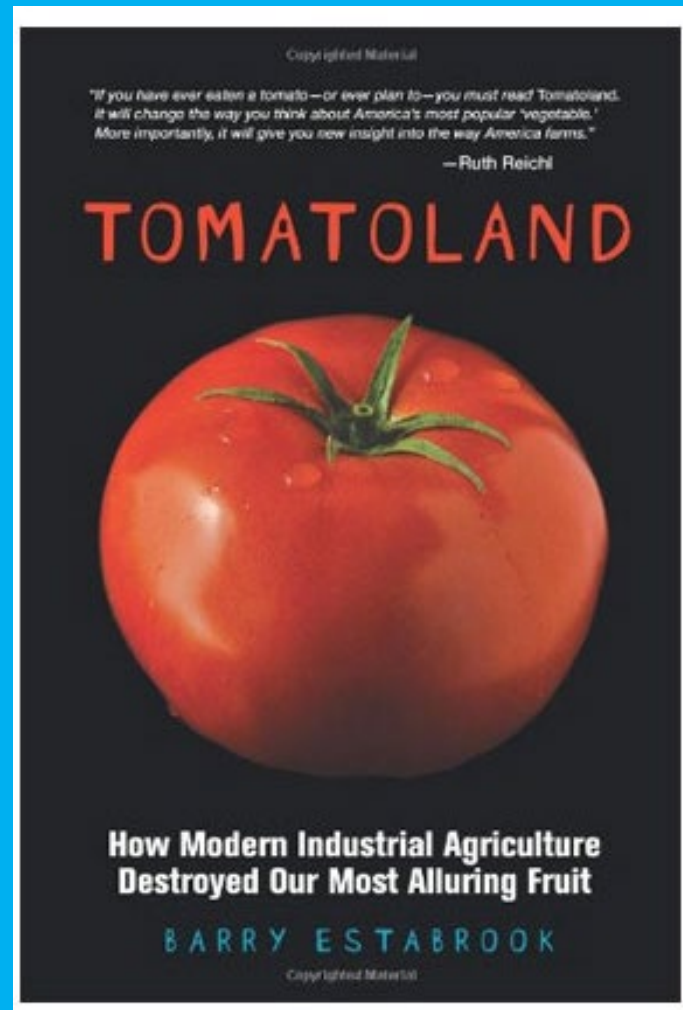
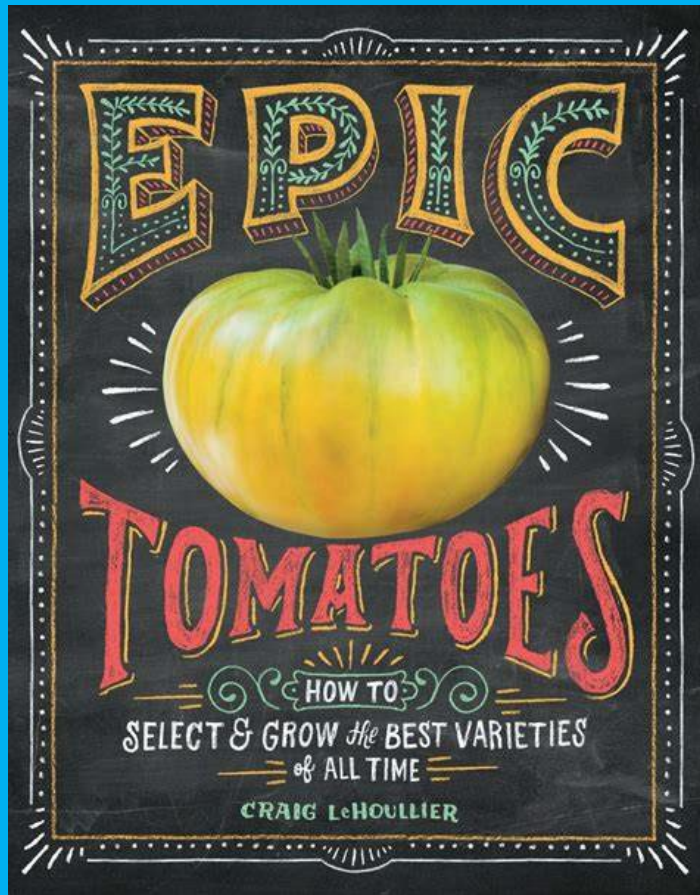


All About Tomatoes “The King Of The Garden”



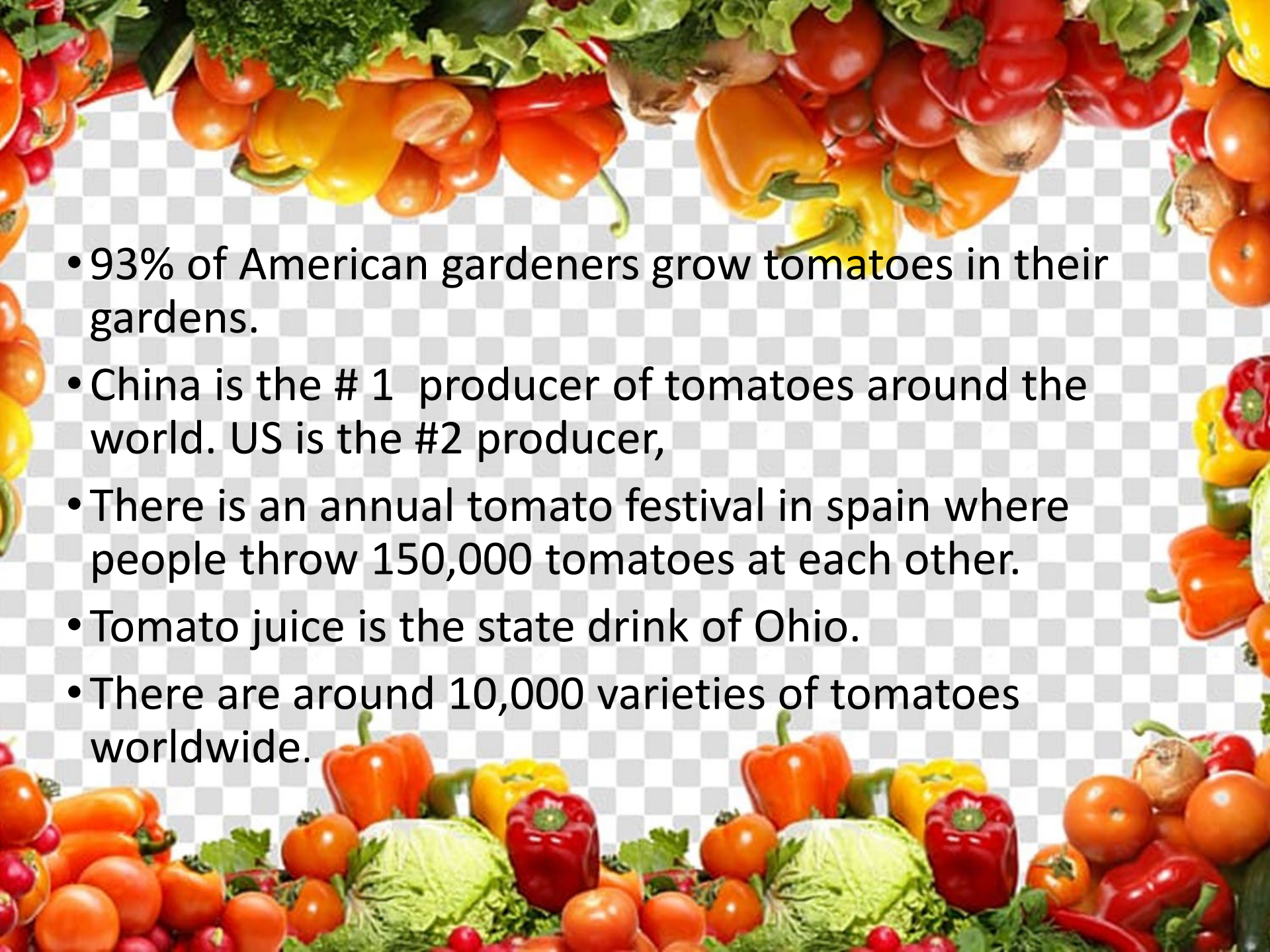
Unity  Gardens





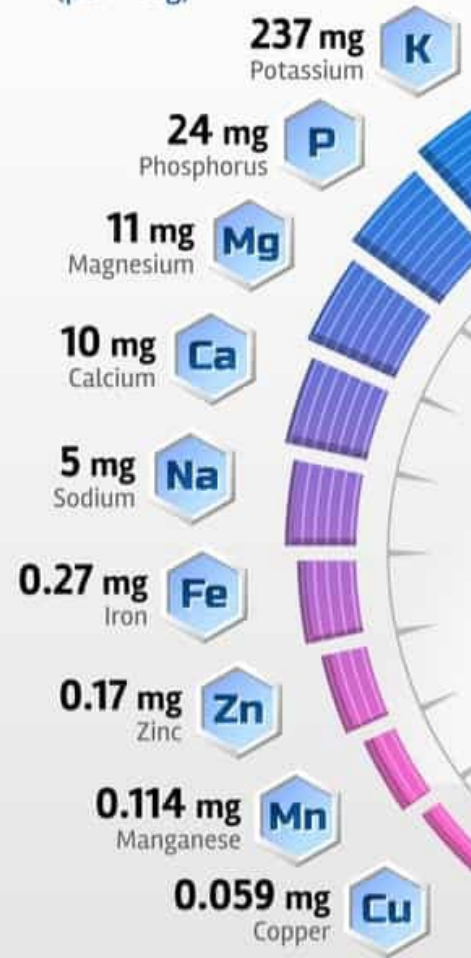
The average person eats
22 to 24 pounds of year!



- 
- 93% of American gardeners grow tomatoes in their gardens.
 - China is the # 1 producer of tomatoes around the world. US is the #2 producer,
 - There is an annual tomato festival in Spain where people throw 150,000 tomatoes at each other.
 - Tomato juice is the state drink of Ohio.
 - There are around 10,000 varieties of tomatoes worldwide.

MINERALS

(per 100g)



ENERGY
(per 100g)



18 kcal



VITAMINS

(per 100g)



CARBOHYDRATES
3.89 g

FAT
0.2 g

PROTEIN
0.88 g

Know your Tomato Plant

Determinate vs Indeterminate

Determinate Tomatoes:

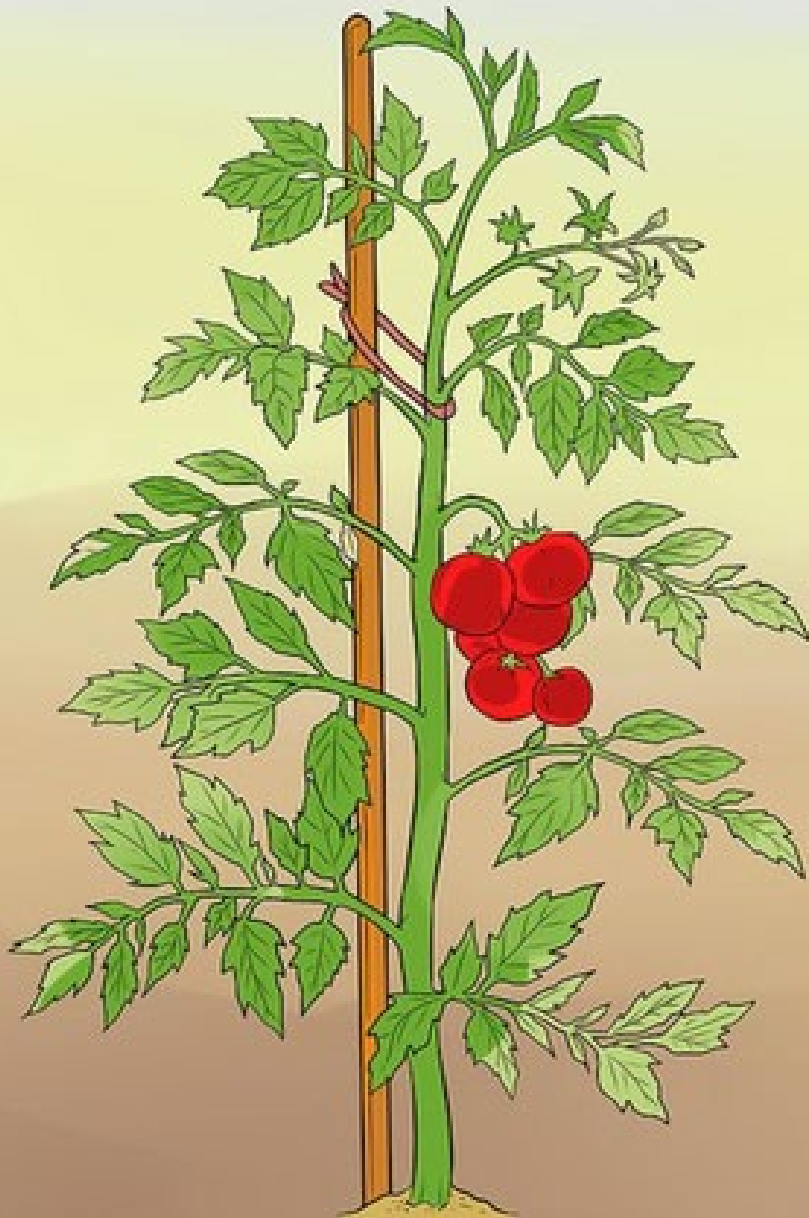
AKA: Bush, Patio

- In general do not need much if any support
- They put out fruit for a short time, about 2 weeks.
- Great for containers
- Do not need pruning

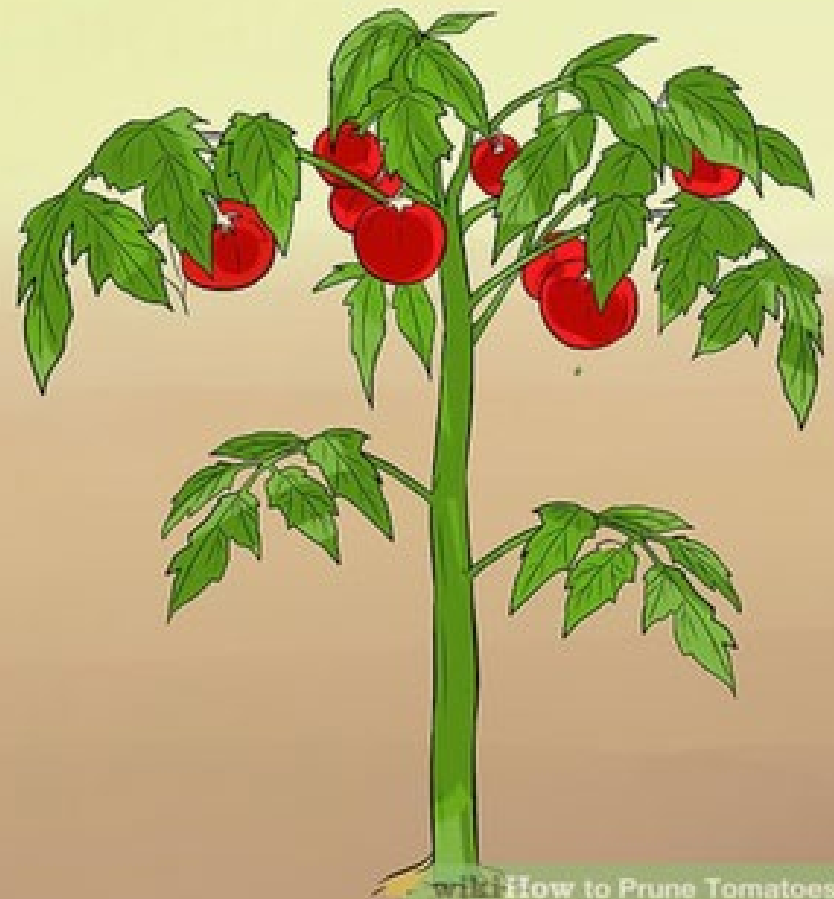
Indeterminate Tomatoes

- Will grow all season until frost kills them.
- Need support, and can easily grow to 8' or more tall.
- Not good for containers
- Need pruning for best production.

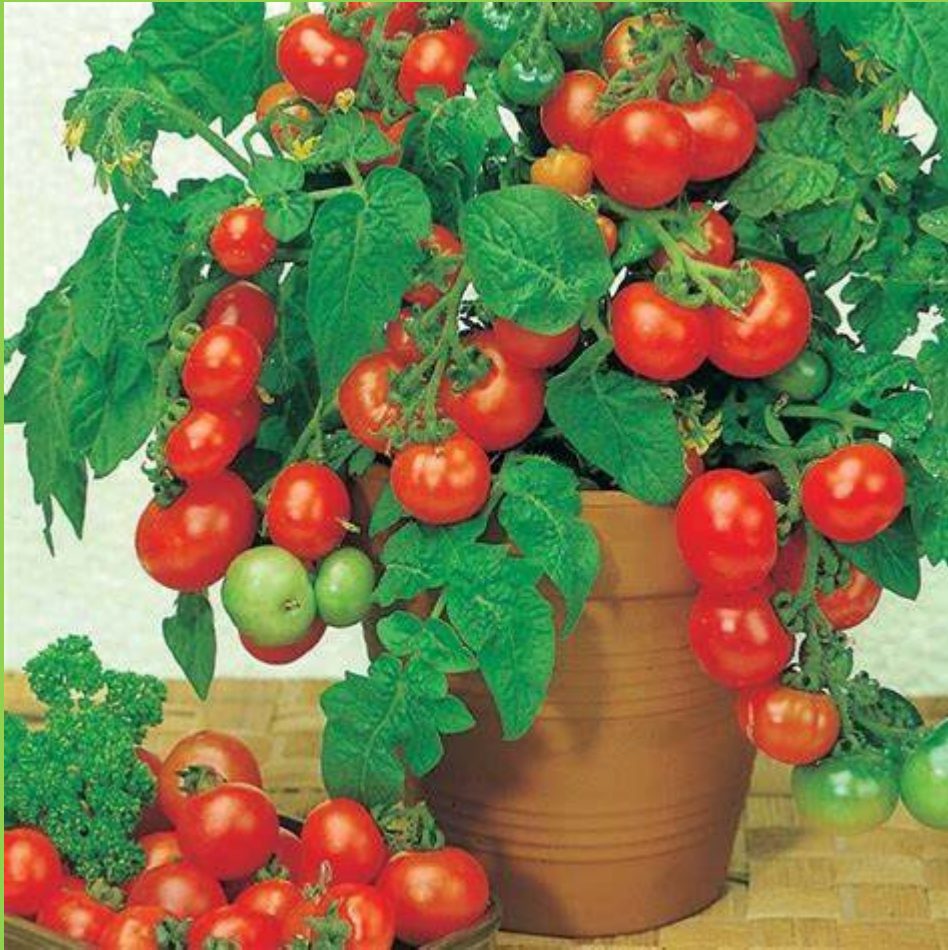
indeterminate

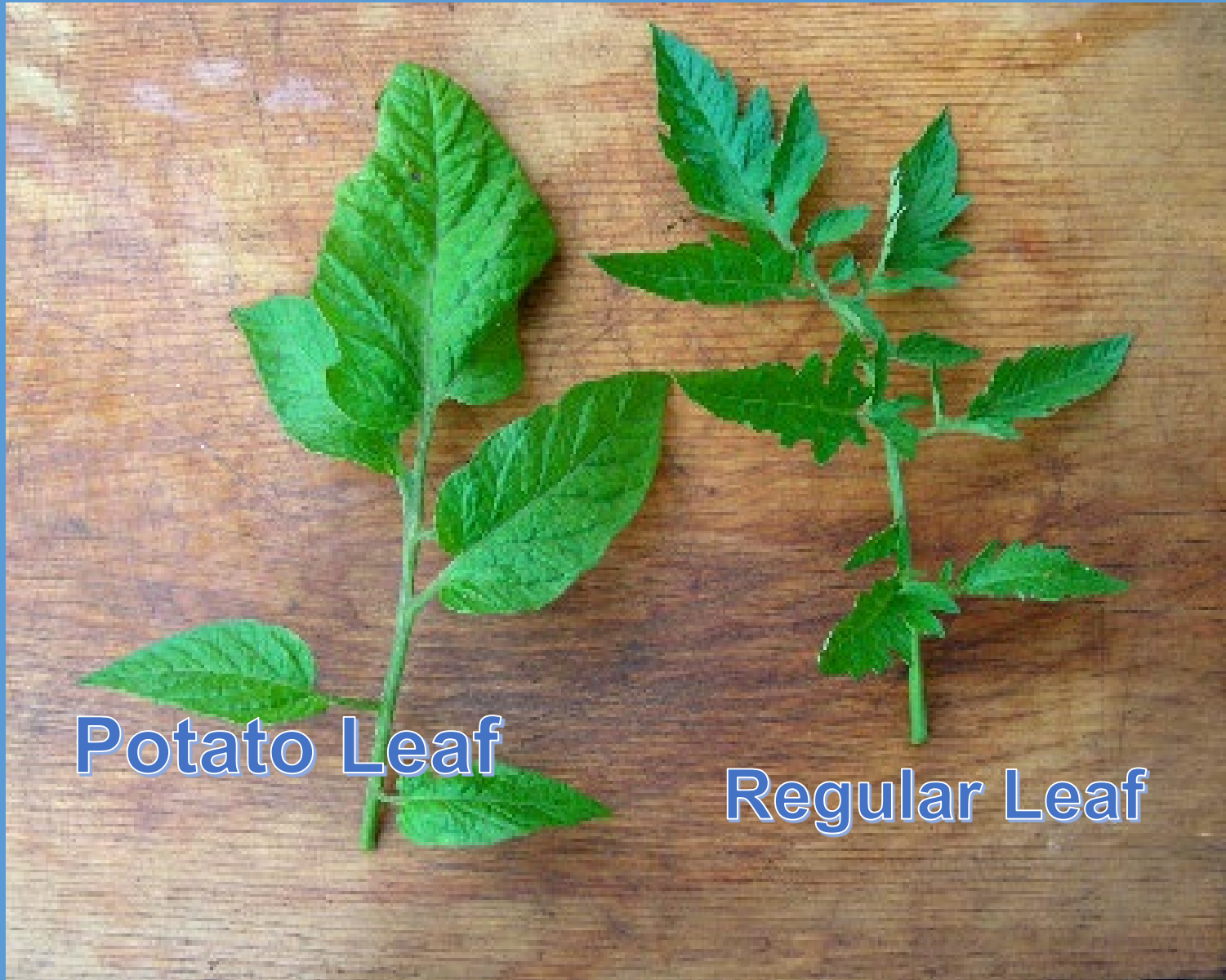


determinate



Dwarf Tomatoes





Potato Leaf

Regular Leaf

When to plant

- If growing from seed start plants indoors about 6 weeks before the last frost date
- Its best to plant when risk of frost is gone, and soil is warm. In Northern Indiana about the 3rd week of May is safe
- Be prepared to cover plants overnight to protect them from frost if you plant early



Hardening Off



- **Begin the hardening-off process 7 to 14 days before the date you will plant your seedlings outdoors.**
- **Because the length of time a seedling requires to harden off depends on the type of plants being grown as well as the outdoor temperatures, be flexible when hardening off your seedlings and prepare to whisk them indoors or cover them if a late spring [freeze](#) or snow is in the forecast.**
- **Harden Off Seedlings by Gradually Exposing Them to Outdoor Conditions**

1. On a warm day when temperatures are above 50 degrees Fahrenheit, place seedlings in an outdoor location that is protected from direct sunlight and wind for a duration of one hour on the first day.

2. Bring them back in to a cool spot in the house.

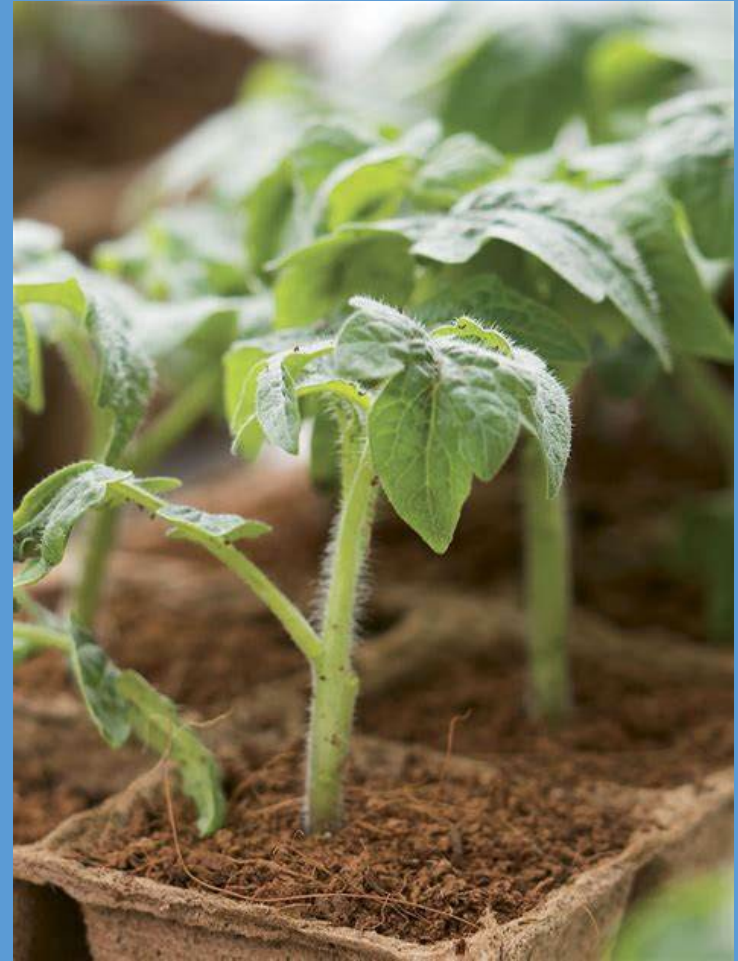
3. Enclosed porches and garages work well for hardening off

Don't forget to protect young seedlings from animals, snails, and slugs. Place them on a table or somewhere animals cannot reach them



Picking the right plant

- > Sturdy stems
- > 6 to 12 inches tall
- Check for signs of disease
- No blossoms

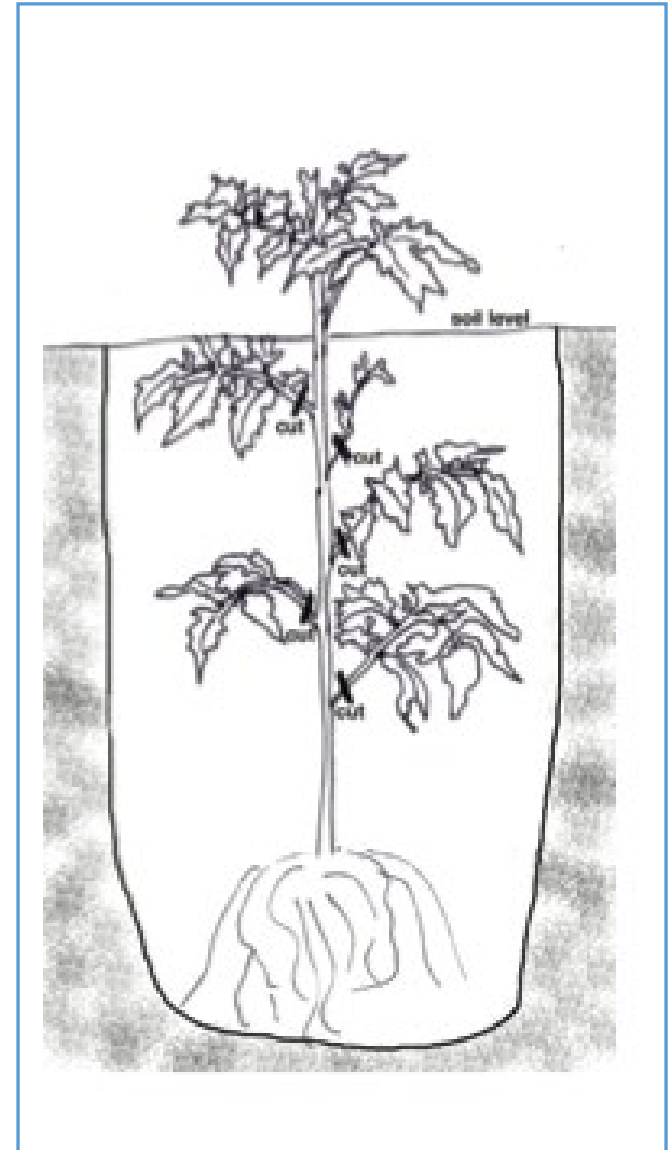


- Consider covering the planting area with black Plastic or red couple of weeks before you intend to plant to warm soil



Tomato Planting

- Bury tomato plants deeper than they come in the pot, all the way up to a few top leaves.
- Some Recommend 50% or more
- Be careful not to drive your pole or cage into the stem



Trenching In Tomatoes

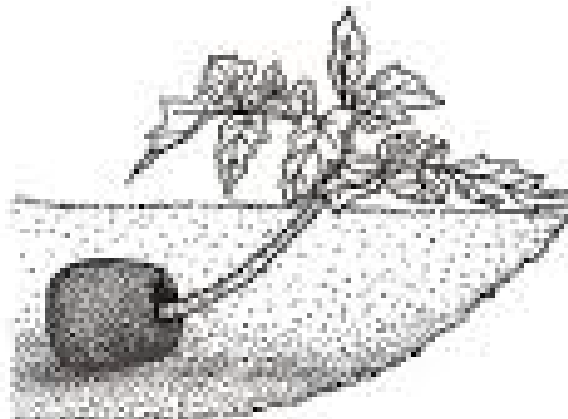


PLANTING TOMATOES IN TRENCHES

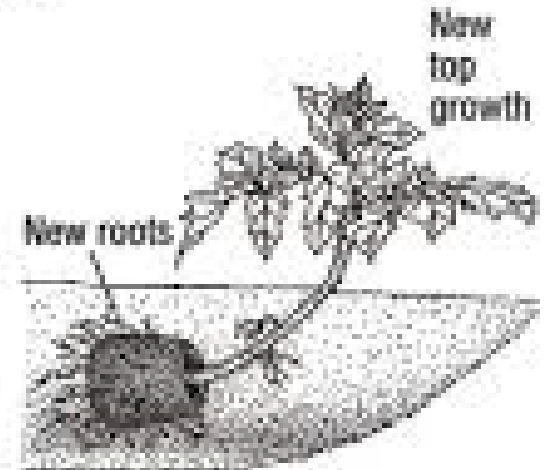


Remove lower leaves.

Preparing plants. Strip off all but the top set of leaves from the stems.



Planting. Set plants horizontally in a 2- to 3-inch-deep trench and firm the soil.



New growth. The plant top will turn upward and the buried stem will produce roots.

Off To A Good Start

Add a little something to get your Tomatoes growing

- Worm Castings
- Eggshells
- Powdered milk
- Compost
- Epson Salt



GREENLAND CRUSHED EGG SHELLS

All-Natural and Processed for Garden Use

- Excellent source of calcium
- Helps repel slugs and other soil-bound pests
- Premium quality and all-organic
- Environment-friendly

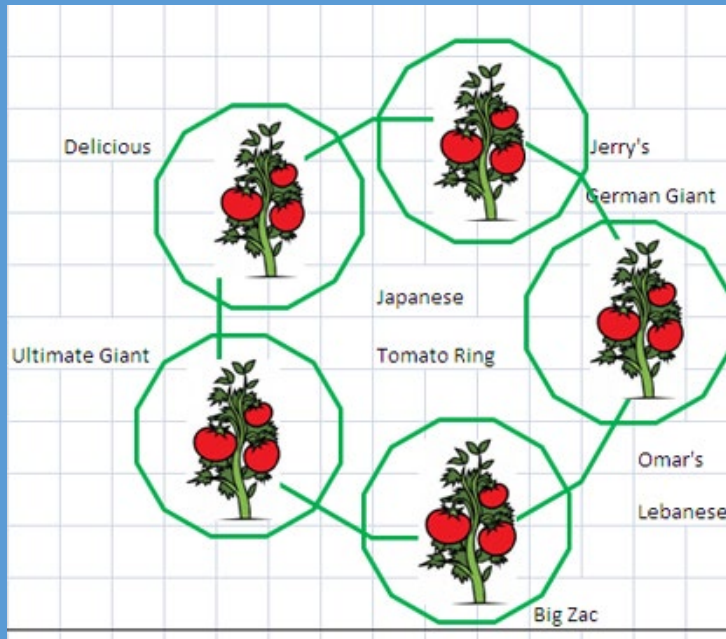
Available in 1-KG and 500g packs

Feeding your tomatoes



- Fertilize early (before 7/1)
- In northern Indiana
Light on nitrogen

Japanese Ring





A close-up photograph of a person's hand holding a large amount of wood chip mulch. The mulch is a mix of brown and tan wood chips. The background is a blurred concrete surface.

Tomato Care

- **Mulch after the ground has had a chance to warm up.**
- **Mulching conserves water and prevents soil born diseases from splashing up on the plants**
- **Don't put mulch down too early it may cool soil**

Pruning

Once the tomato plants are about 3' tall, remove the leaves from the bottom 1 foot

These are usually the first leaves to develop fungus problems.

Spraying weekly with compost tea also seems to be effective at warding off fungus diseases



Suckers

- In Indeterminate Tomatoes it helps to prune side branches





**Do not underestimate
your tomato plant**

- **Tomato Hornworm**

Eggs deposited on leaves in Early Spring, and Hatch 6-8 days later

Best Practice is to hand pick off Hornworms



will also attack eggplant, pepper, and potato.

Aphids: On Any Plant



- Dense clusters of tiny bugs on the stems or new growth of tomatoes.
- While small numbers are not a problem, large infestations can injure or even kill plants.
- Pinch off foliage where aphids are densely concentrated, and throw these discarded bits into the garbage
- Insecticidal soap or organic sprays.

Cutworm On Any Plant



These are the tiny caterpillars feed on young plant stems at night, eating right through them at ground level.

- Prevent damage by placing collars around seedlings.**
- You can make these of paper, cardboard, aluminum foil,**
- Sink the collars about an inch into soil around individual seedlings**

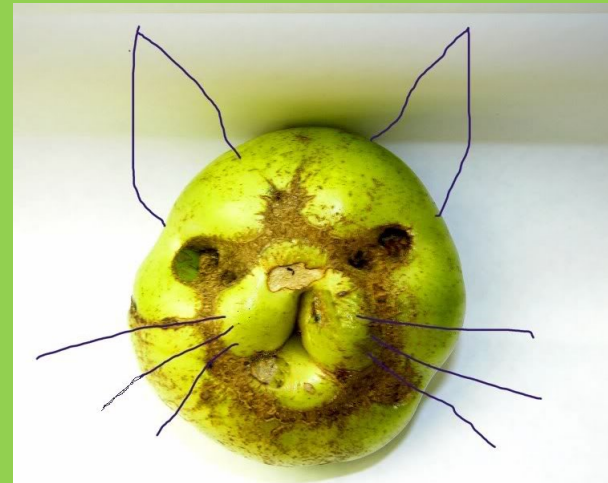


- **Fusarium Wilt:** Caused by a soil-borne fungus that targets plants (tomato, pepper, potato, eggplant),
- It often causes no symptoms until plants & fruit mature
- At that point foliage, sometimes on only one side of the plant, turns yellow, and a sliced stem will show brownish, discolored tissue.



- **Blossom End Rot:**
- **Tomatoes, Peppers, Eggplant**
- ripening fruit develop a dark spot at the lower end, a spot that gradually widens and deepens.
- Most often caused by uneven watering or by calcium deficiency.
- The simplest treatment is therefore pre-treatment: make sure soil is rich in all necessary nutrients
- Mulches help maintain even moisture levels
- PH 6.5





- **Sun Scald:** The tomato's skin will look bruised or leathery, the skin sunken and puckered. It is essentially what it sounds like, a sun-burn, tomato style, Too Much Pruning

- **Catfacing:** Catfaced tomatoes are deformed to a greater or lesser extent, having deep grooves running from the blossom end all the way around to the stem. The condition results from cool weather while the plant is in blossom.

Best Practices

- Crop Rotation
- Good Air Flow
- Plenty Of Sun
- Proper Spacing
- Regular Watering
- Shadow Your Garden





**Harvest Tomatoes
based on color & firmness**

Harvesting Tomatoes

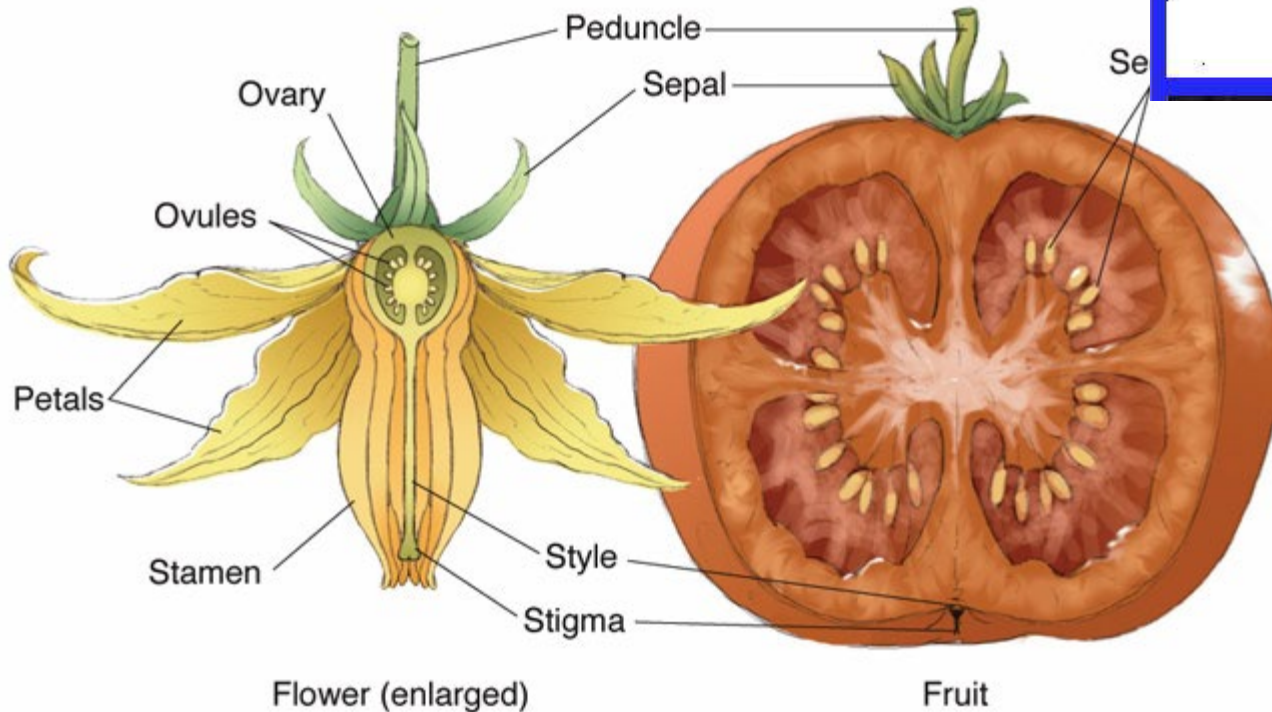
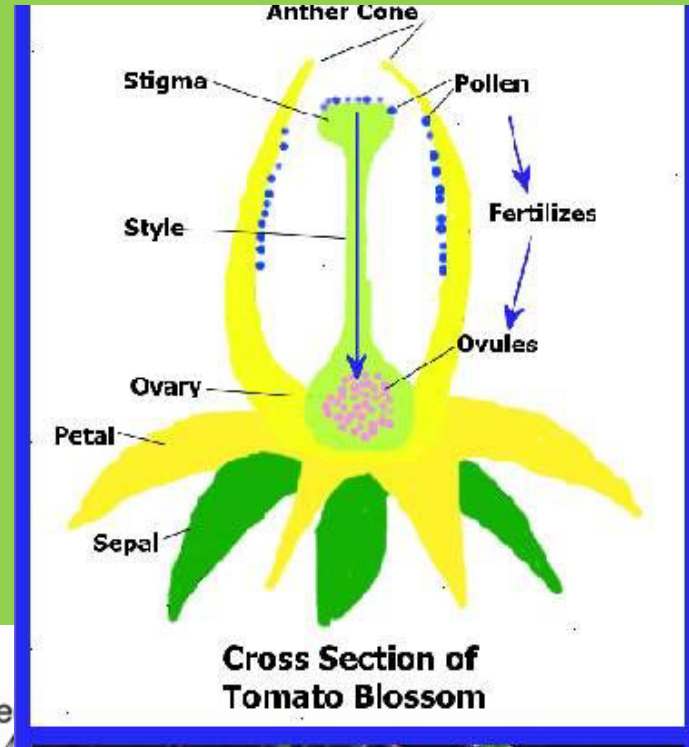
- **Leave an inch or so of stem on**
- **Store in cool dry place**
- **storing tomatoes in the refrigerator speeds up spoiling process**
- **Late in the season before first frost pull plants with unripe , and hang upside down in basement to let Tom's ripen**

Harvesting seeds

- Seeds collected from hybrid plants can be sterile.
- Seeds saved from hybrid varieties that do grow typically do *not* have the same characteristics as the parent, which can be fun to see what shows up.
- To ensure your plants reproduce true to stock, only save seeds from open-pollinated cultivars.
- Grow Tomatoes for seed saving away from other tomatoes.

Saving Tomato Seeds

- Know your source
- Heirlooms
- Hybrid



**Start with
ripe tomatoes**



**Remove
Seeds**

Put seeds in jar with an equal amount of water.



Leave at room temp.
a few days until a
film forms on top

Unity  Gardens



**Rinse seeds off
with clean water**



**Allow to dry on
wax covered
plate
wax paper
or screen**

Store in a cool dry place



Burying seeds for the winter

Slice tomatoes

**Lay them in the soil outside
and cover with 2 inches of
soil.**

**Cover that with 6 to 12 inches
of straw or leaves.**

**Pull Straw off in early May
and let plants grow.**

**You can also do this anytime
in a pot. Do not cover with
soil, just press slices into
soil.**



Questions ?

Thank You



Peppers: some like them hot



- Peppers come in various shapes and sizes and are packed with vitamin C - Yellow and Red peppers May contain more than double the vitamin C of a green pepper.



World's Hottest Pepper: Trinidad Moruga Scorpion Proclaimed New Champion Chile (2013)



How Hot is it



- The range of spiciness for peppers is measured in scoville units. Wilbur Scoville developed a scale to help determine this very issue and measure pepper Heat in 1912. The higher the number of scoville units, the hotter the pepper.
- Capsaicin is what makes Peppers hot .
- Its Also used in pepper spray



SCOVILLE CHILE HEAT CHART

© 2008 AZP Worldwide

SCOVILLE HEAT UNITS

15,000,000
2,000,000-5,300,000
1,000,000
577,000
200,000-350,000
100,000-250,000
30,000-50,000
15,000-30,000
12,000-30,000
8,000-23,000
5,000-8,000
3,500-8,000
2,500-4,000
1,500-2,500
1,000-2,500
1,000-2,000
500-2,000
500-1,500
500-1,000
500-750
0



TYPES OF PEPPERS

Pure Capsaicin
U.S. Grade Pepper Spray
Bhut Jolokia
Red Savina
Habanero
Chiltepin
Cayenne
Arbol
Manzano
Serrano
Yellow Hot
Jalepeño Pepper
Guajillo
Chilaca
Pasilla
Pablano
Anaheim
Chile Verde
Yellow Genetics
Red Chile
Sweet Bells

Planting Peppers

- **Pepper Plants or Indoor Starts Are Best**
- **Transplant in the garden late May**
- **Peppers grow well in raised beds in our area, but in dry climates they grow better in sunken beds.**
- **Plant at Same Depth as in Pot**

Planting Peppers

- Plant in area that has not had peppers planted there in 2 to 3 years
- The seedlings are to be placed at least about 6 to 12 inches apart for proper growth.



Planting Peppers

- **Peppers Like Warm Soil (above 65)**
- **Lots of Sun (at least 8 hours)**
- **Well Drained Soil**
- **Keep Soil Moist with Mulch (after soil is warm)**
- **Do not use high Nitrogen Soil**
- **Do not normally need support**

Pepper Care

- **Keep Weeds down they tend to harbor pests like leafhoppers.**
- **In the hottest Part of the season pepper plants start losing water through their leaves**
- **the water loss is to be reduced by boosting the humidity around the plants with a thick covering of dried grass.**



Harvesting Peppers

- Sweet Bell type peppers are can be harvested when firm and full size (at least 3 1/2 to 4 inches) but still green.
- If left to ripen, they may also turn red, yellow, orange, purple or even chocolate-colored depending on the cultivar.
- The less green you see, the sweeter the taste in both sweet and hot peppers.
- Once peppers begin to turn colors, they progress quickly so should be monitored carefully. Once they turn their final color, they deteriorate very fast and should be picked.



Harvesting Peppers

- Handle hot peppers with care
- Cut peppers off about an inch above pepper
- In Late fall you can cut whole plant & hang in basement to let pepper mature

Saving Pepper Seeds

- If saving seeds, allow fruit to develop to final ripe color, then leave pods on the vine about a week or 2 longer. This allows the seeds to fully mature.
- Choose large pods from vigorous plants, remove seeds, and let them air dry completely.
- This can take up to several weeks depending on the seed type. Store in a cool, dry, dark place.

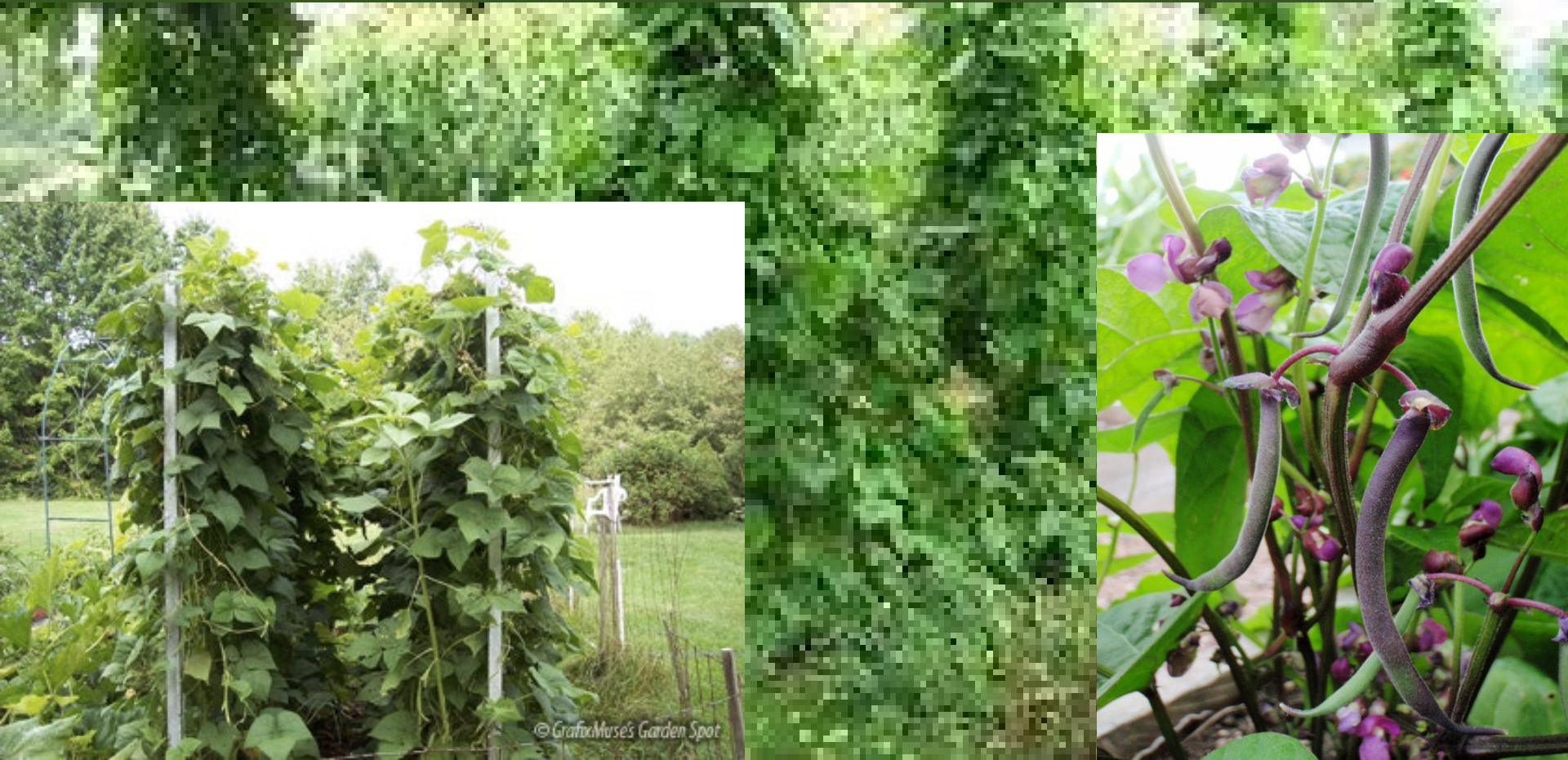


Beans

Pole or Bush ?

Dry ?

- **Pole Beans:** climb supports and are easily harvested.
- Pole Beans keep producing
- My Favorite Blue Lake (pole or Bush)
- For Fun try Yard Long , Burgundy



- **Bush Beans:** (string beans) stand erect without support. They yield well and require the least amount of work
- But yield less then pole beans , shorter life span



Plant them when its warm

- **Green bean seeds like warm soil and a full sun location.**
- **You can start indoors, but do not need to.**
- **Do Not ..plant any seeds until all danger of frost has passed and the soil temperature remains above 65 degrees.**
- **Some garden experts say you'll get the best results and overall healthier plants if you wait until the soil is at least 70°F.**

- Green beans like well-drained and fertile soil and soil that has not recently been planted with beans, potatoes, tomatoes, lettuce or cabbage.
- Pole beans take longer to produce
- Bush Beans produce early, Stagger Planting

Planting Beans



Planting Beans



- Place bean seeds in a 1" deep furrow 1-2" apart , With 2' to 2'-1/2' row spacing
- When they are 3" tall thin to 4" apart
- You can start indoors 6wks before last frost , plant 4" apart in garden

The background of the slide is a close-up photograph of bean roots. The roots are light-colored and fibrous, extending downwards into dark, rich soil. Some roots are thicker and more prominent, while others are thin and numerous, creating a dense network. The lighting highlights the texture of the roots and the moisture in the soil.

Care

- Beans have shallow roots
- Weed early , Do Not Cultivate Deep
- Pole beans climb, and may need help getting started up the trellis

Harvesting Beans

- Harvest when the pods are firm, crisp and fully elongated, but before the seed within the pod has developed significantly
- The bean plant continues to form new flowers and produces more beans if pods are continually removed before the seeds mature.
- Beans can be Frozen, Dried, Canned

- **How to Dry Beans**

- WHEN are beans ready to be harvested for use dry? “When at least 90 percent of leaves have fallen and pods are dry,” says Johnny’sSeeds’
- The [International Seed Saving Institute](#) says that will be dry about six weeks after the fresh-eating stage.
- “Allow beans to dry on the vine,” says Fedco Seeds, “until pressing them with your fingernail leaves no indentation.”
- If wet or frosty weather threatens in the late going, pull the plants by firmly grasping the roots, and hang them to dry under cover.
- This is actually the best way to harvest beans you want to use dried, anyhow—not a pod at a time. Even in a favorable season, it’s not a bad idea to hang them somewhere dry for a bit longer, anyhow, before separating the seeds.
- When fully dried, on a big tarp you can “thresh” the seeds loose by beating the plants against the fabric. Or, slightly less chaotic, sit alongside the tarp and shell the seeds into a bowl, leaving the debris on the fabric.



Lettuce & Other Green Leafy Types

- Small seeds plant Shallow
- Most can be started indoors , But direct seeding is fine
- Check seed pack , but most are early spring starts
- Good for Spring & Fall Crops
- Good fertile soil , Lightly fertilize before planting

Mustards

A close-up photograph of a mustard plant. The image shows several green leaves with a slightly serrated or lobed edge. In the upper left, there are some reddish-purple leaves, possibly from a different variety or a related plant. A prominent white flower with multiple petals is visible on the right side of the frame. The background is a dense field of similar green plants, suggesting a garden or field setting.

- **Spicy green**
- **Plant as soon as soil can be worked**
- **Plant all season long**
- **Indoor start for spring jump start**
- **Harvest to prevent bolting**
- **Many types & colors**
- **Good cover crop**
- **Grow like weedsalmost invasive.**
- **Bees like flowers.**
- **Harvest ..just cut them down they will keep growing.**



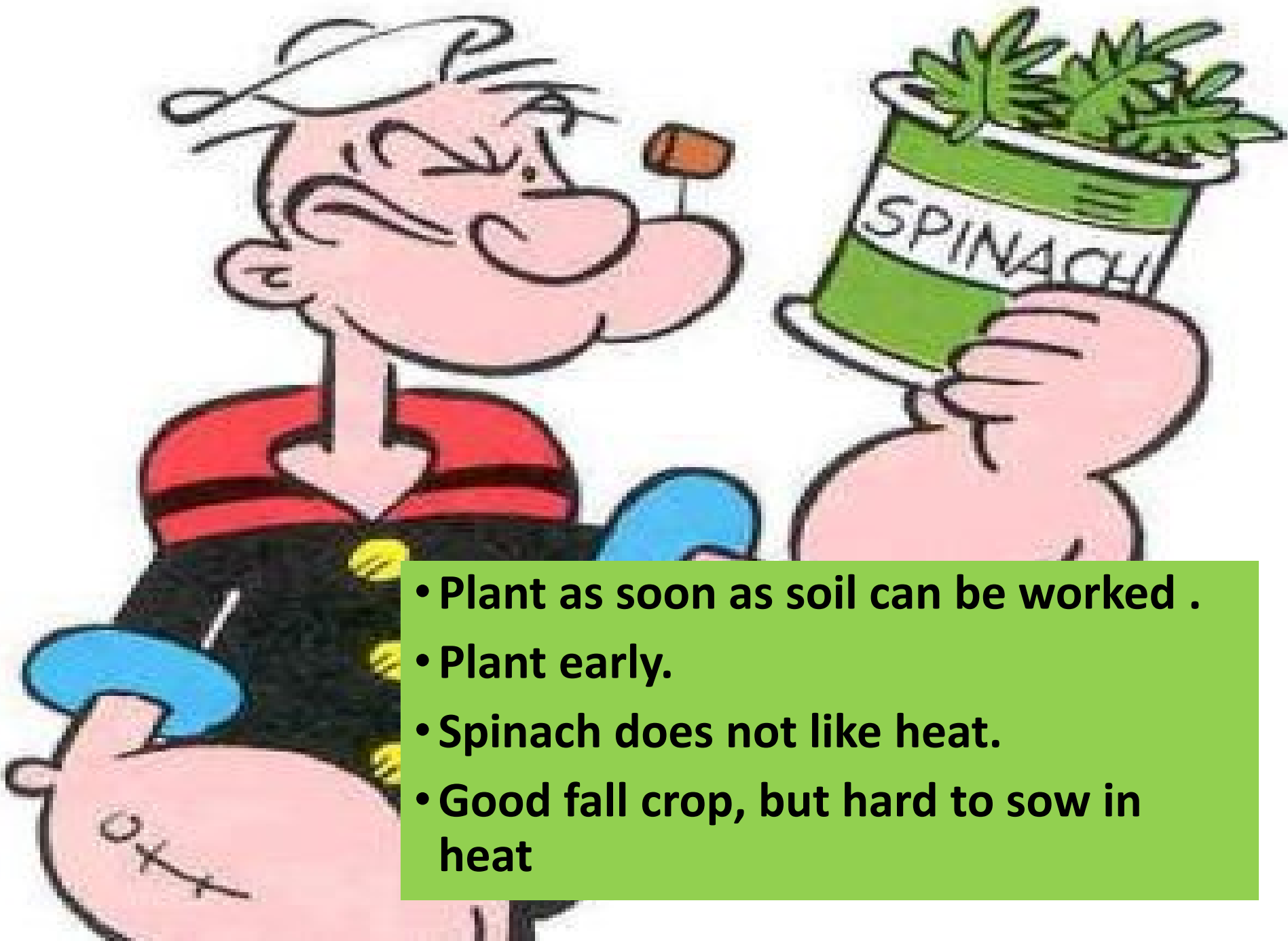
Lettuce

- Plant as soon as soil can be worked.
- Heat tends to bitter leaf lettuce
- Harvest to prevent bolting , just cut
- Lots to choose from.
- Plant fall crop late August

A close-up photograph of several kale leaves, showing their characteristic crinkled and textured surface. The leaves are a vibrant green color with some lighter, almost white, veins. The background is slightly blurred, focusing attention on the texture of the leaves in the foreground.

Kale

- **Plant early indoors or seed direct**
- **Likes to germinate in a little warmer soil**
- **Super Food ! along with Broccoli is one of the healthiest green veggies**
- **Can live down to about 20 degrees**
- **Several varieties**
- **Great harvested as baby Kale or full grown**



- Plant as soon as soil can be worked .
- Plant early.
- Spinach does not like heat.
- Good fall crop, but hard to sow in heat



Swiss Chard ...Summer Spinach

- Swiss chard may be a less popular vegetable here in the United States, but his cousin of spinach is known to be one of the most nutritious vegetables you can eat, and is quite popular in European countries.



• Very hardy all summer and into late fall



Beef & Rice Stuffed Chard Rolls



Greens Care

- Plant heavy ,thin plants early that begin to bunch
- Water mornings
- Make Sure Plants get really Good Air Flow
- Mulch early in the season, but not too close to stems

Harvesting Greens



- **Clean sterile Scissors or sharp knife**
- **Clean hands**
- **Rinse in cool to cold water**
- **Store in cool area**

Harvesting Greens



- Harvest Greens in the morning, after the plants have had all night to plump up with water. Get them to cool place.
- Picked on a hot day greens wilt.
- Pull (and eat) young plants until you get the spacing you want.

Harvesting Greens (cont.)

- **Gather individual mature leaves from outside edges of plant**
- **Or use scissors to cut off all leaves.**
- **Rinse Greens thoroughly with cool water, shake or spin off excess moisture, and store it in plastic bags in the refrigerator.**
- **Greens often needs a second cleaning as it is prepared for the table**

Squash

- Zucchini , 8-Ball, Crookneck , Yellow , Green , Acorn , Butternut ,



Squash



- Most grow on a vine .
- Zucchini grow bushy
- Some new compact Varieties out
- Squash loves soil with lots of organic material
- Start from Seed or Transplants when soil is good & Warm . Late May early June

Summer Squash


A photograph of several summer squash varieties in a wooden basket. In the foreground, there is a long, yellow squash with a bulbous end, a green zucchini, and a white squash. In the background, there is a yellow squash and another green zucchini. The basket is set against a wooden background.

is a tender, warm-season vegetable

- Summer squash differs from fall and winter squash in that it is selected to be harvested before the rind hardens and the fruit matures.**
- A few healthy and well-maintained plants produce abundant yields**

Planting Summer Squash

- Squash grows great from seed and grows fast.
- Plant starts also work well.
- Plant early June
- Summer squash differs from fall and winter squash in that it is selected to be harvested before the rind hardens and the fruit matures.



**This is a
Butternut Squash.**

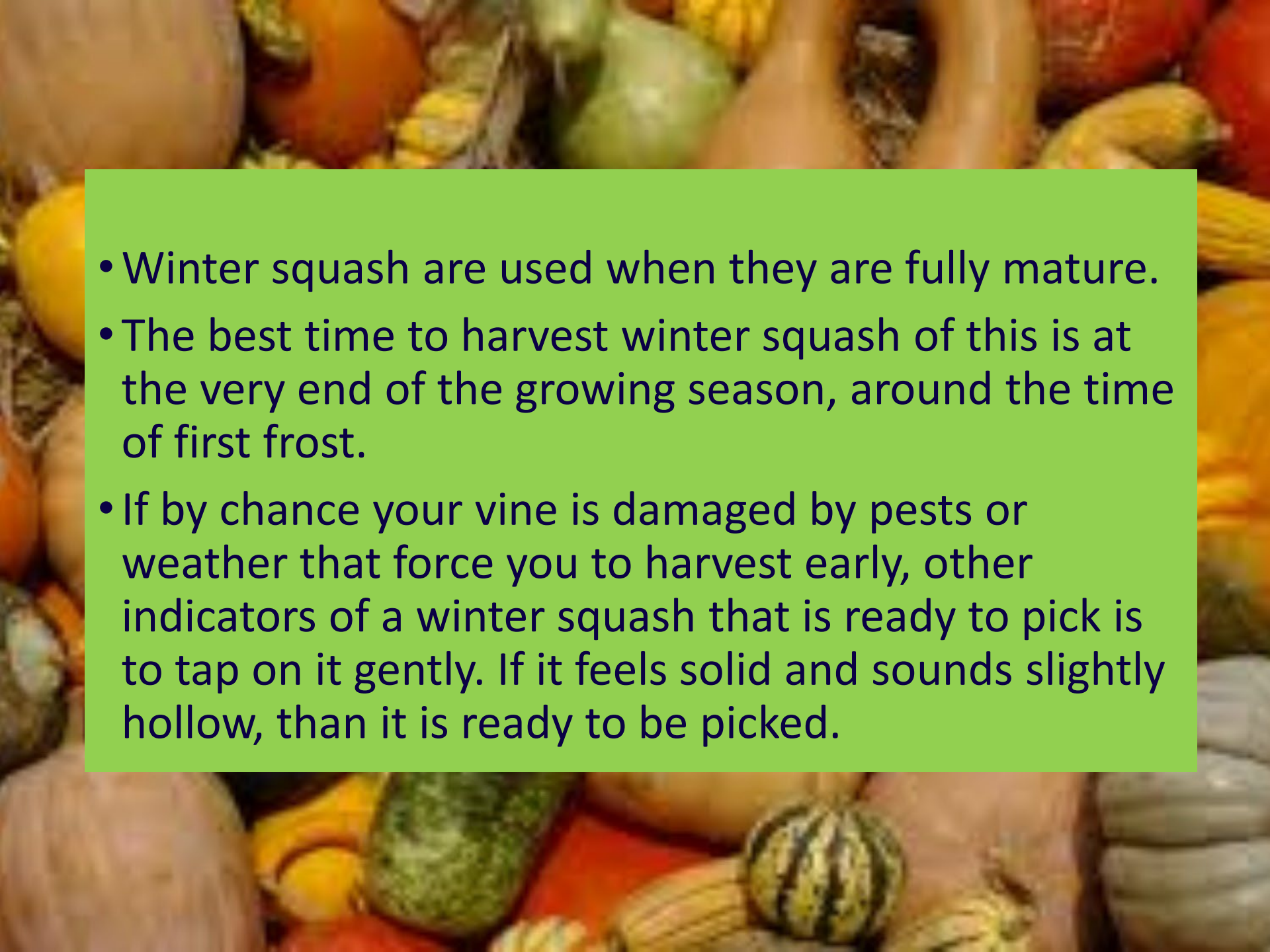
**This is a Carnival
Squash. Cook like
a Butternut Squash.**

**This is a
Spaghetti
Squash.**

Winter Squash

- butternut, acorn, spaghetti, buttercup etc..
- Winter squash stores through winter.
- Squash store best at an even 50°F in a dark place.

**This is a
Acorn Squash.**

- 
- Winter squash are used when they are fully mature.
 - The best time to harvest winter squash of this is at the very end of the growing season, around the time of first frost.
 - If by chance your vine is damaged by pests or weather that force you to harvest early, other indicators of a winter squash that is ready to pick is to tap on it gently. If it feels solid and sounds slightly hollow, than it is ready to be picked.

Soil Prep for Squash

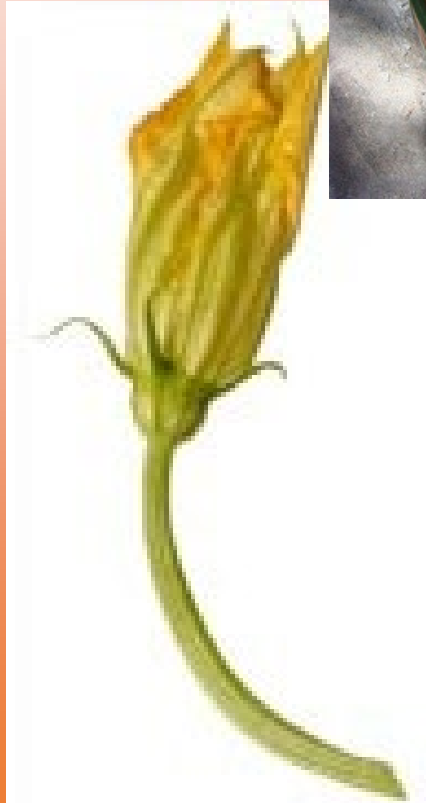
- Prepare Soil deep at planting site
- Loose soil with lots of organic material
- Fertilize before planting
- Plant on Mounds 6 to 12" tall



Planting Squash

- **Sow two or three seeds 24 to 36 inches apart for single-plant production, or four or five seeds in hills 48 inches apart. Cover one inch deep. When the plants are 2 to 3 inches tall, thin to one vigorous plant or no more than two or three plants per hill.**

Squash Blossoms





Male flower

Female flower

Peas

- **Plant them early !!**
- **Plant a fall crop**
- **Peas like cool,moist,well drained soil**
- **Peas like to grow up a fence, Trellis etc.**



Planting Peas

- Dig a 6" wide 4" deep trench with your hoe
- Put a layer of peas in trench, and cover with a ½" of soil .



Peas Care



- Peas pull nitrogen from the air .
- Good soil with lots of Organic material is all they need
- Do not fertilize peas
- Have something for them to climb
- Harvest Early & Harvest Often
- Peas tend to leave with the hot weather

Harvest Your Peas

- You can also eat the tender first shoots or even the vines and tendrils themselves in soups and stir fries.
- Check peas to see if they Snap, If So they are ready
- **Peas will lose sweetness quickly**

GIVE PEAS A CHANCE!

Potatoes

Potatoes

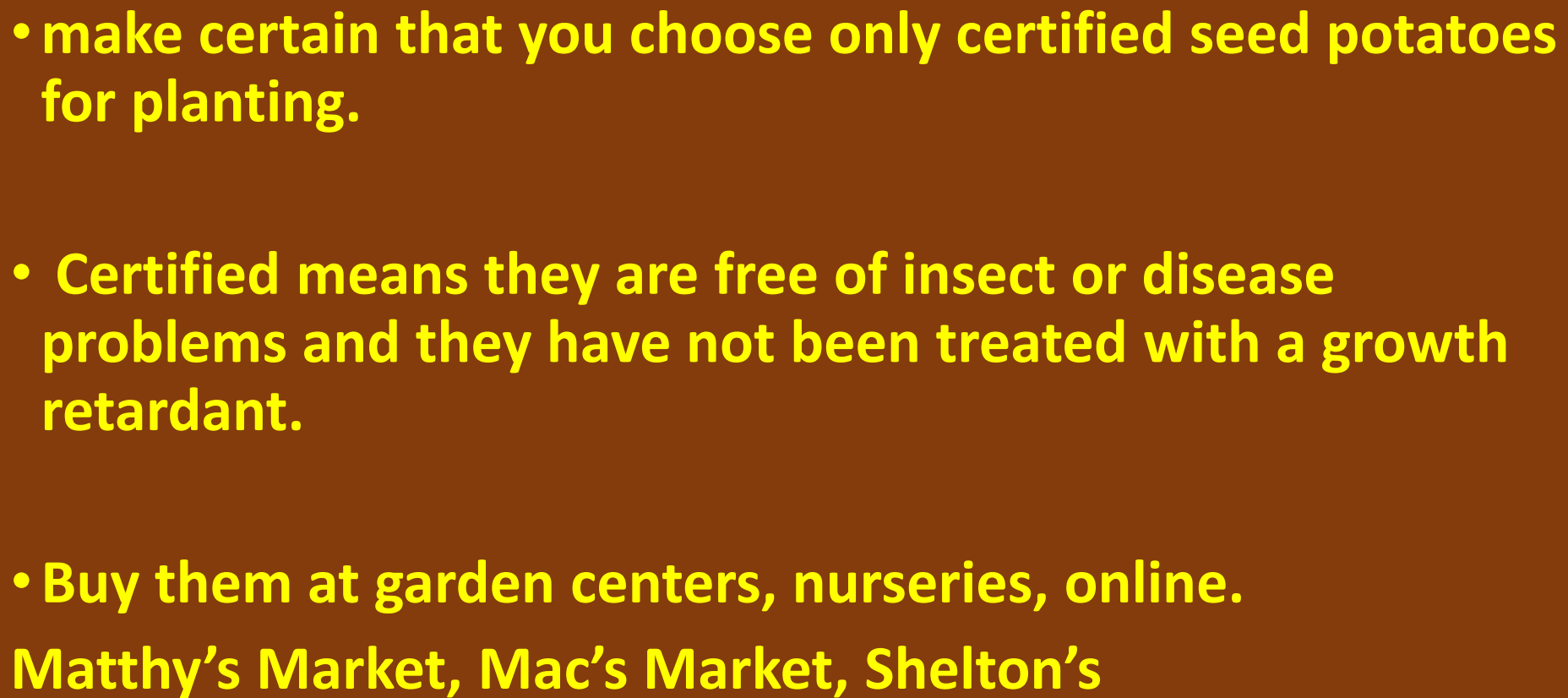


Plant on St Pats day

**Planting this Early may increase
Chance of fungal growth**

Plant Late Summer for Fall Crop

Plant in Fall for Early Spring Crop

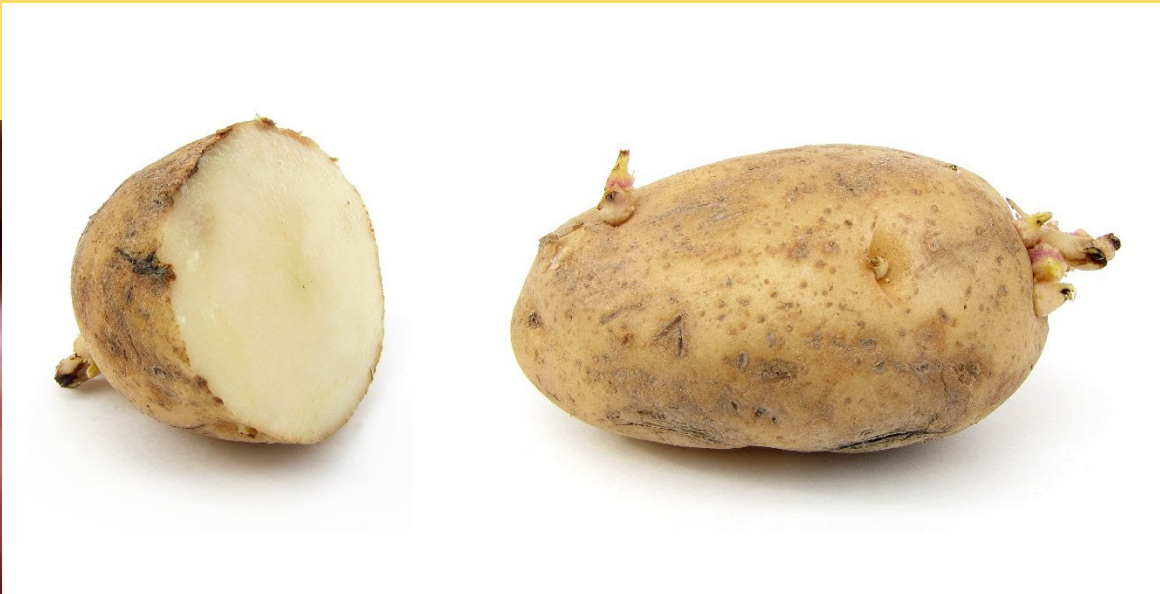
- 
- **make certain that you choose only certified seed potatoes for planting.**
 - **Certified means they are free of insect or disease problems and they have not been treated with a growth retardant.**
 - **Buy them at garden centers, nurseries, online.**
Matthy's Market, Mac's Market, Shelton's

Soil Prep for Potatoes

- **potatoes grow in just average soil**
- **the addition of some compost or a little peat moss is beneficial.**
- **Avoid using fresh manure or lime in the soil where potatoes are to be grown, as it tends to cause scab on the potatoes.**
- **The addition of either 5-10-10 or 10-20-20 fertilizer is beneficial.**
- **Mix the fertilizer into the planting soil, prior to planting. spade the soil to a depth of ten or twelve inches.**



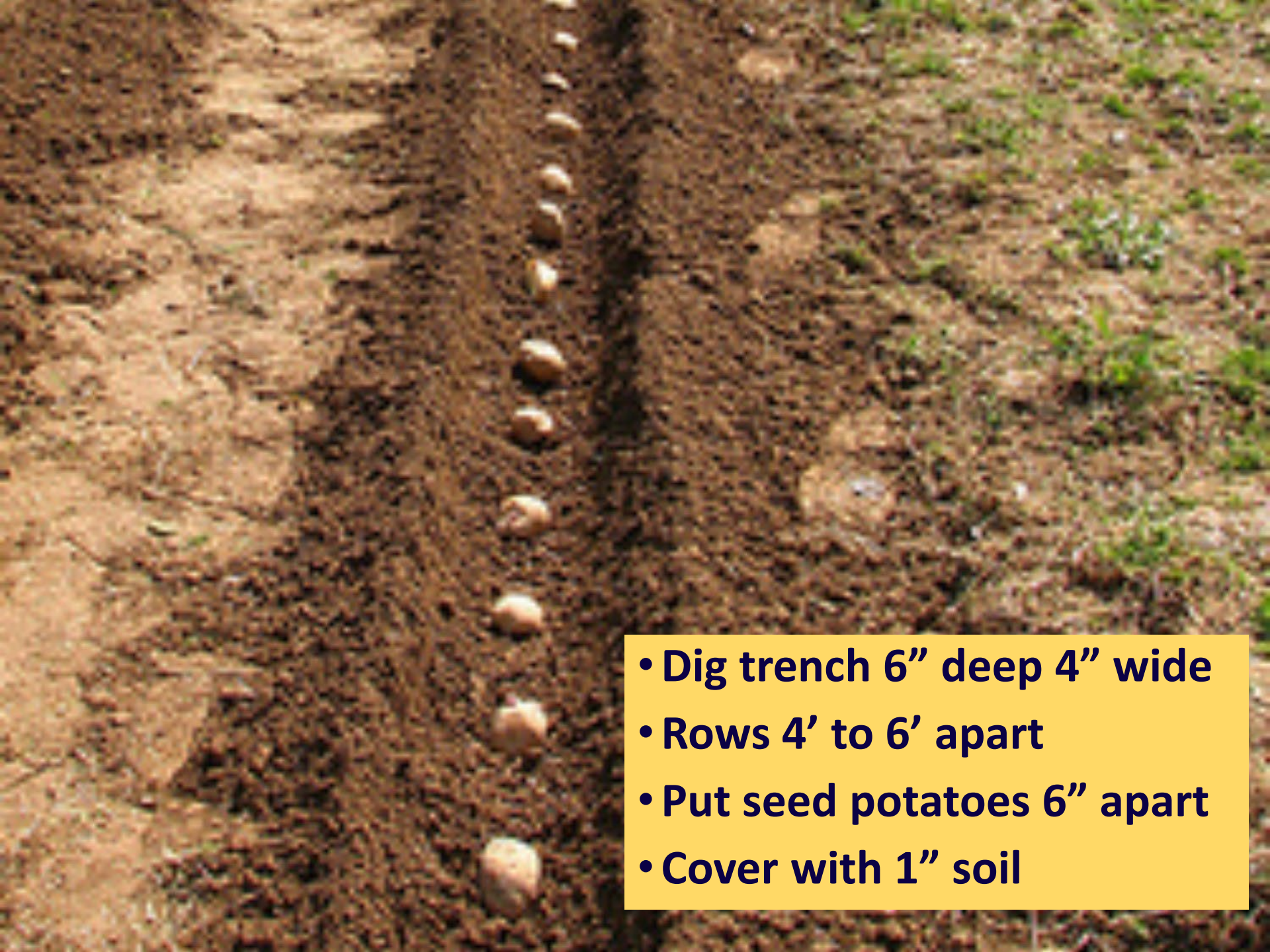
- cut in half, or quarter them. Each section should have two or three 'growth eyes'.
- After cutting, let the cut surface callus-over before planting them.



Planting



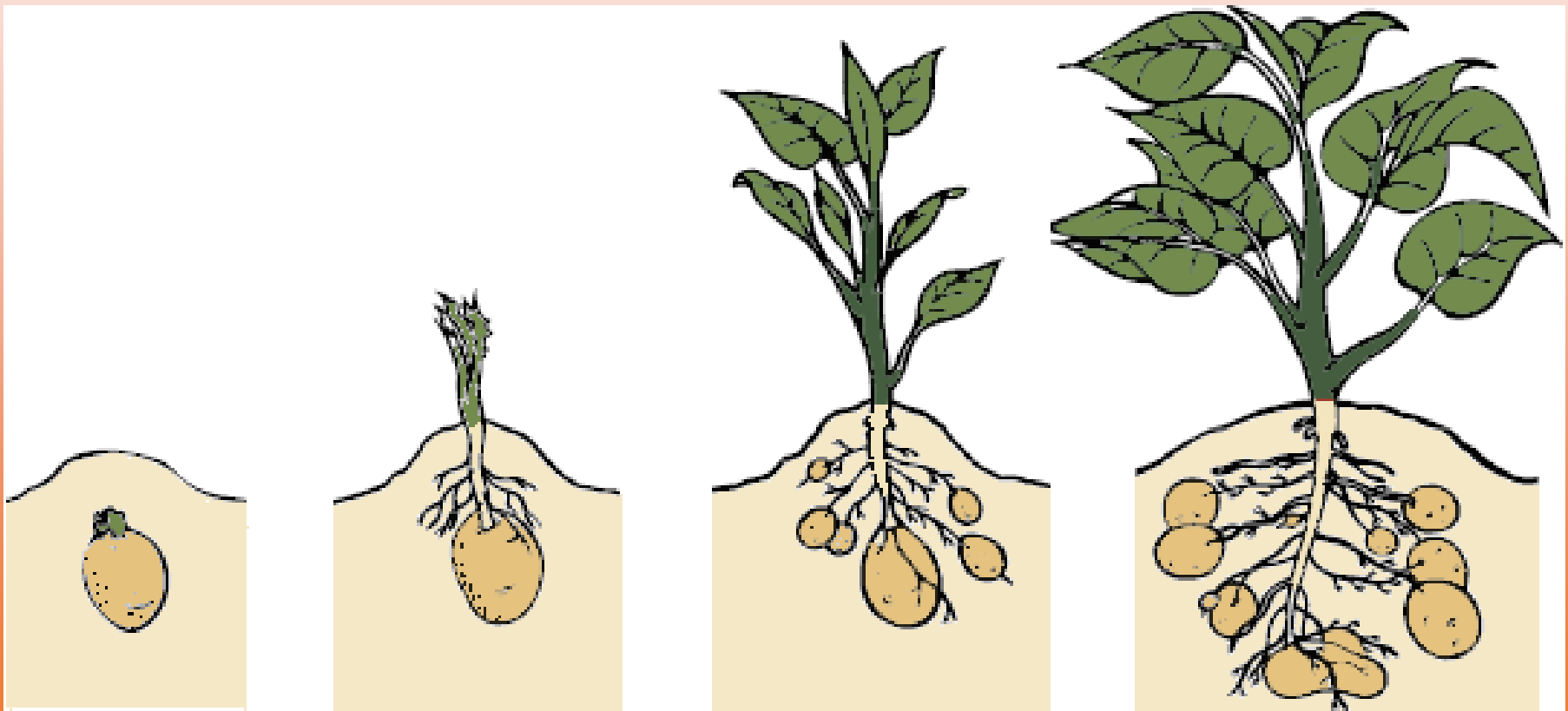
- potatoes can be grown in many different ways.



- Dig trench 6" deep 4" wide
- Rows 4' to 6' apart
- Put seed potatoes 6" apart
- Cover with 1" soil

Hilling Potatoes

- **Pull in additional soil as the plants develop. Always be certain the surface tubers are covered with soil.**








Think Inside the Box



Fall Planting of Potatoes

- 
- Plant in Late Fall after you have cleaned up garden
 - Dig 10-12" deep trench
 - Put sprouted Potatoes in
 - Cover with 4" of dirt
 - Then Cover with Mulch or Straw

Volunteer Potatoes

Potato Pest

- Colorado Potato Beetle
- Best to Had Pick them Off
- Mint Helps ward off bugs
- Rotate Crops
- Plant Late



When to harvest



- Early Potatoes can start to be pulled when flowers show



- When the tops start to turn yellow and wither even though there's enough water in the soil, that's when the plants have stopped growing and it's time to harvest.
- No Rush Potatoes can remain in the ground a long time



Corn



CornNothing better then corn on the cobb

Corn

- **Corn doesn't really hit its stride until the weather warms up.**
- **Corn likes well-worked, fertile soil with good drainage, and it must have full sun.**
- **Sow the seeds directly in the garden on the average date of last frost.**
- **Plant the seeds 2 to 4 inches apart in short rows forming a block rather than a single, long row.**
- **Planting in clumps ensures pollination. For a continuous supply, plant early, mid-season, and late varieties at the same time.**

Soil & Water

- Corn Needs good Fertile Soil
- If you do not plan on using fertilizer , Make sure soil is rich with organic material
- Once it tassels it needs lots of water up to an inch a day

- For a continuous supply, plant early, mid-season, and late varieties at the same time.

- Plant 3 seeds in a hole

- $\frac{1}{4}$ " Deep

- Thin Later

- Plant Rows 24" apart



- Thin corn to 2 stalks every 6" in a row this will help support the growing stalks



Harvesting Corn

- **Step 1: Size and Feel of Ear** - Does it feel full and do the kernels feel formed all the way to the top of the ear?
- **Step 2: Silk Color and Dryness** -When silk turns brown
When an ear is ready to be picked the silk will look really dry almost like straw.
- **Step 3: Kernel Fluid Color** - expose the tip of the corn ear and then pierce one of the kernels with your finger tip. If the fluid comes out milky, then it is perfect and it is ready to harvest. If the fluid comes out clear, you are a little too early, cover the ear back up and wait a few more days. If no fluid comes out, but squirts starchy gunk you have waited to long.



- **Corn Smut**
- **A Fungus that attacks Corn**
- **Its black spores on the ears of corn are dispersed by wind**
- **It Thrives in hot dry summers**



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Now Go Out And Garden !





- <http://urbanext.illinois.edu>
- <http://www.extension.purdue.edu>
- Cornell Extension
- Ohio State Extension

