

Heirloom Tomatoes at Growing Gardens



Background on tomatoes- *lycopersicon lycopersicum*

- Tomatoes originated in South America, possibly present-day Peru, and were brought to Mexico, and then Spain in the 16th century, making their way into Italian and French cooking as the “pomodoro” or “pomme d’amour” -- believed to be an aphrodisiac.
- Europeans were skeptical about tomatoes, feared as a toxic nightshade (the name given to vegetables in the Solanaceae family including potatoes) and had many troubles such as fusarium wilt (which still occurs, from fungus).
- Botanically speaking, **tomatoes are technically a fruit, meaning they are developed from the ovary of a flowering plant.** Since the late 19th century, tomatoes have been **legally classified as vegetable for import reasons**, with the argument that they are eaten as a vegetable.
- Tomatoes are a warm season crop, like cucumbers, corn, and peppers.

Why eat tomatoes:

- Not only are they delicious with cheese, other vegetables, fish, meat, and pasta, they also are filled with anti-oxidants like vitamin c, beta-carotene, important minerals for your heart like magnesium and potassium, niacin, and vitamins a and e.
- Tomatoes may also offer such benefits as promoting bone health and slowing cancers and neurological disorders (The cancer prevention has been linked to Lycopene, a phytochemical whose red pigment lends tomatoes their color, though recently it’s been suggested that our bodies absorb lycopene better in the lighter orange colors than the common deep red).

Why heirlooms?

- We can consider heirloom plants as “living antiques, handed down from one generation to another”. Many American varieties arrived with immigrants from Europe even though it’s a New World food, passed on via Seed Savers Exchange (Iowa), a nonprofit that has preserved over 24,000 varieties of heirloom seeds and has about 10,000 members.
- “**Heirloom**” has become an umbrella term with varying definitions, but usually meets these criteria:
 - **open-pollinated** (can reproduce themselves from seed, with plants resembling their parents)

- often have cultural, ethnic back-story
- adapted to particular climate and soil where they are traditionally grown and therefore should be more resistant to harsh local weather, disease, and pests, though they tend to be erratic, delicate, highly perishable, and difficult to transport, making them less likely to sell and keep in supermarkets

For heirloom tomatoes in the Rockies, where climate and soil are largely unsuited for this crop, remember these general guidelines:

- flavor depends on soil acidity, season, and growth stages/methods, so when considering nutrient content, aim for a healthy pH, which is slightly acidic for tomatoes; don't over-fertilize (nitrogen excess is a common local problem)
- best grown outdoors (alternative is well-lit, well-ventilated space like greenhouse; container plants need more watering) with drip irrigation, proper spacing (per seed package instructions, generally 14-18 inches) and support structures (stakes, twine, trellises, cages) and allowed to ripen completely or almost completely on vine, with mulch around stems (avoid direct contact with stems to minimize rot, pests) and floating row cover if needed
- don't plant at foot of hill or other low-lying places (which will get colder from lack of drainage/wind), but rather buttressed with other growth /walls/hedges (not high trees or buildings)
- respond at first signs of disease like yellow, withered stems and leaves – remove immediately!

Generally speaking, the following organically acceptable measures will ensure the healthiest crops:

- choose local varieties: plant seeds that have a history of success in your climate and soil type (heirlooms are not always local)
- consider companion planting (different crops planted close together), especially **alliums** (onions, garlic) nearby
- practice crop rotation, including cover crops like rye, buckwheat, wheat, legumes when not in season
- use living mulch (organic compost preferred, can include coffee grinds) and/or straw mulch, which prevents soil crusting/weeds/pests especially when used with floating row cover
- good air circulation helps prevent disease/light blight
- install physical barriers like floating row covers
- try soap, garlic/hot pepper sprays instead of fungicide and insecticide which are last resorts (most of which are not an option for organic farmers)
- encourage beneficial critters like: ladybugs, praying mantids, toads, lizards, some NEMATODES (aka earthworms = microscopic unsegmented threadlike roundworm), bats and some birds good
- hand-picking and weeding are key, while pruning should be selective (over-pruning can cause sunscald)

Planting details:

- Tomatoes fall under the “tender” category of hardiness, meaning they should be planted in seed flats or soil blocks just after last frost, with ideal germination temperatures between 60-85 degrees with plenty of water and sunlight
- Start seeds in containers 6-8 weeks before last spring frost (with ideal soil temperature range 70-75), covering them ¼ inch deep.
- Seedling will usually emerge within 1-8 days
- Germination (the beginning of the growth of a seed) usually takes 4-9 days, with growth to transplant size in 5-6 weeks

- average yield per 10-foot row: 15 pounds
- since heirlooms are open-pollinated, pollination among flowers will be uneven, thriving between 60-70 degrees
- pick when ripe or almost ripe
- seeds can last 6-10 years in good conditions

Heirloom varieties at Growing Gardens 2012

| Variety | Photo | Characteristics | Growing notes |
|--------------------------|---|--|--|
| Cherokee Purple (F/GH) |  | <ul style="list-style-type: none"> -indeterminate -probably native to Tennessee, pre-1900 -sweet smoky taste, characteristic of blacks -soft, thin-skinned -avg. harvest 82 days | <ul style="list-style-type: none"> -good flavor and yield, consistent, healthy, with long season -very perishable, difficult to transport -whiting on tops from splitting (from erratic precipitation), usually calluses over |
| Brandywine (F/GH) |  | <ul style="list-style-type: none"> -indeterminate, -probably from Amish Pennsylvania, via SS Exchange/ Ben Quisenberry's Big Tomato Gardens (Syracuse, OH, mid-20th c.) -big, deep pink-red beefsteak -very sweet, thin-skinned -likes cooler temps (won't set fruit over 90 degrees) -avg. harvest 80 days + | <ul style="list-style-type: none"> -repeatedly wins blind taste tests, described as nostalgic old-fashioned tomato flavor -very perishable, with frequent splitting, caused by surface damage (also extreme water and temperature changes on vine) -Catfacing, cankers, and sunscald issues (see tomato problems chart) |
| Yellow Brandywine (F/GH) |  | <ul style="list-style-type: none"> -Indeterminate -sweet, slightly tart and creamy flavor -tall plants with potato-like foliage -avg. harvest 85 days | <ul style="list-style-type: none"> -sweet, mild flavor -Splitting -for 2013: The Platfoot strain, (Gary Platfoot in Ohio, for smoothness, productivity) |
| [Copia] |  | <ul style="list-style-type: none"> -indeterminate -mostly F1 hybrids | <ul style="list-style-type: none"> -Great tangy flavor - avg. harvest 85 days -Blight |

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| [Black from Tula Thessaloni ki (F/GH)] |  | -indeterminate -Russian variety with mahogany coloring -smoky, sweet | -Good smoky flavor -75 day harvest |
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*F = field/GH = greenhouse

Varieties to consider for 2013:

- **Front Range heirloom winners:** ‘**Black Krim**’ * (prized variety from Krim, Russia, smoky and slightly tangy, with mahogany fruit and green shoulders; fruit sets at higher temperatures and is supposedly easy to grow); ‘**Green Zebra**’, ‘**Big Rainbow**,’ ‘**Red Siberian**’ and ‘**Aunt Ruby’s German Green**, **Green Doctors**, with **Sungold**, **Japanese Black Trifele**. For smalls (cherries): **Super Sweet 100**, **Chadwick** and **Snow White Cherry**

Other generally recommended:

- **Abe Lincoln**, **Better Boy**, **Early Girl**, **Celebrity Roma**, **Golden Mama**; incidental reader suggestions from *Terrific Tomatoes* (Rodale, 1975): ***Porter**, **Red Cloud**, **Dwarf Champion**, **McGee**, **Viceroy**, **Bonanza**

Common heirlooms:

- Mortgage Lifter, **Black Seaman**, **Golden Peach** *(100 years old, sweet and tart taste, slightly fuzzy skin, mature when pale yellow with pink blush, sturdy, keeps well), **Czech’s excellent yellow** * (strong flavor, slightly acidic, prolific vining with 3-inch round fruits, native to Ohio via heirloom pioneer Ben Quisenberry), **White Beauty**

Common tomato problems and controls

| Problem | Symptom | Cause/Description | Control |
|-----------------|---|--|---|
| Anthracnose | Enlarged sunken spots, darkened centers, rot | Disease caused by fungus | Crop rotation, sanitation, healthy soil, and ventilation |
| Blossom end rot | Dark brown, leathery sunken spot at blossom end that enlarges | Physiologic disorder due to lack of calcium, | Maintain soil moisture and temperature with floating cover, drip irrigation, mulch (avoid direct contact!). Don’t over-prune |

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| Early blight * | Dark brown spots on leaves & brown cankers on stems; girdling, leathery rotted areas on fruit near stems | fungus | Sanitation, rotations. Contact with wet soil causes rot so add dry materials added to soil ie pine needles, shredded bark, woodchips is helpful (also keep from direct contact w/ stems so insects don't hide out) |
| Fusarium | Yellowing , withering throughout | fungus | Use resistant varieties, long rotations |
| Verticillium | Yellow-brown areas on leaves, midday wilt, leaves drop, first at base | fungus | Use resistant varieties or long (7 year) rotations |
| Aphids * | Tiny green, black, pink, gray soft-bodied insects | sucks sap from plant and can transmit disease | Wash with strong water spray (allow foliage to dry before nightfall); encourage beneficial pests |
| Colorado Potato Beetle | Leaf damage | black and yellow stripes that lay yellow eggs beneath leaves | Handpick; [Carbaryl], |
| Flea Beetle | pinholes in leaves while feeding | Early season tiny dark beetles that make | Handpick; [Carbaryl] |
| Hornworm | Damaged leaves and fruit invasion | Large 3-5-inch green worm with white lines on its side and reddish horn at rear | Handpick; [Carbaryl; Dipel] |

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| White flies, leaf miners, red spider mites | Rotted leaves, wilt | Insects on leaves, stems, hiding in debris | -remove hiding places ie holes, debris, weeds, raking soil to deter slugs -plant French marigolds |
| Psyllids* (common in Eastern Colorado) | Yellow leaves, purply veins and distorted stems. Sugary-like secretions. | Yellow/green aphid-like insect that injects toxin into plants | Dust foliage, especially undersides. Proper ventilation, soil health, sanitation, rotation |
| Over-fertilization and deficiencies * | Catfacing (see below); purpling | -excess nitrogen -phosphorus lacking | -careful mulching and attention to soil health, crop rotation -transplant at proper time |
| Catfacing* | faded blossom sticks to ripening fruit | deformity in cool, cloudy weather and weather extremes | -tomato contact with wet soil causes rot, so dry materials added to soil ie pine needles/shredded bark/woodchips are helpful (also keep from direct contact with stems so insects don't hide out and rot) -don't plant in low-lying places like foot of hill |
| Sunscald* | greenish-white patches, rot | External damage that can eventually cause rot, also visible above | -don't over-prune -mitigate extreme weather, ie selective planting, spray-downs |
| Splitting and cracking* | | - usually from extreme water (natural and overwatering) and temp changes * | -drip irrigation ideal because prevents fluctuations which cause splitting, softening, and rotting (blackened) -use spray-downs if very hot, with enough time to dry before nightfall |

Also see for GG:

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| Spotted wilt and bacterial cankers in Colorado* | Fungus and bacteria | Spotting, often brown or white; rotting | Difficult to distinguish, attribute and treat, see http://www.ext.colostate.edu/pubs/garden/02949.html |
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