Leaf Roll: Edges of leaves curl to form cups that are firm and leathery to the touch. Make sure that your soil is well-drained and aerated to prevent this condition.
Verticillium & Fusarium Wilt: Causes leaves to curl up, turn yellow, and drop off. Dispose of infected plants in sealed containers; throw away with household garbage.
Blight: Dark sunken areas form on leaves as first fruits start to mature (Early). Black, irregular water-soaked patches on leaves, dark spots on fruit (Late). Destroy or dispose affected plants. The best defense is to plant disease resistant cultivars.
Blossom End Rot: Fruit forms water-soaked dark spot on the blossom end of the tomato that can eventually take over half the affected fruit. This is mostly caused by calcium deficiency or uneven soil moisture. Blossom end rot can also be caused by damaged feeder roots from careless transplanting. When planting, use mulch to help with moisture; handle seedlings gently.

COMMON PESTS

Flea Beetles: They feed on tomato foliage early in the season. Plant hardened, larger, sturdier transplants in warm soil as prevention. Cultivate your soil in the fall or early spring to disturb the overwintering adults. Cover seedlings with floating row covers. If absolutely necessary, you can spray with **pyrethrum** for control.
Tomato Hornworms: Can be controlled by hand-picking them off the plants, or applying the selective bacteria *Bacillus thuringiensis* **(Bt).**
Snails and Slugs: These ubiquitous garden gastropods will feast on fruits too close to the ground. Trellis your plants to avoid losses.

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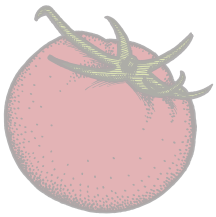
TOMATOES 101

A Basic Primer on a Garden Favorite



Nothing quite compares to the satisfaction one gets from slicing into that first ripened tomato of summer...Unless of course you happen to be one of those misunderstood few who don't like tomatoes, in which case, this pamphlet isn't for you.

TYPES OF TOMATOES

Determinate- *Bush Habit***.** Fruit ripens all at once, making this a preferred tomato for food preservers who can or dry large quantities. Best choice for containers.
Indeterminate- *Vine Habit***.** Indeterminate tomato plants continue producing fruit until the plant is killed by frost. This type is preferred by home growers and local market growers who want ripe fruit that continues through the season. Requires trellising.

WHAT KIND OF TOMATO SHOULD I GROW?

There are countless varieties of tomatoes to choose from, all with different qualities, flavor complexities, colors, shapes, and uses. Try growing several varieties to find your favorite!

TOMATO SHAPES AND USES:

Beefsteak: Large, irregularly shaped, with dense flesh.
Slicer: Round, main crop tomatoes, also called globe; great for sauces and eating fresh.
Cherry: Small cherry-sized fruits that are great for fresh eating or for drying.
Grape: Small oval-shaped fruits that are smaller than cherry tomatoes with firmer, thicker skin.
Saucing/paste: Comes in many shapes and sizes, and the low gel content makes them great for pastes. Commonly Roma tomatoes are used for this purpose.

OPEN-POLLINATED VS. HYBRIDS:

Open-Pollinated Varieties: An open-pollinated variety has no restriction on the flow of pollen between individual plants, eventually creating more genetically diverse species with variation that allows plants to adapt to local climate and growing conditions. If pollinated within the same variety they

will generally breed true to type year after year, so saving the seed of an open-pollinated plant will result in plants of the same variety.
Heirloom tomatoes are all open-pollinated, but not all open-pollinated varieties are heirlooms.
Heirlooms, aptly named, are generally varieties passed down through generations (usually 50 years or more) and are selected by farmers for specific characteristics. The fruit size, yield, and harvest times can vary and are less predictable than in hybrid varieties.

Hybrid Varieties: Hybrid tomatoes occur when two plants of different varieties are intentionally cross-pollinated by growers to produce a resulting tomato that has the best traits of each parent variety. These varieties are created with plants of the same species or between very closely related species with reproductive compatibility. In this case, pollination is carefully controlled, ensuring that you are getting the characteristics that you want between the two.
The process takes years, and the result is usually a more disease resistant tomato, with larger size, yield, etc. Hybrids aren't a good option for seed saving, as the seeds are genetically unstable and offspring will be less vigorous and won't breed true to type. If you grow hybrids, you must purchase new seed every year.
However, hybrids can be stabilized over many years by growing with open-pollination, selection, and seed saving. A great and well loved example of a hybrid tomato variety is the ever-delicious Sun Gold cherry tomato. Yum!

PLANTING TOMATOES

Site Preparation: Tomatoes are a warm weather crop; they require a location with full sun (at least 6 hours/day) and slightly acidic, well-draining soil rich in phosphorus and calcium. *A pH of 6.2-6.8 is best.* Two weeks before planting seedlings, mix a layer of aged compost or fertilizer into the soil. Adding a handful or two of ***Down To Earth's Bone Meal 3-15-0*** into the soil will ensure slow release of phosphorus and calcium, which can help prevent calcium deficiency later on (see blossom end rot under tomato problems). Amending your soil with ***Oyster Shell Flour*** or ***Lime*** will also help to avoid blossom end rot. Avoid high-nitrogen fertilizers which will give you beautiful leafy tomato plants, but fewer blooms and fruits.
Seed: Start seeds indoors 6-8 weeks before the average last spring frost date. Keep seedlings warm and well-ventilated during this time.
Transplanting: Harden off your transplants in a sheltered location outdoors, and bring them in for the night for at least 7-10 days before you want to plant them. Tomatoes have a narrow temperature range for setting fruit. Ideal temperature is crucial to avoid problems. Plant transplants after danger of frost has passed when night temperatures are consistently 50-55˚ F. *You'll want soil temperature to be at least 60˚ F*. They need warm (not hot) days of 70-80˚ F. If there is danger of late frost, protect plants with cloches. Early cold damage can cause blossoms to drop and prevent fruit from setting, reducing production for the entire season. Well- balanced fertilizer can go a long way towards growing healthy tomatoes. Blend ***Down To Earth's*** **All Purpose Mix 4-6-2** into the soil around the plant when planting.
Support: This can be done by either a traditional tomato cage, or any sort of trellising that can hold up the weight of a fruit laden tomato limb. Trellising keeps your precious fruits off the ground, preventing rot, keeping the plant dry, ripening more evenly, and keeps them away from slugs and snails.
Small Container Gardening: Tomatoes can be excellent in pots if you've got a small space to work with. *Minimum pot size is 7 gallons for a tomato plant.* Just make sure you have lots of sun, a rich potting mix, and always water deeply at the roots.
Watering: There are two basic rules to keep in mind regarding watering:
1. Never water plants overhead. Moisture on the plant can lead to diseases and fruit cracking.
2. Water the surface evenly, and deeply. Mulches at the base of the plant help immensely with keeping soil moisture more consistent, and as a bonus they help keep down weeds.
Harvesting: When your fruit reaches peak ripeness, cut or gently twist the fruit off while supporting the vine to avoid any damage to the plant. At the first sign of a heavy frost, harvest all your tomatoes at once, including the green ones. Mature green tomatoes can be ripened in a dark, warm area (60-75˚F). Placing green tomatoes in a bag with a banana will help trap ethylene gas and hasten the ripening process. Any green tomatoes left over can be battered and fried, or be made into end of the year pickles!

Unfortunately, there are always things that can go wrong and lay best efforts to waste. Listed are a few common issues, and how to prevent or treat them.

DISEASES AND PROBLEMS

Catfacing: Puckering, scarring, and holes near the blossom end are caused by cold temperatures when flower buds are forming. Avoid planting too early to prevent this.
Cracking: Radial cracking (from stem to blossom end)is caused by high temperatures and bright light, or concentric (around fruit) when rain follows a dry spell.
Sunscald: Too much sunlight causes a blistered, shiny light area on the sun side of the fruit due to losing too many leaves through over pruning or disease.