

TOMATO-GROWING TIPS FOR LINCOLN COUNTY

Choose early-maturing varieties. The warm part of our growing season is short, so tomatoes have to grow and mature quickly if they are to ripen a crop. The seed packet, catalogue description, or plant label will show the number of days to maturity; choose varieties with the lowest numbers. These will be the earliest to bear fruit, but remember that the actual ripening time will depend on the microclimate in your garden.

Look for varieties that perform in cool conditions. Garden tomatoes are bred from wild plants that are subtropical, and they prefer warm growing conditions. There are some cool-tolerant varieties that grow and set fruit in cool weather. These varieties are more reliable for local conditions, because they are able to ripen good crops in our typical growing season. Some cool-adapted varieties are Glacier, Stupice, Northern Delight, Santiam, Siletz, Early Cascade, and Oregon Spring. In marginal growing conditions, indeterminate small-fruited varieties (cherry, plum and "salad" tomatoes) often outperform large fruited types, possibly because they have more of the tough qualities of the wild ancestral tomatoes.

Choose determinate varieties for containers and cloches. Tomato plants have two growth patterns: *indeterminate* and *determinate*. Indeterminate plants are like the ancestral form; they are trailing plants that send out flowers on side shoots as the plants continue to grow. These types will keep elongating and flowering until killed by frost. They are generally later to start ripening fruit but produce over a long period, an asset in long growing seasons. Unfortunately in local conditions, indeterminate varieties may begin to bear so late in the season that much of the potential crop is never realized. They are usually large plants, and will soon outgrow the limited space under an cloche or row cover. Determinate varieties are also called bush types, and because they are shorter, fit better in limited space. These plants grow vegetatively for a while but then stop elongating and change to flowering and ripening fruit. They bear their fruit over a much more compressed season, handy for canning or preserving, and often better for short season gardens, since there is a greater chance of getting most of the crop to ripen before cold weather.

Use healthy transplants and harden them off before planting. Healthy transplants are stocky, bushy and deep green. Pass up plants that are tall and leggy, that have light green or purple-tinged foliage, or that show any signs of disease. Whether purchased or grown at home, transplants must be hardened off to gradually accustom them to outside conditions and avoid transplant shock that will delay growth. Don't set them out too early, no matter how tempting - if the weather turns chilly as it is likely to do, the young plants will need some protection or their growth will be checked by exposure to the cold, resulting in delayed flowering and fruiting. Some local gardeners use water-filled teepees or hotcaps over young transplants to keep them warmer.

Maximize warmth. Create the warmest possible microclimate for your tomatoes by trapping solar heat. Gardeners with greenhouses may choose to grow their tomatoes in the greenhouse. Gardeners in warmer microclimates may have success with growing tomato plants in large containers set against a sunny, protected south- or west-facing wall or other protected, warm location. Those who are most successful with growing tomatoes in the garden use cloches or row tunnels over the plants to collect additional heat. Plants should be grown under covers for the entire season in cooler microclimates. In warmer gardens plants can be uncovered during the day after summer weather arrives. Mulching the soil with plastic film, either black or IRT (infra-red transmissive), will provide extra warmth around the roots and improve growth. Red selective-reflecting plastic film also warms the soil, and in USDA tests has been shown to increase tomato yields 12-20% when compared to black plastic.

Special technique for cloches: Shake your tomato plants! Tomato flowers are self pollinating, but they require vibration to shake the ripe pollen onto the stigma. Normally the vibration is provided by wind, but in a greenhouse or under a cloche there may not be enough air movement to do the job. Some studies indicate that shaking the plants once daily during mid-day hours improves pollination and fruit set. This may not be necessary for varieties developed specifically for greenhouse production and for certain extra-early varieties, because they are *parthenocarpic* (flowers will set fruit without pollination).

Keep soil moist and plants dry. Tomatoes require plenty of moisture to produce those big, juicy fruits, so plan to water regularly and keep the soil in the root zone evenly moist. Soil moisture levels that fluctuate widely increase the incidence of blossom-end rot on the ripening fruit. Plastic mulches can help conserve soil moisture as well as warm the soil. When watering, apply water to the soil, not the foliage! In our area, fungal diseases of the foliage are the biggest threat to your tomato crop, and the fungus spores need moist conditions to germinate and begin the attack on the tomato plants. Plan to use drip irrigation or soaker hoses on your tomatoes, and save the overhead sprinklers for the lawn. Cloches and row covers keep rain and fog off the plants, so have the advantage of keeping foliage dry. If your plants are grown in the open, cover them during rainy periods.

Prevent fungal diseases before they strike. In Lincoln County, there are three major fungal diseases on tomato plants and all can devastate your crop, or at least severely reduce the yield. *Gray mold* or *Botrytis blight* attacks a wide variety of plants, often when they are cold-stressed. On tomatoes it is likely to show up in cooler gardens during early and late parts of the growing season, and it often attacks stems of flower clusters and developing fruit, causing them to drop. It appears as dark areas on stems that turn fuzzy grayish after a few days. *Early blight* spores are soil-borne, so the disease usually shows up as small brown spots on the lower leaves. The spots enlarge rapidly until the leaves shrivel, and the disease spreads gradually up the plant and eventually attacks fruit, causing it to rot. Early blight prefers warmer, humid conditions so is more likely to be a problem in greenhouses and under cloches and row covers. *Late blight* can strike at any time the weather turns cool and wet. In recent years it has been especially troublesome throughout the Pacific Northwest. This fungus usually attacks stems and leaves on the upper plant and spreads so rapidly that the gardener may not notice a problem before the entire plant collapses in a mass of blackened foliage. Most or all of the crop may be lost. It is very likely that at least one of these diseases will appear on your tomato plants, and infected plants cannot be cured - all the gardener can do is to try to limit the spread of the disease and hope to harvest some of the crop. The good news is that all three diseases can be prevented. Provide the best growing conditions possible for your plants so they are healthy and vigorous. Space the plants to allow for good air circulation. Check the plants often for any signs of disease, and remove and destroy diseased foliage promptly. Use preventive fungicide sprays labeled for use on tomatoes regularly (every 7-14 days) throughout the growing season to stop disease before it starts - remember that plant tissue already infected by fungus cannot be cured. Fixed copper sprays prevent late blight on tomatoes, and neem oil sprays prevent early blight, gray mold, and possibly late blight. Both these products are accepted for organic gardening, and several brands are available in local garden centers.