Video of the Week:
Controlling Bagworms

VEGETABLES

Do Not Over-Fertilize Tomatoes

Though tomatoes need to be fertilized to yield well, too much nitrogen can result in large plants with little to no fruit. Tomatoes should be fertilized before planting and sidedressed with a nitrogen fertilizer three times during the season.

The first sidedressing should go down one to two weeks before the first tomato ripens. The second should be applied two weeks after the first tomato ripens and the third one month after the second. Common sources of nitrogen-only fertilizers include nitrate of soda, urea, and ammonium sulfate. Blood meal is an organic fertilizer that contains primarily, but not exclusively, nitrogen. Use only one of the listed fertilizers and apply at the rate given below.

- Nitrate of soda (16-0-0): Apply 2/3 pound (1.5 cups) fertilizer per 30 feet of row.
- Blood Meal (12-1.5-.6): Apply 14 ounces (1.75 cups) fertilizer per 30 feet of row.
- Urea (46-0-0): Apply 4 ounces (½ cup) fertilizer per 30 feet of row.
- Ammonium Sulfate (21-0-0): Apply 0.5 pounds (1 cup) fertilizer per 30 feet of row.

If you cannot find the above materials, you can use a lawn fertilizer that is about 30 percent nitrogen (nitrogen is the first number in the set of three) and apply it at the rate of 1/3 pound (3/4 cup) per 30 feet of row. Do not use a fertilizer that contains a weed killer or weed preventer. (Ward Upham)

New Potatoes

Many gardeners look forward to harvesting new potatoes this time of year. New potatoes are immature and should be about the size of walnuts. Pull soil away from the base of the plants to see if the tubers are the desired size. If they are, dig entire plants and allow the skins of the exposed tubers to dry for several hours before gathering.

These young potatoes are very tender and prone to the skin “slipping” unless they are given a few hours to dry. Even then these immature potatoes will not store well.
Red-skinned varieties are often preferred as they are the earliest to produce. (Ward Upham)

**Tomato Leaf-Spot Diseases**

Two common leaf-spot diseases will likely appear on tomato plants soon if they haven’t already. Septoria leaf spot and early blight are both characterized by brown spots on the leaves.

Septoria leaf spot usually appears earlier in the season than early blight and produces small dark spots. Spots made by early blight are much larger and often have a distorted “target” pattern of concentric circles. Heavily infected leaves eventually turn yellow and drop. Older leaves are more susceptible than younger ones, so these diseases often start at the bottom of the plant and work up. Mulching, caging, or staking keeps plants off the ground, making them less vulnerable. Better air circulation allows foliage to dry quicker than in plants allowed to sprawl.

Mulching also helps prevent water from splashing and carrying disease spores to the plant. In situations where these diseases have been a problem in the past, rotation is a good strategy. It is too late for that now, but keep it in mind for next year. Actually, rotation is a good idea even if you have not had problems in the past. But many gardens are too small to make it practical. If you have room, rotate the location of the tomatoes each year to an area that has not had tomatoes or related crops (peppers, potatoes, eggplant) for several years.

If rotation is not feasible, fungicides are often helpful. Be sure to cover both upper and lower leaf surfaces, and reapply fungicide if rainfall removes it. Plants usually become susceptible when the tomato fruit is about the size of a walnut. Chlorothalonil is a good choice for fruiting plants because it has a 0-day waiting period, meaning that fruit can be harvested once the spray is dry.

Chlorothalonil can be found in numerous products including Fertilome Broad-Spectrum Landscape and Garden Fungicide, Ortho Garden Disease Control, GardenTech Daconil, Bonide Fungonil and others. Be sure to start protecting plants before these diseases are first seen if they have been a problem in the past. It is virtually impossible to control these diseases on heavily infected plants.

If chlorothalonil doesn’t seem to be effective, try mancozeb (Bonide Mancozeb Flowable). Note that there is a five-day waiting period between application and when the fruit can be harvested.

You may wish to pick some tomatoes green just before you spray if you use Mancozeb as the tomato fruit will ripen inside. (Ward Upham)
FRUIT

Strawberry Bed Renewal

Next year's strawberry crop will be affected by what you do to this year's strawberry bed. The sooner after harvest the patch is cleaned up, fertilized and irrigated, if possible, the better the chance of getting a good crop next year.

One of the main goals in renovation is to provide a high level of sunlight to plant leaves so they can manufacture the food the plant needs. If leaves have disease spots, remove all the leaves in the bed. Removing, these diseased leaves and weeds will cause new, non-diseased leaves to develop and remove competition from weedy plants. Hedge shears or even a mower can be used. Be sure the mower blade is high enough to avoid the strawberry crowns.

It is also important to reduce the number of strawberry plants so they do not compete for light, moisture and nutrients. If you have a small bed, you can hoe out or pull some plants so they are spaced about 4 to 6 inches apart. On large beds, adjust a rototiller so you can till between the rows, and cut each row back to about 10 inches wide.

The next step is to fertilize the plants with about 3/4 to 1 pound (3 to 4 cups) of a complete fertilizer such as 13-13-13 (nitrogen, phosphorus and potassium) or an equivalent on each 25 feet of row. If a soil test shows adequate levels of phosphorus and potassium, use 3/4 pound (1.5 cups) of a 16-0-0 (nitrate of soda) fertilizer per 25 feet of row instead. If nitrate of soda is unavailable, use the lawn fertilizer that contains about 30% nitrogen such as a 30-0-3, 28-0-3 or something similar. Make sure the lawn fertilizer does not contain a weed killer or preventer. These fertilizers should be used at the rate of 3/4 cup per 25 feet of row. The next step is to irrigate to wash the fertilizer into the soil and provide moisture for the rapid growth of the strawberry plants. When the soil is dry, apply about 1 inch of water. A garden sprinkler can do a good job applying the water.

Controlling weeds and watering throughout the summer are important so plants are vigorous when fruit buds begin to develop in September and October. (Ward Upham)

Fruit Reminders

A winter cold snap, late frosts and hail have damaged some of our fruit crops this year. However, some of the following tips apply to trees or vines even if they won’t have fruit.

* Remove some fruit from heavily loaded apples and peaches (if the flower buds weren’t killed by frost) to improve fruit size and prevent limbs from breaking. Apples and peaches should be space about every 6 to 8. Note that is an
average spacing. Two fruit can be closer together if the average is correct.

* Remove sucker growth from the base of fruit trees and grape vines.

* Remove water sprout growth from fruit trees. Water sprouts grow straight up from existing branches.

* "Comb" new growth on grape vines so these new shoots hang down for greater exposure to sunlight.

* Continue disease and insect control to prevent fruit damage. (Ward Upham)

**FLOWERS**

**Pinching Mums**

Though some garden mums do not require pinching back, most varieties will benefit. Pinching is done by removing the top inch of growth by pinching it between your thumbnail and forefinger. Pinch to just above where a leaf is attached. Pinching encourages lateral buds to break and grow resulting in a shorter, sturdier and fuller plant. The first pinching is usually done when the mums reach six inches in height. A second pinching should be done when the new growth from the previous pinch reaches six to eight inches. Usually that is all we have time for because the last pinch should take place before July 15. Pinching later than that can delay flowering resulting in a shorter time of flowering before frost kills the blooms. (Ward Upham)

**MISCELLANEOUS**

**Soil is Full of Diverse Microbial Lifeforms!**

Sometimes we think of bacteria, fungi, nematodes, and other soil microbes as pests, a fungus infecting your tomatoes for example, but they are not all bad and they all have their own role in the soil food web. In fact, beneficial bacteria and fungi help to decompose many nutrients that would otherwise be unavailable for plants to use. Some bacteria and fungi even have specialized interactions with certain plant roots, where they exchange nutrients to help one another grow. “Building Better Soil for Better Crops” states that mycorrhizal fungi, a group of beneficial fungi attached to plant roots, can help improve water/nutrient uptake, nitrogen fixation, and can even help plants suppress soil borne disease, parasitic nematodes, environmental stresses, and nutrient deficiencies. Soil is mostly made up of non-plant parasites, although some fungi, bacteria, and nematodes infect plant roots. These plant parasitic organisms can cause damage to our beloved plants, but the soil ecosystem is highly diverse and complex where plant parasites are not the only parasites living in the soil. Nematodes, for example, are mostly
fungal and bacterial feeders, not plant feeders. We need microorganisms in our soil and without them plant life would not be able to exist.

For more information about soil microbes, follow this link ([https://bit.ly/2x31l2N](https://bit.ly/2x31l2N)) to the “The Living Soil” chapter in “Building Better Soil for Better Crops” and watch this video ([https://bit.ly/2icXS5f](https://bit.ly/2icXS5f)) provided by the NRCS. (This educational series is made available partially by the North Central SARE Program). (Chandler Day)

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