

Don't Despair Over Lost Tomatoes by Terry Brite DelValle

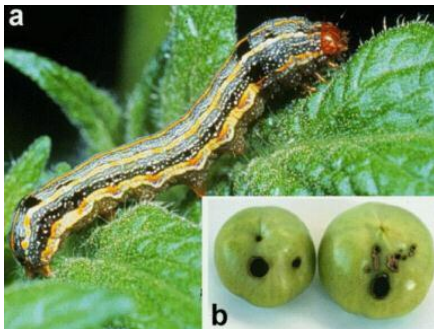
special to Times Union for May 23, 2009

Tomato plants are loaded with fruit and some avid gardeners are already enjoying the fruits of their labor. More people are trying their hand at gardening and unfortunately, tomatoes are not the easiest vegetable to grow in our area so a little knowledge on some of the potential problems might be helpful.

One common problem with tomatoes is blossom end rot. This is not a disease but is a nutritional problem. The blossom end of the fruit develops a light green to brown sunken area which eventually rots. Blossom end rot is caused by a lack of calcium to the fruit. Calcium may be limited in the soil or it may be present but inconsistent watering can limit the availability to the plant. Avoid this problem by maintaining the proper soil (6.5 to 7.0) and supply sufficient water to avoid stress to the plant. Use pine straw or leaf mulch to help improve moisture retention. Remove affected fruit and apply a couple of applications of a calcium chloride spray to developing fruit. Blossom end rot is often more severe when using too much nitrogen so don't overfertilize.



Insects seem to love tomatoes. Hornworms, armyworms, flea beetles, and cucumber beetles feast on leaves while armyworms, pinworms and stinkbugs favor the fruit. The most common insect pests on tomatoes are caterpillars and leafminers. Caterpillars are easily controlled by handpicking or treating with bacillus thuringiensis (Bt sold as Dipel or Thuricide). Leafminers are more difficult to control because they are protected within the leaves so pesticides are not very effective. One-eighth inch long adult flies (adult leafminer) inject eggs into the tops of leaves and a small yellow maggot feeds creating tunnels in leaves for about eight days. They drop down into the soil to pupate and repeat the cycle. The most effective control measure is to remove the affected leaf to break the cycle and reduce the numbers.



Heavy rains were a welcome event for landscape plants but some gardens were saturated. Because plants are unable to take up water when there is no oxygen around the roots, plants wilt. If plants continue to wilt, the root system may be permanently damaged.

If standing water was not a problem but tomato plants are wilting, now is the prime time that tomato wilt diseases show up. There are four main wilt diseases that affect tomatoes in our area. They include bacterial wilt, fusarium wilt, verticillium wilt, and tomato

spotted wilt virus. Of these, bacterial wilt is the most common. With bacterial wilt, plants wilt without leaf yellowing, dry up and die within 3 to 4 days. The inner stem becomes water soaked and turns brown preventing water movement from the roots to the top. Bacteria overwinter in soil and are carried from one plant to another by water or the gardener (tools, soil). One way to determine if you have this disease is place the lower end of the cut stem in water. Within a few minutes, streams of gray-brown bacteria flow into the water. This disease infects members of the nightshade family that include tomatoes, eggplants, peppers and potatoes.



Fusarium wilt is a fungal disease and symptoms are different from those of bacterial wilt. Plants experience a slow death and there is yellowing of the plant in phases. First the older leaves turn yellow, typically on one side of the plant and one side of the leaves. Gradually the yellowing moves up the plant and leaves wilt and die. The vascular tissue (area between the center and outside of stem) of stems and petioles turn brown to reddish-brown. The fungi overwinter (lives from year to year) in the soil, affect tomatoes only, and enter through plant roots. Conditions that favor fusarium are light, sandy acid to neutral soils; low soil moisture, high potassium-low nitrogen levels, and low light. There are 3 races of fusarium wilt and resistant varieties are available.

Verticillium wilt is another fungal disease that overwinters in the soil and will infect tomatoes, potatoes, eggplants, peppers, strawberries and raspberries. Symptoms usually start at fruit set. Initially, older leaves turn yellow, shoot tips wilt slightly, and tips of leaves curl upward. The lower stem tissue is grayish in color. Later, yellow areas develop along margins turning brown in a V-shaped pattern. Affected leaves gradually wither and die. Plants do not usually die the first season but are stunted and fruit are small. Verticillium wilt is more of a problem in cooler weather and in soils that are alkaline (high pH) and heavy.



Tomato Spotted Wilt Virus (TSWV) was first identified in Tallahassee in 1999.



Symptoms vary but usually young leaves turn bronze in color and then form multiple small, dark spots. Growing tips may die or plants may be stunted with wilted leaves. Green fruit develop pale ring spots that are slightly raised and in concentric rings. With ripe fruit, concentric rings turn into shades of red and white or red and yellow. As with many plant viruses, the disease is spread by thrips, a small insect.

To control wilt diseases, remove and destroy infected plants immediately to prevent spread to adjacent plants. Do not reuse wooden stakes and if metal stakes are reused, sterilize them. Rotate tomatoes every growing season with other unrelated crops (beans, corn, cucumber/squash) and buy resistant varieties. For example, Southern Star (BHN 444), Amelia, and BHN 640 are varieties resistant to tomato spotted wilt virus.

Keep the garden free of weeds because they attract insects which transmit the viruses. Insecticidal soap sprays are effective on thrips and easy on beneficial insects. The use of UV-reflective mulch has helped control some virus diseases because the mulch disorients the insects so there are fewer pests affecting the crops. The best control method for the other wilt diseases is to avoid planting in infested soils. If these diseases have spread throughout the garden and resistant varieties are not available, grow tomatoes in containers to avoid these problems. For more information on troubleshooting tomato problems go to <http://erec.ifas.ufl.edu/tomato-scouting-guide/introduction/index.shtml>.