

ANSWERS TO YOUR TOMATO PROBLEM QUESTIONS

I have plenty of blossoms on my tomato plant but they don't seem to be forming any fruit. What's wrong and what can I do?

Tomato blossoms frequently fail to set fruit when the temperatures are unfavorable for their pollination and fertilization. Pollination and the resulting fruit set will not occur with most varieties when night temperatures are below 55°F or when day temperatures are above about 90°F. That's a pretty good description of what happens many summers in this area. We experience cold nights early in the summer and then we experience very hot daytime temperatures for several weeks.

You can help nature along by shaking or tapping individual flower clusters, or by vibrating the blossoms with an electric toothbrush or vibrator. This will help release the flowers' pollen during cool weather. Midday is the best time to do this task, since pollen is shed mostly on sunny days between 10 a.m. and 4 p.m.. During cool weather you can improve fruit by spraying the flowers with a hormone product available at many garden stores. Hormones, however, are not effective in improving fruit set during hot weather. You may also want to plant cold tolerant early varieties and heat tolerant later varieties of tomatoes to help avoid the problem and insure a crop of tomatoes.

What causes the leathery spot on the bottom of the tomato?

This problem is called "blossom-end rot." It occurs most frequently on the first tomatoes of the season and is characterized by a large, dry, brown to black, leathery area on the bottom end of the fruit. This blemished area is often flattened. The spot may be fairly small or involve the entire bottom half of the tomato.

Blossom end rot is not an infectious disease. It's a physiological problem caused by a calcium deficiency in the developing fruit. The deficiency is usually not due to a lack of calcium in the soil. Instead it results from rapid plant growth, which may have been stimulated by excessive nitrogen fertilization or dramatic fluctuations in soil moisture. Root damage from hoeing may also lead to blossom end rot. Certain varieties seem more prone to the blossom end rot than others. To avoid blossom end rot,

maintain even soil moisture, don't fertilize heavily, and cultivate carefully around you tomatoes when attacking weeds.

What causes the leaves of tomatoes to roll upwards?

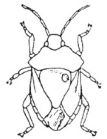
Scientists aren't sure, but they think leaf roll of tomatoes is a physiological response. Some researches have found that it's in response to moisture stress, while others have determined that plants which have a heavy set of fruit have a greater tendency to roll their leaves. Plants with a lighter set of fruit have less roll and so do poor-yielding varieties. Also, certain varieties are genetically predisposed to leaf roll, regardless of fruit set.

What can I do to prevent my tomatoes from cracking?

Cracking varies with the variety. Many newer varieties are resistant to cracking, but older large tomato varieties, such as Beefsteak, tend to crack more. Severe pruning seems to increase cracking on susceptible varieties. Plant crack resistant varieties and keep soil moisture uniform as the tomatoes develop to minimize this problem.

What causes the small, hard, irregular, cloudy white spots just under the skin of my ripe tomatoes?

The spots detract from the eating quality and the ease of peeling, but they're safe to eat. They are caused by the feeding of bugs, probably green stink bugs. To avoid the spots eliminate nearby weedy areas or ground covers early in the growing season. This is where the bugs breed and hide. When the bugs are already present and doing damage, there are pesticide sprays that will provide some control.



My tomato plants suddenly stopped growing, the leaves curled up and the plants died.

What's wrong?

The problem might be curly top virus. Curly Top is the same virus which also causes curly top of sugar

beets. The disease predicted to be severe in eastern Washington this year. Curly Top also attacks other crops including watermelon, bean, beet, spinach, squash, and pepper. The virus is disseminated only by the beet leaf hopper. The leafhopper takes up the virus in one minute of feeding on infected weeds but the maximum result is attained when the leafhopper is retained on infected leaves for two days. It is then able to keep the virus within its body for the remainder of its life and spread it to other plants, like tomatoes, that it feeds on. Tomato plants infected with Curly Top exhibit pronounced upward rolling and twisting of the leaflets exposing their undersurfaces; the leaves will be stiff and leathery; and there will be peculiar dull yellowing of the entire plant. You'll also see purpling of leaflet veins and stunting of the plant. Many of the roots and rootlets are killed. Severely affected plants will die.

There are no satisfactory methods of control. One suggestion is to set out tomato transplants when they're very small, in order to avoid severe leafhopper attack early in their growth. The sugar beet leafhoppers avoid shaded plants so shading tomato plants may help avoid leafhopper attack, but will also decrease tomato yields. Attempts to control the leafhopper with chemicals are not effective. However, varieties resistant to curly top have been developed. These include Payette, Owyhee, Super Star, Red Lode, Ida-Red, Parma, and Bi-centennial. Four resistant varieties were developed at the WSU Research Station in Prosser, they are Rowpac, Columbia, Roza, Salad Master. Consider using a resistant variety next year, if you lose your tomatoes to curly top.

Help, I have big green worms eating my tomato vines! How can I control them? I'd prefer not to use pesticides.

These sound like hornworm, a huge insect pest of tomatoes in area gardens. The hornworm is the immature or caterpillar form of an adult sphinx moth. The caterpillars start out small from eggs laid on the leaves by the female moth. However, they end up big and can reach four inches in length at maturity! They are green and have a distinctive horn on their rear end.



Unchecked, they voraciously feed on tomato leaves. They can completely defoliate a plant in several days.

They may also chew large pieces out of the green tomato fruit. Non-chemical control is easy depending on the delicacy of your sensibilities. Look for the hornworm at dusk. They're usually easier to see then. You can try to track them by looking for their large, black droppings on nearby leaves and on the ground. Handpick or snip the worms with shears. *Bacillus thuringiensis*, also known as B.t., thuricide, or dipel, is a biological insecticide that will control hornworm when they are small. However, when they reach the four inch size, you'd best recourse is a baseball bat .

There are bumps and growths on the stem of my tomatoes. What are they?

The bumps or woody areas along the lower stem of the tomato plant are called stem primordia. These are root initials that can develop into roots all along any tomato stem, regardless of its nearness to the soil. When they develop higher on the tomato plant, the problem is often related to excess moisture in the soil or it's a response to high humidity levels. The plant attempts to compensate for excess moisture in the soil by developing more roots. The bumps or root initials themselves are not harmful to the plant, but the excess soil moisture can lead to root rot or other root diseases.

If you have a section of your garden where the tomatoes are developing a greater number of primordia along the stem and the plants are also having wilt problems, then it's likely that the soil is too wet for some reason, such as poor drainage, too much watering or rain, etc. Remember that roots need air as much as they need water and excessively wet soil deprives them of that needed air. More plants are killed by overwatering than by underwatering so when in doubt - don't water as much and check soil moisture before watering.