

VEGETABLE GARDEN DISEASES AND TOMATO INSECT CONTROL

Vegetable garden diseases and insect problems can be accelerated by weather conditions and cultural practices. Once disease is present, control may be difficult. Prevention is the key to minimizing garden problems. The following tips may assist in helping to maintain a healthy food garden.

Avoiding disease is crucial because many diseases cannot be controlled with chemical, so resistance is your first line of defense. If possible, select disease-resistant varieties. Resistant plants are less likely to contract diseases than non-resistant varieties. You can plant varieties that are resistant to problems such as fusarium wilt, anthracnose, tobacco mosaic, and rust. Part of gardening entails becoming familiar with the pests to which your crops are susceptible. Knowing what they look like and the number which are present will help determine whether control is warranted and what approach is necessary. Sometimes handpicking insects when only a few are present prevents a population explosion and may be all that is necessary.

Controlling weeds not only improves appearance and gardening delight, it also helps eliminate disease hosts. Weeds can compromise air circulation and compete for water and nutrients. Weak plants are then a favorable host to disease and insects. Tilling or turning over the soil late in autumn exposes overwintering insects to fatally freezing temperatures. However, caution is urged to not over till the soil so as not to lose its structure and texture.

Watering should be done during the day, or early enough in the day so that the plant leaves have the opportunity to dry out before nightfall. If leaves are allowed to remain wet for most of the evening, disease may develop rapidly, and this can be a prime environment for the spread of fungal disease. Ideally, watering should be at the base of a plant keeping the foliage dry, regardless of the time of day the water is applied.

The vegetable garden should be rotated yearly. Whenever possible, don't grow the same vegetable in the same spot year after year. Many disease organisms live in the soil from one gardening year to the next. Crop rotation can break up the disease life cycle.

Rotate by family or individual variety, when possible. Closely related plants (family) are usually prone to the same problems. For example, the tomato family includes tomatoes, peppers and eggplants and consequently they get the same diseases. Another plant family are the cucurbits - cucumbers, melons and squash. Cole crops or cabbage,

broccoli, Brussel sprouts and cauliflower are grouped to move together in a rotation scheme. Likewise, root crops or leaf crops would be in another block. Pre-planning your garden plot to ensure appropriate annual rotation should be done before your shovel is picked up!

Before applying any chemical controls, the responsible gardener will make sure the problem is a disease treatable with chemicals. The disease needs identification to assess the appropriate control. Consulting with your local extension office, or garden center, to identify the disease or pest is of absolute necessity. Watch for predator insects. Ladybugs, praying mantis, predator mites and certain wasps eat or parasitize harmful insects. If these predator populations are high enough, they will control pests without the gardener having to resort to harmful chemicals. Some gardeners purchase predatory insects and release them in their garden. However, this may not be overly successful as the predator may wander off before the prey appears, leaving the garden undefended.

The tomato hornworm is a common insect that attacks tomatoes. This is a 2 inch long green homed caterpillar which feeds upon the leaves, weakening the plant. Another caterpillar, the green fruit worm, feeds on the green tomatoes tunneling into the fruit. These insects can be controlled by handpicking or spraying with *Bacillus Thuriengiensis* (also called BT). This is commonly sold as Dipel or Thuricide. This non-chemical control consists of bacteria which only affects the larvae of moths or butterflies. It will not kill any other insect or animal.

White flies, aphids and leafhoppers are sucking insects that attack tomatoes and their relatives. Trapping is a non-chemical way to control these pests. Wooden sticks may be painted brilliant yellow and coated with Tanglefoot or a similar sticky compound. Place several stakes amongst the plants. The insects are attracted to the bright yellow and will become stuck on the stakes that may then be removed and destroyed. If chemical control is needed, directions should be followed closely to ensure adequate time between spraying and ingestion of the harvest.

The **Master Gardener Hotline** is open from April to October, Monday through Friday. Lines are available 9:00 am to noon and 1:00 pm to 4:00 pm at 888-678-3464

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