

Tomato Fruit Set Problems

by Kim Gabel, Environmental Horticulture Agent
UF/IFAS/Monroe County Extension

Have you had a tomato fruit set problem in your garden? Failure of tomato plants to set fruit is the most common question received at the Monroe County Extension Office. All too often gardeners grow healthy vigorous plants with an abundance of flowers that drop off before turning into delicious vine ripe tomatoes. The reasons for fruit drop are due to environmental conditions such as temperatures, shading, drought, or fertilization problems.

High Nighttime temperatures. The set of tomato fruit is determined long before the bloom appears. The first two clusters are affected when the first and second leaves are only an inch and a half long. Tomato fruit set is sensitive to high night temperatures. In the Florida Keys, nighttime temperatures need to be around 70° F for fruit set to occur. However, new varieties are being developed for handling higher night temperatures. Check out the Tomato Grower Supply Company catalogue www.tomatogrowers.com for tomato varieties that can take the Florida heat.

Low Nighttime temperatures. When night temperatures drop below 55-58° F, tomato varieties will not set fruit.

Excessive Nitrogen fertilizer. Tomato plants tend to initiate flower buds under normal conditions as soon as they have reached a certain size or age. This is the time of a changeover from a vegetative growth habit to a reproductive one. Generally, nitrogen applied in excessive amounts prior to flowering will cause the plant to continue vigorous vegetative growth rather than setting fruit. Examples of excessive nitrogen fertilization are growing tomato plants over septic drain fields or heavily manured beds.

Tomato production is usually best when only enough nitrogen is available during the first couple of months after planting to permit development of a large sturdy vine. Once the plant has a heavy fruit load and tomatoes begin to ripen,

the nitrogen requirements increase. If the nitrogen supply is not adequate at this stage of development, the plants will turn yellow and drop its leaves and the fruits will become exposed to sunlight and vulnerable to developing sunburn.

Excessive Shade. Tomato plants need a minimum of six to eight hours of sunlight to produce a healthy flowering plant. If you plant your tomatoes in a shady location, they will have a weak, leggy growth habit that reaches for the sunlight and produce fewer flowers.

Drought. If the plant doesn't received enough moisture, it will not flower or fruit. Tomatoes need about 1-2 inches of water per week. If rainfall is not sufficient, then water when the soil starts to dry out. For tomato plants in raised beds, a heavy soaking once a week should be sufficient. Apply the water in the early morning hours and only to the soil. This will allow the leaves to dry off, lessening the chance for plant diseases. And don't forget to mulch the raised bed. For containerized tomato plants, check the soil regularly and apply water as the top few inches dry out.