
Containerized transplants

The best containerized transplants are produced in the multi-cell or tray-pack system. Trays are made of plastic or styrofoam and produce a seedling root ball of various shapes and sizes. Little information exists on the most appropriate cell size to use. Larger transplants have been shown to produce earlier yields, but are more expensive to produce. The most economical and most manageable size for tomato seems to be a cell size surface area of approximately 1 to 2 square inches.

Containerized transplants should be produced in a greenhouse where growing conditions can be carefully controlled. Sterile trays and sterile, soilless mix (usually a peat/perlite mix) should be used. Filling and seeding trays is time-consuming and can be mechanized by various tray-filling and vacuum-seeding machines. Often seeding accuracy can be optimized by use of coated or pelletized seed. Once seeded and in the greenhouse, careful attention must be given to the transplant crop for water needs, fertility, and pest control.

Irrigation

All vegetable crops require adequate and timely irrigation and, where natural rainfall is lacking, supplemental irrigations must be made. On sandy soils, tomatoes require one-half to one inch of water per week during early growth and 1 to 1½ inches during fruiting. The subsurface (seep) irrigation system, which can maintain constant levels of moisture, is the least costly method of irrigation because of low capital investments, but it has a low water-use efficiency and is not available in all tomato production areas in the state.

Overhead irrigation is a very satisfactory method of irrigation for both mulched or nonmulched crops and requires less pumped water than the seep method. Salt injury is less likely on overhead-irrigated than seep-irrigated tomatoes because water movement is mostly downward. Often overhead irrigation is required in conjunction with seep, especially during hot, dry periods during which wetting of the beds by seep is difficult. There are several types of overhead irrigation systems including traveling guns, center pivots, movable pipe, and solid-set pipe. One disadvantage of overhead irrigation is the increased potential for spreading foliar disease organisms.

Drip irrigation has many merits and is becoming more popular for vegetable production. These merits include reduced water usage, the capability of fertilizing through the system, possible higher yields from a more constant water supply, and reduced foliar disease problems in comparison to overhead irrigation. Reduced water usage is a very important attribute and is the primary reason for drip system usage on farms located near metropolitan areas where water is in short supply.

Drip irrigation might be used satisfactorily in combination with other methods, particularly the seep method. Here, one attraction is the capability of providing the fertilizer through the drip system in small amounts through the season. Therefore, a grower could eliminate, or reduce the amounts of soluble, dry fertilizer in the bed at planting. This bed fertilizer can contribute to soluble salt damage to seedlings and might be lost to leaching.

Staking

The stake tomato culture system (Fig. 6) is used to provide tomato fruits higher in quality, and easier to harvest, than ground tomato. Stakes approximately one inch square and 48 inches long are driven into the ground. A stake is driven into the bed halfway between each plant (or alternating plants) two to three weeks after transplanting.



Figure 6. Tomatoes with newly placed stakes near Quincy, Fla.