

latter is often preferred because it does not leave a torn flap of plastic mulch behind which might damage young seedlings during windy conditions. The closed-jet burner type is preferred over the open-burner because the former can be used in windy and rainy conditions.

With the plug-mix system, it is necessary to apply water via overhead irrigation or water wagon every 2 days during hot weather until the seedlings are well-established. Watering also helps keep fertilizer salt concentration low in the seed area. Once established, seedlings are thinned to one to two plants per hill.

Tomatoes also can be direct-seeded in open ground. However, weed control and hand labor to thin seedlings present problems with this method. Early crops are difficult to achieve and stands are often less than optimum.

Transplanting

Most transplanted tomato crops are established with containerized transplants, although some bare-root transplants are used. Containerized transplants are placed in the field with the growing medium attached to the roots. Therefore plants suffer less transplant set-back than bare-root plants, resulting in more uniform stands. Also, the plants are less likely to wilt down onto the plastic mulch where they might be burned on sunny days by the hot plastic. Furthermore, semi-automatic transplanting machines require the presence of a small root/soil ball to function properly.

When transplanting, especially in cool soils, plant establishment might be enhanced by the use of small amounts of starter fertilizer solutions. Any fertilizer high in soluble phosphorus, such as 10-52-17, used at the rate of 3 to 4 lbs per 50 gallons of transplant water often stimulates early root development.

Bare-root transplants

Bare-root transplants should be grown from high-quality, fungicide-treated seed on fumigated, or virgin soil, that has been limed to pH 6.0 to 6.5. Small amounts of fertilizer (1-2-2 pounds of N-P₂O₅-K₂O per 1000 square feet) should be incorporated into the

seedbed. Irrigation must be available. Seed should be broadcast or sown in rows 6 to 8 inches apart with 20 to 30 seeds per linear foot. Protection from wind and frost should be made available through the use of plastic-covered structures, cold frames, or by various types of row cover materials. Ventilation should be provided on hot, sunny days. For recommendations on control of disease, insects, and nematodes, consult the appropriate Pest Control Guide and Plant Protection Pointer No. 25.



Figure 5. Direct-seeding tomatoes in Homestead with the plug-mix system.

Seedlings that are about 5 inches in height are ready to be transplanted. They should be loosened from the soil before lifting to minimize damage to the roots. Do not soak or irrigate the transplants after pulling because of the increased risk of disease organism spread. Provide shade and plant immediately.