

Where drip irrigation is used, before planting apply all phosphorus and micronutrients, and 20 percent to 40 percent of total nitrogen and potassium prior to mulching. Use the lower percentage (20 percent) on seep-irrigated tomatoes. Apply the remaining nitrogen and potassium through the drip system in increments as the crop develops. Start soon after planting with weekly amounts representing 2 percent to 4 percent of the total crop nitrogen and potassium requirements. Then increase the amount applied as the crop develops so that, at early fruiting, approximately 10 percent to 12 percent of the total nitrogen and potassium are applied weekly.

Additional nutrients can be supplied through drip irrigation if deficiencies occur during the growing season. Be careful not to apply excessive amounts of water with the fertilizer because severe leaching can occur.

Sources of N-P₂O₅-K₂O. At least 30 to 50 percent of the total applied nitrogen should be in the nitrate form for soil treated with multi-purpose fumigants.

Slow-release nitrogen sources may be used to supply a portion of the nitrogen requirement. On a trial basis, for overhead irrigated tomatoes, apply one-third of the total required nitrogen as sulfur-coated urea (SCU) or isobutylidene diurea (IBDU) incorporated in the bed. Nitrogen from natural organics and most slow-release materials should be considered ammoniacal nitrogen when calculating the amount of ammoniacal nitrogen.

Normal superphosphate and triple superphosphate are highly recommended for phosphorus needs. Both contribute calcium and normal superphosphate contributes sulfur.

All sources of potassium can be used, but the chloride (muriate) form should be used sparingly where soluble salt problems are likely. This might occur under the seep irrigation system or where irrigation water is already high in soluble salts. Potassium sulfate, sodium-potassium nitrate, potassium nitrate, and potassium-magnesium sulfate are suitable substitutes.

Crop establishment

Florida tomatoes can be grown using both direct-seeding and transplanting techniques. Field planting dates, rates, and spacing requirements for the major tomato production regions are presented in Table 5.

Direct seeding

Nearly all of the acreage of tomatoes on the Rockdale soil of Dade county, and some east coast areas, are direct-seeded through plastic mulch using the plug-mix method (6). In the plug mix seeding method, tomato seeds, fertilizer nutrients, and water are blended with a growing medium of 30 percent

Table 5. Field planting dates, rates, and spacing for tomatoes in Florida.

	North and West	Central	Southwest and Southeast	Date
Planting dates— Spring Fall	Feb.-March Aug.	Jan.-Feb. Aug.-Sept.	Dec.-Jan. July-Aug.	Sept.-Jan.
Seed to transplants (days)	24-42	24-42	24-42	24-42
Days to maturity— transplants direct seeded	70-90 90-115	70-90 90-115	70-90 90-115	70-90 90-115
Distance between rows (inches)	48-72	48-72	48-72	48-72
Distance (inches) between plants in row—ground stake	18-40 12-24	18-40 18-32	12-24 12-32	12-24
Seed required per acre (lb) direct seeded seedbed to plant 1 acre plug mix	1/3-2/3 1/4 1/4-1/2	1/4-1/2 1/4 1/4-1/2	1/4-1/2 1/4 1/4-1/2	1/4-1/2 1/4 1/4-1/2
Planting depth (inches) general plug mix	1/2 3/4	1/2 3/4	1/2 3/4	3/4

vermiculite and 70 percent peat. Mixing is done in cement mixers and the mixture is often allowed to stand in polyethylene bags for 24 to 48 hours prior to planting to allow the seeds to imbibe water and start the germination process. The mix is placed in the field by precision plug-mix planters at the rate of one-eighth to one-fourth cup of mix per hill (Fig. 5). The plug-mix system can be used in conjunction with open field or mulch culture.

Two types of plug-mix planters are available depending on how the hole in the mulch is opened. One type punches the hole while inserting the plug mix, the other burns a hole with a propane burner. The