

*College of Agriculture & Life Sciences*  
 Department of Horticultural Science

**FRESH MARKET TOMATO PRODUCTION  
 PIEDMONT AND COASTAL PLAIN OF NORTH CAROLINA**

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The tomato is a warm season crop. With special production practices you can produce your first tomatoes in 60 days. This crop can be grown for production from June through November by choosing the right varieties and production practices. Generally, tomatoes require a large investment in time and labor, but increase in intensity of management is repaid by increased yields and profits.

**Varieties\*** — There are many good tomato varieties. The choice of varieties is important to orderly production, earliness, shipping quality, and disease resistance. Here are some varieties which do well in your part of N.C., unless noted they are harvested as breakers.

- **Mountain Spring** — Very early, large fruit, very firm, determinate, very crack resistant, VF 1 & 2.
- **Sunrise** — Very early, large fruit, firm, determinate, VF 1 & 2.
- **Mountain Delight** — Early, large fruit, firm, determinate, less vigorous than Mountain Pride, crack resistant, VF 1 & 2.
- **Flora Dade** — (Called 908) mid season, large fruit, very firm, determinate, may crack, jointless, grey leaf spot, VF 1 & 2. (mature green)
- **Sunpride** — Mid-season, large fruit, green shoulder, extensive foliage (take only 2 suckers), very firm, determinate, crack resistant, VF. (mature green)
- **Colonial** — Mid-season, medium-large fruit, very firm, determinate, crack

resistant, excellent quality and yield, VF 1 & 2. (mature green)

- **Mount Verde** — Mid-season, large smooth fruit, very firm, determinate, crack resistant, VF 1 & 2. (mature green or vine ripe)
- **Royal Flush** — Mid-season, very large fruit, firm to soft, determinate, may crack, VF N.
- **Mountain Fresh** — Mid-season, large fruit, firm, determinate, crack resistant.
- **Mountain Pride** — Mid-late, very large fruit, very firm, vigorous determinate, very crack resistant, VF 1 & 2. Use reduced N fertilizer (100 lbs N/acre).
- **Piedmont** — Mid-late, very large, smooth, firm fruit, very crack resistant, similar to Mountain Pride, VF 1 & 2.

\*Disease resistance of various varieties are abbreviated as follows: V = verticillium wilt; F = fusarium wilt; race 1 or 2; N = nematode.

**Soils** — Select a well-drained soil with high organic matter. Test the soil for fertilizer and lime requirements and nematodes. A pH of 6.5 is best. If a nematode test is not done use a fumigant type nematicide.

**Fertilization** — Tomatoes use a lot of fertilizer. If soil is not tested, apply 400 to 600 lbs per acre of 10-20-20 in the coastal plain. In the piedmont more phosphate will be needed. While the coastal plain soils may not

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need this much phosphate, half the fertilizer should be broadcast and the remainder banded 6 inches on either side of the row and 4 inches deep before transplanting. Side-dress with 150 to 250 lbs per acre of 14-0-14 or 15-0-14 just after the first blooms set fruit and again 3 weeks later. Sandy soil may require 13-0-44 and/or a third sidedressing.

**Transplanting** — It is best to grow your own plants (See Bulletin AG-337, *Vegetable Transplants*). If this is not feasible, obtain plants from a certified plant grower. Transplant as soon as the danger of frost has passed or use sprinkler irrigation for frost protection. For early production use plants that have been grown in 3- to 4-inch containers.

**Starter Solution** — Water young plants with a starter solution. This is particularly important if bare-rooted plants are used. Commercial water-soluble fertilizers are available. Apply 1 cup of this solution per plant.

**Spacing** — The spacing depends on the variety, the training system, and the spray equipment. Rows are 4 to 6 ft apart. Determinate plants are usually spaced 18 to 24 inches apart.

**Weed Control** — Several good herbicides are available for pre- and post-plant applications. Check with your county extension agent for the latest recommendations.

**Plastic Mulch** — Black plastic mulch speeds maturity and increases yield. Methyl bromide can be used in conjunction with a plastic mulch. If plastic mulch is used, all fertilizer should be put down prior to laying plastic. If plastic is used drip irrigation will increase yields. Also, fertigation will help increase yield. (Consult Bulletin AG-502, *A Guide to Intensive Vegetable Systems* and AG-489, *Plasticulture for Commercial Vegetables*).

**Staking, Training, and Pruning** — Plants should be staked or trellised. For staking, drive a stake by every other plant leaving at least 4 ft of the stake above the soil level. Use plastic twine to form a support on both sides of the plant. The twine is wrapped around each stake. Consult Bulletin AG-405, *Commercial Production of Staked Tomatoes in North Carolina* for a complete description of the stringing process. Remove all suckers

up to the one just below the first fruiting hand. Remove suckers when they are small. Tomatoes can be grown without staking in the Coastal Plain but yields will be reduced.

**Irrigation** — Tomatoes need 1 to 1.5 inches of water per week either by rain or irrigation. A uniform water supply reduces blossom-end rot and results in higher yields and better quality. If drip irrigation is used it should be applied daily.

**Grading** — Radial cracks result from uneven water supply; cracking is reduced by certain varieties and uniform water supply.

**Insects** — Watch for flea beetles, aphids, colorado potato beetles, spider mites, and fruit worms. Consult your county agent for the latest control recommendations.

**Diseases** — Spray with recommended fungicides to control early blight, grey leaf spot and other foliage diseases. Spray once a week after first flowers appear. A spray pressure of at least 200 psi is needed for good coverage. (Use a sprayer with a piston or diaphragm pump)

**Harvesting and Packaging** — For shipping to distant markets, harvest fruits in either the mature green or breaker stage. For local markets, fruit should be allowed to develop more color. Package in the size container your market wants. Usually this is a 20-, 25- or 30-lb cardboard carton. Pack to assure uniform size, color, and quality.

Tomato Sizes	Diameter	Inches
Jumbo	4 x 5	3 x 3 10/16
Extra Large	5 x 5	2 14/16 x 3 6/16
Large	5 x 6	2 11/16 x 3 3/16
Medium	6 x 6	2 8/16 x 2 14/16
Small	6 x 7	2 4/16 x 2 10/16

**Yields** — If the crop is produced according to the steps outlined in this leaflet and no serious problems develop, the yield should be at least 10 to 15 tons per acre. Failure to do the job properly will seriously reduce yields. Some better growers exceed 20 tons/ acre — it depends on the job you do.

**General Comments** — To be successful with fresh market tomato production, you should select a good variety, grow your own plants, have your soil tested and apply proper rates of lime and fertilizer, fumigate for nematodes or use resistant variety, stake or trellis, spray with proper chemicals for disease and insect control, harvest on time, grade properly, and have a previously arranged market outlet.

### **10 Tips for Successful Tomato Production**

1. Find your markets before you plant the first seed.
2. Choose good varieties that spread your season.
3. Test soil for fertilizer and nematicide — follow recommendations.
4. Use large container transplants for early production.
5. Use your own or certified transplants.
6. Use a herbicide suited to your weed conditions.
7. Spray weekly with high pressure sprayer for disease control.
8. Prune early and string when needed.
9. Irrigate to control cracking and blossom end rot.
10. Pack uniform size and color fruit.