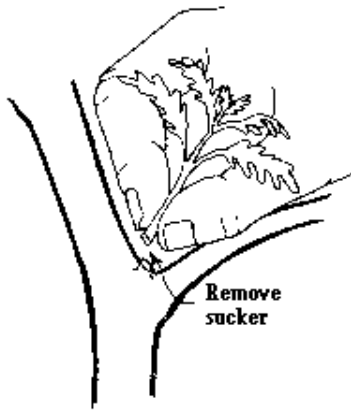


Staking And Training Tomatoes

The main reason for staking and supporting tomato plants is to keep plants and fruit off the ground. This reduces losses from fruit rots when fruit touch the soil and from sunburn when fruit are not shaded by foliage.

Supported plants are easier to spray or dust for insect and disease control and easier to harvest than those sprawling on the ground. Three popular methods of supporting tomato plants are staking, caging, and trellising.



Supported tomato plants are pruned (suckered) to reduce the number of branches, thereby making plants more suitable for the selected method of support. Plant type also determines the amount of pruning. Tomato varieties are divided into two general groups based on their pattern of growth.

Determinate, or self-topping, varieties have short to medium length vines. Plants are heavily branched and do not make continuous growth. Rather than having continuous production of leaves and flower clusters, every branch ends with a flower cluster. Determinate varieties are often early and have a short but concentrated production season. These plants are staked or caged but are not adapted to trellising. Some determinate varieties are Celebrity, Mountain Pride, and Sunny. Determinate varieties are not heavily pruned, regardless of the support system, because most of the fruit is produced on the branches.

Indeterminate varieties continue to grow and produce leaves and flower clusters until disease, insects, cold, or lack of water and fertilizer kills the plants. Indeterminate varieties are Better Boy, Floradel, and Big Beef. Indeterminate varieties are heavily pruned when trellised, moderately pruned when staked, and lightly pruned when caged.

Pruning removes small shoots where each leaf joins the stem. Properly pruned plants produce larger and earlier

fruit than non pruned plants of the same variety. Remove shoots when they are less than 4 inches long to avoid injuring the plant. The larger the sucker before removal, the larger the resulting wound, and the more wasted plant energy that went into the sucker. Remove a sucker by grasping it between your thumb and second finger and bending it to the side until it breaks. This is best done early in the day when plants are crisp and not wilted from the day's sun and heat. Do not cut suckers with a knife, since this is one way to spread virus diseases.

Decide on the method of support before setting tomato plants in the garden. Plants for trellising are set closer together than plants to be staked or caged. Plants for caging are set farther apart than plants for staking.

Staking

Staking requires wooden or metal stakes 5 to 6 feet long for indeterminate varieties and 3 to 4 feet long for determinate varieties. Wooden stakes should be at least 1 inch square. Metal stakes can be of smaller diameter and have the advantage of lasting many years. Do not use chemically treated wood. Sections of concrete reinforcing rods (rebar) make excellent tomato stakes.

Space plants 18 to 24 inches apart in the row and drive a stake next to every plant or every other plant. Place the stake 3 to 4 inches from the base of the plant on the side away from the first bloom cluster to prevent trapping the fruit between the plant and the stake.

There are many ways to prune and tie tomato plants. Limit staked indeterminate plants to two or three fruit-producing branches. A popular method is to select the main stem, the sucker that develops immediately below the first bloom cluster (a very strong sucker), and one other sucker below that. Remove all other suckers and as you tie the plants, periodically remove additional suckers that develop on selected branches. Tie individual branches to the stake with soft cord by first tying twine to the stake and then looping it loosely around the plant. Never tie a plant immediately below a fruit cluster, since the weight of the fruit may cause the plant to sag and strip the cluster from the plant. Continue to prune and tie the plant as it grows.

The Florida weave is an alternative system to support staked tomato plants in a row. Using nylon cord (it doesn't stretch), tie the cord to the first stake about 6 to 10 inches above ground. Run the cord to the second stake and wrap it around the stake once at the same level. Be sure to keep the cord tight. Repeat this process, going on to the third, fourth, and remaining stakes till you reach the end of the row. Come back with the cord on the opposite side of the

stakes, wrapping it around each stake. Plants are held in the space between the cords on opposite sides of stakes. Repeat this process as plants grow so the branches are always held between the cord. Three to five runs down the row should be enough for the season. Remember to keep pruning plants as they grow to reduce the amount of plant material that must be supported.

When staking determinate varieties, prune only once to remove the weak suckers.

Caging

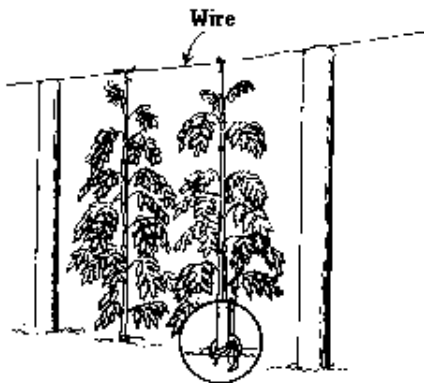
Tomato plants supported by cages made from concrete reinforcing wire require considerably less work than either staked or trellised tomatoes because there is no tying and only limited pruning. A 5-foot length of 10-gauge reinforcing wire with 6-inch openings makes a cage of about 18-inch diameter. Make cages at least 5 feet high for indeterminate varieties. Shorter cages are best for determinate varieties. Using heavy bolt cutters, remove the sections of the bottom horizontal wire, leaving wire legs to stick into the ground.

Set your tomato plants 3 feet apart in the row and place a cage over each plant. Push legs into the ground for anchoring the cage. Protect early plants from cold and wind by wrapping the bottom 18 inches of each cage with clear plastic. Black plastic mulch, in combination with caging and a clear plastic wrap, promotes earliness.

Caged plants are generally pruned to four or five main fruiting branches. As plants grow, keep turning ends of the branches back into the cages. Caged plants may not produce ripe tomatoes as early as staked or trellised plants, but they produce more tomatoes that are less likely to crack or sunburn.

Trellising

Trellising is limited to indeterminate varieties. Set plants about 1 foot apart in the row and prune to just the main stem or occasionally to the main stem and one strong sucker (the sucker originating just below the first bloom cluster). Remove all other suckers as they develop.



Build a trellis by setting support posts in the ground about 20 feet apart. The tops of the posts should be about 6 feet above the soil surface. Stretch a heavy wire or a piece of barbed wire between the tops of the posts and attach a

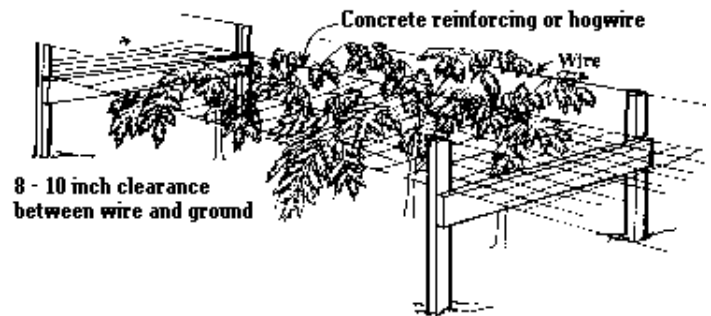
length of heavy twine to the wire above each plant. Barbed wire prevents twine from slipping as the top wire sags with the weight of the plants. Tie twine to the base of each plant or to a bottom wire if you use one. As plants grow, wrap them around the twine for support, or use the plastic clips that greenhouse tomato growers use. When trellising two stems per plant, use a separate cord for each stem.

Trellising produces ripe fruit earlier than other methods of support. Each plant produces fewer but larger tomatoes that are more subject to sunburn because of the small amount of protective foliage.

Tomato plants loaded with fruit are heavy. Anchor the posts to prevent collapse.

Other Wire Supports

Determinate plants not suited for standard trellising and staking because of their limited vine growth, and indeterminate plants as well, can be held off the ground by a wire trellis. Support 2- to 3-foot width of hog wire 8 to 10 inches above the ground with "H" supports. Center wire over the row and pull plants through an opening as they grow. Pruning and tying are not necessary. Space plants about 2 feet apart and the "H" supports 8 to 10 feet apart. A wire stapled to the top of the "H" on each side provides additional support to plants. Tightly stretch and fasten the hog wire at both ends.



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Information Sheet 560

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914.

JOE H. MCGILBERRY, Director