

## The Texas Rose Industry

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The Texas rose-plant producing industry had its beginnings in the mid-1800s in the northeast Texas area near Tyler. The first recorded sale of rose plants was in 1879, while the first train carload was shipped in 1917. By the late 1950s, over 20 million plants were being harvested yearly by almost 300 growers. Since that time, rose production has stabilized at around 8 to 10 million plants per year grown by fewer than 50 growers on approximately 800 to 1,000 acres within a 30-mile radius of Tyler. Texas produces 16% to 20% of the U.S. total. Arizona and California also have large centers for rose production.

The rose processing industry began to grow rapidly during the late 1940s and 1950s when growers started using cold storage facilities and plastic bags for packaging. In addition, the process of wrapping rose plant roots in paper and inserting them into plastic wrappers with the label was mechanized in the 1960s. Today, approximately 16 million plants are processed locally for mass market sales across the U.S. This figure includes the local production as well as plants imported from Arizona and California.

Another established segment of the industry that is still growing is the forcing of bare-root field-grown plants in containers. Approximately 2.5 million plants are shipped annually from the Tyler area in leaf or bud and bloom for garden center sales. Also, many of the bare-root plants that are forced in containers in other parts of Texas and the U.S. are shipped from Tyler area rose-processing companies.

The total wholesale value of the rose plant production and processing industries in northeast Texas is currently estimated at approximately \$50 million per year. This represents a large part of the estimated \$150 million in ornamental plant production found in the northeast Texas area.

As with any commodity, there are advantages and disadvantages to producing roses in northeast Texas. The sandy acid soils, relative abundance of rainfall (45 in. per year), and mild winters combine to give many advantages for field production. In addition, the central location of Tyler and proximity to major transportation corridors have aided the development of the processing industry. On the other hand, summer drought, short episodes of severe winter cold, early and late freezes and any problems with the supply of plants from western growing areas are the disadvantages that affect profitability of all phases of the industry. Because of the cost-intensive nature of and required skills for field production, few new individuals are entering the business. However, the industry still consists of many family-owned businesses. Though fewer in number, members of the younger generation are entering the business.

The two-year production cycle of a rose plant begins with land preparation. The summer and autumn prior to planting, a field is cleared of cover crops and weeds, deeply cultivated and fumigated. In addition, the soil is tested to determine the need for adjusting the pH with limestone and to insure that phosphorous levels are adequate. The field is then bedded in rows 44 in. apart.

Planting of rootstock cuttings begins in late November and December. Eight-inch cuttings of *Rosa multiflora* are cut with a saw from canes taken from plants in a field that has been in production for one year. All the buds except the top two or three are removed to reduce suckering. They are stored in plastic bags until planted and can be held at 35°F for as long as two weeks if necessary. Just prior to planting, the beds are shaped, opened slightly by slicing vertically with a coulter and marked with a rolling cylinder consisting of cross bars spaced on the cylinder at the desired width for spacing. As soon as possible after preparation, the cuttings are planted 6 to 7 in. deep and 6 in. apart. After planting, the beds are sprayed over the top with a preemergent herbicide to reduce the growth of winter annual weeds.

The following late winter and early spring, the sides of the beds are lightly cultivated to aerate and to begin leveling the field. By mid- to late April when the rootstock plants have shoots 6 to 12 in. long, the beds are removed by scraping the soil with bars running 1 to 2 in. on either side of the row. The soil remaining between the plants in the row is then blown out with a blower attachment mounted on a tractor. The field is then level and the shanks of the rapidly growing rootstock plants are exposed.

By May, the rootstock plants are ready for T-budding. A team of two persons performs the operation with one doing the actual budding followed by another who does the tying. The standard T-budding technique is followed using budwood harvested the previous autumn (see below). Budding rubbers are tied with only the bud itself exposed to light and air. After budding, a pre-emergent herbicide is applied to the soil to prevent summer weed growth.

During the summer after budding, the main task is weed control using herbicides, cultivation, and hand weeding. Some of the scions begin to grow at this time, but most growth is made by the rootstock. By autumn the rootstock canes are large enough to harvest for cuttings to begin the next crop. In late Autumn, soil is thrown to the plants by disking to protect the graft union from freezing. This practice also aids in weed control when the field is releveled in late winter.

In late winter, the rootstock tops are removed with a cut made slanting away from and just above the graft union. This is done manually or with pneumatic shears. The tops are mechanically chopped and blown back over the field. A preemergent herbicide is then applied. A balanced fertilizer is applied in two or three applications from April to June. Also, the rapidly growing scions are topped by mowing periodically during April and May to decrease damage from wind and to increase branching from the graft union.

The main task during the second growing season is weed control, as described above, and disease control. Black spot is the most devastating disease. Roses must be sprayed with a fungicide weekly from March until harvest.

As the crop matures in the second autumn, budwood is harvested for use the following spring. Mature wood about pencil size from the upper canopy is cut, wrapped in wet newspaper, wrapped in plastic, boxed, and placed into cold storage at 30±1°F.

Digging usually begins in November when starch tests indicate a high level of starch in the dormant canes. This test is also used to aid timing for budwood collection. Prior to digging, the plants are mowed to about 18 in. A shaker digger with a U-shaped blade is then used to remove the plants from the ground. Crews manually bundle the plants by groups of 10 and load them onto a truck. After the

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load is tarped, the plants are taken to a processing facility where they are unloaded, graded, dipped into a fungicide, and placed into cold storage by cultivar and grade.

As needed, plants are removed from cold storage and either shipped bare-root for potting and forcing or packaged. For packaging, plants are either placed in a wrapped-root plastic sleeve or are planted in a degradable pot and slipped into a plastic wrapper. For both packaging methods, canes are dipped in a hot wax developed for roses to prevent moisture loss. Marketing begins in January in the southern United States and continues until May in the northern United States.