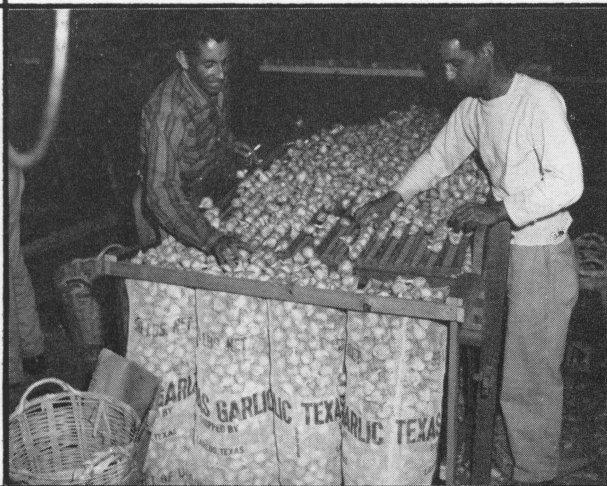


Growing Garlic in Texas



Growing Garlic

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GARLIC IS AN IMPORTANT VEGETABLE crop in the United States. In 1958, the reported production for the United States was 20,300,000 pounds which sold for an average price of \$10.32 per hundred-weight. During the same period approximately 35,000,000 pounds were consumed. The difference of approximately 15,000,000 pounds was made up through imports.

The latest estimate of acreage for Texas was 300 acres in 1952. Since many areas of Texas are well-adapted to garlic production, this acreage could be profitably increased. Through the use of good seed and proper cultural practices each acre could be expected to produce around 7,000 pounds.

Varieties

Bulbing of garlic is influenced by day length similar to onions. The South Texas area, including the Winter Garden and the Lower Rio Grande Valley, requires a garlic variety with a shorter day length than other areas of the State.

The Mexican variety is the principal variety for South Texas. This variety produces pinkish bulbs 1½ to 3 inches in diameter.

Texas White, probably a strain of the Creole variety, is the common variety for the rest of Texas. The bulb is white and about the same average size as the Mexican variety. The plants are larger, with broader leaves and there are less cloves per bulb.

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A sack of garlic bulbs trimmed from plants in the field. Note plant tops in windrow.

Seed Stock

Garlic growers generally sell the large, well formed bulbs and save the small, unmarketable bulbs for planting the following year. This practice has resulted in progressive selection for poor production and quality. A Texas Agricultural Experiment Station test at Weslaco in 1957 showed that the yield of garlic from large cloves selected from large bulbs was significantly greater than from small cloves from small bulbs. The yields from small cloves from large bulbs or large cloves from small bulbs were intermediate. The average yield per acre of garlic in Texas probably could be increased more by planting the large cloves from the larger bulbs than from any other single practice.

Soils and Fertilizers

Garlic can grow profitably on a variety of soils. The essentials are high fertility and a good structure which will retain moisture and plant food. Drainage should be good and the soil sufficiently loose to permit optimum development of the bulbs.

On most soils suitable for garlic, 50 pounds of nitrogen per acre are needed. Phosphorus requirements range from a minimum of 80 pounds up to 100 pounds per acre, depending on available phosphorus in the soil. Fertilizer should correspond to

recommended rates for onions in a particular area. The fertilizer should be placed 4 inches deep directly under the row. Select land where garlic or onions have not been grown during the last 4 years to prevent build-up of disease.

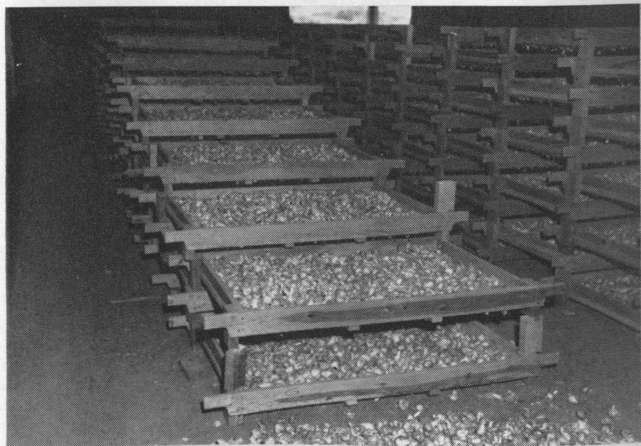
Planting

The dates for planting garlic are similar to the onion planting dates in the different areas in Texas.

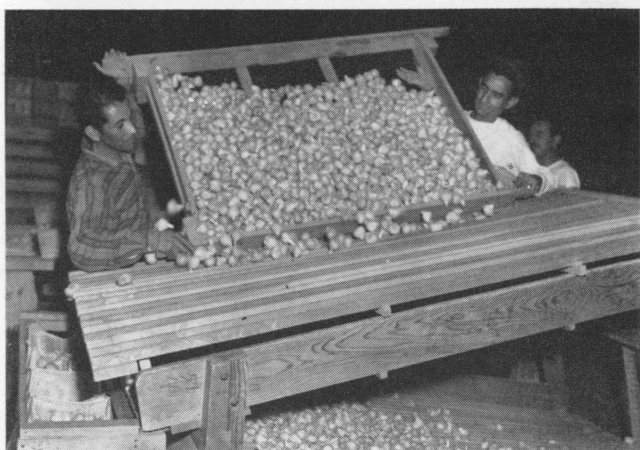
The cloves should be planted as soon after separation from bulb as possible since they tend to deteriorate after separation. The cloves should be graded according to size, selecting only the large cloves as seed stock. The remaining, smaller cloves may be packaged and sold to processing firms.

High plant populations are required for maximum production. Planting on beds 30 to 38 inches apart from the center of the bed with 2 rows 12 to 14 inches apart on top of the bed is satisfactory for garlic. The best planting distance in the row, as shown from recent experiments, is 4 inches between cloves. Approximately 800 to 1,000 pounds of large-size garlic cloves are required to plant each acre with this spacing.

The cloves may be planted by machine on large acreages or by hand when the acreage is small. The cloves should be planted to a depth of about 1 inch



Drying garlic in open-slat trays inside the packing shed.



Garlic bulbs being poured from drying tray onto hand grader.

directly over the fertilizer band. Planting machines such as the onion dry set planter can be adjusted to apply the fertilizer and plant the cloves in one operation.

Cultivation

Cultivation is required only to control weeds and to break the hard surface crust which sometimes forms around the young plants. Cultivate shallow to avoid injury to the small feeding roots. Avoid throwing the soil around the plants, because garlic plants grow better and mature more evenly if the bulbs are near the surface. Deeply covered plants often produce misshapen bulbs of delayed maturity.

Irrigation

Supplemental irrigation is necessary in most areas of Texas for maximum yields per acre. Irrigation practices for onion production apply to garlic. Failure to irrigate when the soil becomes dry results in lower yields and a lower net return on seed, fertilizer, labor and machinery costs.

Diseases

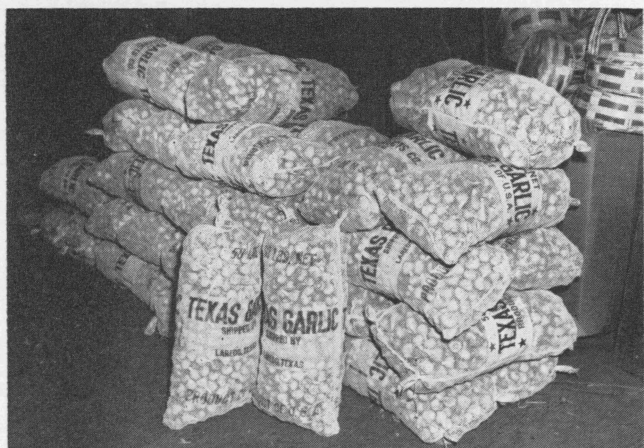
VIRUS DISEASES: Viruses and associated disorders are perhaps the most yield limiting diseases of garlic in Texas. Infected plants, which have a streaked pattern of light green, yellow and white, are

small and yield small bulbs. Some of the diseases are carried in the bulbs and cloves. Growing the seed stock in separate fields, removing virus-infected plants and selecting only large cloves from large bulbs aid in reducing virus diseases. Aster yellows are discussed in L-361, Aster Yellows.

CURING AND STORAGE ROTS: Soft decay begins with the neck and progresses downward to the bulb. Sometimes the decay appears black and smutty. The cloves often become soft, shrivelled, discolored or decayed. Only bulbs free of rot should be selected for seed. Proper curing aids in avoiding rots.

PINK ROOT: Pink root, a fungus disease, causes the roots to turn pink, stunts the plants and, in extreme cases, causes death of plants. Since this disease also attacks onions, garlic should not be rotated with onions. A 4-year rotation is suggested.

SOUTHERN BLIGHT: The fungus attacks the bulbs in all stages of growth. It is recognized easily by the white fan-like fungus threads and the numerous turnip seed-like sclerotia found at the base of the plants or bulbs and on soil near the plants. The disease has a wide host range and attacks most vegetables. If the fungus is present, avoid planting root crops, tomatoes and melons in rotation with garlic. Terraclor, a chemical compound commercially available, is effective in controlling southern blight on some crops.



Garlic packed in 50-pound mesh sacks, ready for shipment to market.



Garlic packed in 30-pound crates ready for shipment to market.

GARLIC SPLITS: The outer protective scales of garlic bulbs sometimes tend to slough off at harvest, leaving the cloves exposed. This condition is known to the trade as splits and the bulbs are rejected by buyers. Splits generally are attributed to excessive delay in harvesting after maturity, allowing soil organism to attack the outer scales and cause them to disintegrate. It is advisable that growers reject split bulbs when selecting seedstock, since the garlic grown from splits also tends to split.

Insects

THRIPS: The onion thrip is a major insect on garlic, causing considerable loss when not controlled. See Extension Service leaflet, L-255, Texas Guide for Controlling Insects on Vegetable Crops, for control measures.

WHITE GRUB: The insect larva is particularly important on heavy soils, where they damage small plants and make holes in mature bulbs. Applications of heptachlor, dieldrin or aldrin at 4 pounds per acre give good control of this pest. The chemical may be applied when the seedbed is prepared. These chemicals also aid in the control of the garlic weevil.

Harvesting, Curing and Grading

Garlic is ready to harvest when bulb growth stops and the tops begin to turn brown. The soil around

the garlic bulb may be loosened by running a cutter blade several inches below the bulb, the same as with onions. The garlic is pulled by hand and placed in windrows with the tops toward the west, so that the bulbs will be shaded from the afternoon sun. The bulbs are left to dry and cure in the field for about a week when weather permits.

The bulbs may be trimmed from the plant when pulled in the field and cured in open mesh shelves under a shelter. It is important to cure bulbs properly. Improperly cured stock does not ship well because it is subject to disease decay.

The cured bulbs are trimmed by leaving a short neck about 1 inch long with the roots trimmed near the base of the bulb. Split, bruised and diseased bulbs should be sorted from the bulbs to be marketed. The bulbs are sized, and packed in suitable containers, usually 50-pound mesh bags or 30-pound crates. Growers may expect greater returns by grading the bulbs according to size. Larger bulbs generally bring the best price.

During the grading and packing operation, growers should select their seed stock for the next year. Approximately 1,000 to 1,500 pounds of the large bulbs should be selected for each acre that is to be planted the following season.

ACKNOWLEDGMENT

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COVER PHOTO

Grading and sizing garlic bulbs and packing them in 50-pound mesh sacks.

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