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Garlic Culture and Marketing
by
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Garlic is a perennial herb and belongs to the same family as the onion, namely, the lily family. Its cultivation is also somewhat similar to that of the latter vegetable. It is used largely for flavoring meats, salads and other foods and is now being manufactured in the form of garlic salt, in which case the crushed dehydrated cloves are used. It is probable that there is a somewhat wider use of garlic than formerly, but the quantity of garlic used per capita is quite small, the largest amount of this vegetable being consumed by the foreign population.

Of late there has been an increasing interest in the growing of garlic and a number of requests for information on growing this crop have been received. Like some other commodities having a limited market, the growing of garlic might easily be over done as far as the relation of supply and demand is concerned. Large quantities of garlic on the market at one time would have a tendency to bring down prices and many would not receive the returns anticipated. It is recommended, therefore, that notwithstanding the fact that the value of garlic is possibly three or four times that of onions, it should be remembered that the yields are generally much less than onion yields and growers should proceed carefully and conservatively in order that the market be not so overstocked as to materially lower prices.

Production. In the United States the principal producing areas are California, Texas, Louisiana, and Arkansas. In California the acreage planted in 1932 was approximately 1800, which was about 500 acres less than that which was planted in 1931. It was also 400 acres less than the 1929 planting.

Climatic and soil conditions. Garlic, like the onion, is a moderately hardy plant, and even though the cloves or bulbs are sometimes planted in the fall, it is seldom that the winter in western Oregon would be severe enough to injure the bulbs or the tops of the plants. The plants themselves will stand a wide range of temperatures both cool and warm, but it is necessary that the bulbs when harvested be protected from the hot sun, otherwise they might be readily burned. This burning is not likely to occur if the bulbs themselves are covered by the tops of the plants as they lie curing in the windrow.

Garlic may be grown successfully on various soil types, but at best the soil should contain a fair amount of organic matter and yet be of a moderately loose or friable type, being neither too light nor too heavy to produce good yields of No. 1 grade garlic. A good garlic soil undoubtedly should have a moderate amount of organic matter, be capable of being readily pulverized, and should be loose enough so that the bulbs will readily expand without having an irregular surface. If the soil cannot be irrigated it should be sufficiently retentive of moisture so as to provide the plants with ample moisture during the dry period of the summer.

Planting. Commercial garlic is grown by planting the small bulbs called cloves which are produced around the mother bulb and enclosed by a thin membrane. These cloves are borne at the time of maturing the mother bulbs in the late summer or early fall.

At planting time the ground is prepared as for onions and the cloves are set in straight rows 14 to 18 inches apart and from 3 to 4 inches apart in the row. All of the cloves are generally planted except the long slender ones that are found in the center of the bulb. In California the cost of preparing the cloves for planting is usually about 50 to 60 cents per 100 pounds. Care should be taken that the planting stock is free from nematodes and pink root.

On soil that does not have water standing on it in the winter time or on land that does not pack readily, the cloves are often planted in the fall; otherwise early spring planting is made as soon as the ground can be prepared. In planting the small bulbs they are set into the soil in an upright position deep enough to hold them erect, with the top of the cloves just below the top of the shallow furrow. It takes one man about 6 days to plant an acre of cloves by hand. From 600 to 700 pounds of bulbs are required to plant an acre, the amount depending upon the size of the bulbs and the distance apart of the rows.

Cultivation and irrigation. The main purpose of cultivation of this crop is to eliminate weeds and keep a light mulch on the soil. It is not necessary to cultivate if the soil is free of weeds and has not been packed. In the soils used mostly for the growing of garlic it is not necessary to irrigate because the soil holds a sufficient supply of moisture for the proper development of the bulbs. On the other hand, if the soil lacks moisture, the size of the garlic will be affected as well as the number and size of the small bulbs.

Harvesting. When garlic tops are turning color and beginning to fall over, they are handled as for onions by pulling a few rows and putting them into a windrow for curing, taking care that the bulbs are covered by the tops as they lie in the windrow. After curing, the bulbs are either trimmed for immediate sacking and selling or the tops may be left on the bulbs and these put together in strings of 50 bulbs each. Garlic is usually sold in 50 or 100 pound open mesh bags but is commonly offered for sale in wholesale houses and stores in graded strings. The storage of the bulbs is practically the same as for onions in that they can be left on the shelves of the storage house or trimmed and put into open mesh bags and kept in a dry, cool shed.

The United States Department of Agriculture has provided for grades of garlic consisting of U. S. No. 1 and Unclassified. U. S. No. 1 grade of garlic shall consist of garlic of similar varietal characteristics which is matured and well cured, clean, compact, with cloves well filled and fairly plump and free from damage caused by doubles, sunburn, sun scald, cuts, tops, roots, disease, insects, or mechanical injury.

Unless otherwise specified the minimum diameter of each bulb shall not be less than $1\frac{1}{2}$ inches. In order to allow for variation in proper grading and handling, not more than 10% by weight of any lot may be below the requirements of this grade. A copy of these grades may be obtained from the United States Department of Agriculture, Court House, Portland, Oregon.

Insects and diseases. There are a few insect pests injuring garlic which may sometimes be serious. The onion thrip is a common pest of this crop. A nicotine sulfate spray of 1 part of 40% nicotine sulfate to 800 parts of water at a high pressure is recommended for control.

The red spider sometimes becomes an important pest in garlic growing, and this insect has been successfully controlled by using sulfur dusted at the rate of 40 to 50 pounds per acre. (See O. S. C. Ext. Bulletin 459)

There is some pink root disease of onions already in the state and this may also affect garlic. Pink root is a disease which can be identified in the field by the

pink color of the roots and the effect of the disease on the plants is to stunt them in their growth as well as limiting the size of the bulbs and thereby greatly reducing the yield per acre. At the present time there is no known control method for this disease. Any soil where pink root has been noticed to be present should be avoided in so far as the growing of onions and garlic is concerned.

Yields and prices. Yields of garlic average from 5,000 to 12,000 pounds per acre, depending largely on the fertility of the soil and its ability to hold moisture during the drier portion of the growing season. Prices on garlic vary considerably but usually average from 3 to 6 cents a pound to the grower.

Additional literature available

Onion Growing and Marketing, O. S. C. Extension Circular 259

Vegetable-Crop Insect-Pest Control Program, O. S. C. Extension Bulletin 463

These publications can be obtained free from any County Agricultural Agent or from the College Exchange, Corvallis, Oregon.