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Garlic Culture

in Oregon

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Garlic is a perennial herb belonging to the liliaceae family. Other well-known members of this group are asparagus, onions, leeks, chives, and shallots. The fragrant lily and the odoriferous garlic are extremes within the family. Culture of garlic is quite similar to that of onions.

Garlic is used primarily as a seasoning for salads, soups, meats and other foods. Our foreign population is the chief user of this vegetable in the United States. Per capita consumption of garlic in the United States is very small compared to onions and asparagus, the more popular members of this family, but the total amount used each year is increasing gradually.

There is considerable fluctuation in the acreage devoted to garlic, and this in turn affects the market. It takes only a small surplus of garlic to have an adverse effect on prices to producers.

Producing areas

California, the largest garlic-producing state, grows about one-half of our normal consumption. A few large operators handle the greater part of California's 2,000-acre crop. Imports from Chile, Italy, Mexico, and Spain added to the crops grown in Texas, Louisiana, and Arkansas usually about equal the California production. This leaves little demand for increased production in Oregon.

Climate

Garlic is quite hardy, standing a wide range of both cold and heat. Western Oregon winters are seldom severe enough to injure fall-planted bulbs or plants. Most of the growth is made in the spring and summer.

This circular is revised from and is to supersede Extension Circular 399, an earlier report now out of print.

Soils

While garlic will grow in almost any well-drained soil, it does best in soil containing a fair amount of organic matter. The soil should be loose enough to work readily and to allow the bulbs to expand without becoming misshapen. If irrigation is not possible, the soil should be deep with enough organic matter to hold moisture for good growth during the drier part of the growing season.

Varieties

There are many strains of garlic being grown, but for the most part they are merely selections made by the various growers. This is a good way to improve the planting stock.

Early garlic which matures from 2 to 3 weeks ahead of the regular crop is produced for a limited market by some California growers. It has poor keeping quality, however, and the demand for this type is limited.

The bulbs of the late crop are somewhat smaller, higher quality, and keep well for general use. There is some difference in appearance, with the late varieties having more cloves or divisions and the color running to pink and light brown, while the early varieties are tan.

Sources of propagation stock

Unlike onions, garlic produces no true seeds. It is propagated by planting the cloves or divisions of the bulb. These are often spoken of as seed and can be purchased from the larger seed firms. It takes from 600 to 1,000 pounds of "seed" per acre, depending on the planting distance used and the size of the cloves.

White rot disease and bulb and stem nematode are quite common to this crop, so planting stock should be selected with some care. If

a grower has his own seed block, he can select for disease freedom, large size, and high quality. This should go far toward maintaining good planting stock. Bulbs should be stored in a moderately cool, dry place with good ventilation. Storage temperatures below 40 degrees will bring about early sprouting and may cause roughness, sideshoots, and early maturity.

Soil preparation

Highly fertilized soils that produced a good crop of something else the previous year might not need further fertilization to produce a crop of garlic. If the previous crop did not do well or there is other indication that fertility is lacking, apply 50 to 75 pounds of actual nitrogen per acre and a similar amount of phosphorus (P_2O_5). Some growers prefer to apply the nitrogen in a complete fertilizer that includes sulfur and potassium. This material should be sidedressed if equipment is available, but mixing in the soil prior to planting will also give good results. Fertilizer must be applied before the bulbs develop if it is to be of maximum value to the crop.

Planting

When the soil is well worked and ready to plant, the cloves can be broken apart. All the larger outside cloves are used for planting and are set 3 to 4 inches apart in the row, with the rows 14 to 18 inches apart. The cloves are set upright and only a little below the surface of the soil.

Planting can be done in the fall of the year, if water does not stand on the land during the winter and the soil does not become packed.

Cultivation and irrigation

Cultivation should be only deep enough to kill weeds and break any crust that might have

formed. Many weeds can be killed by the use of a light weed oil (such as carrot oil) used as a pre-emergence spray. This would take from 25 gallons per acre for band application to as much as 75 gallons to cover the entire area.

In western Oregon garlic will normally produce well without irrigation. On dry soils, however, supplemental moisture will be very helpful. The roots go down for about 2 feet so the moisture should be maintained to this depth until the tops start to fall over. This is a sign of ripening, and irrigation should be stopped.

Harvesting

When the tops of the garlic become partly dry and bend to the ground, the crop is ready to harvest. Pull several rows and pile together, covering the bulbs with the tops to protect them from the direct sun while they are curing. When thoroughly dry after a week or more, remove the tops and roots with shears leaving about 1 inch of the top and 1/2 inch of the root on the bulb. Yields vary from 5,000 to 12,000 pounds per acre depending on the weather and soil conditions.

All refuse should be removed from the field as a disease control measure.

Storage

Storage in a moderately cool, dry, well-ventilated place is best for garlic. Warmth and high humidity cause mold and spoilage. Temperatures of 40 degrees and below may cause early sprouting and poor bulbs.

Grades

U. S. Grades are provided for this crop. Information on grades may be obtained from the State Department of Agriculture in Salem.

Insects and diseases

Thrips and red spider mites are common pests in garlic.

Thrips are best controlled with heptachlor or dieldrin sprays, 1 tablespoon of 25% material per gallon of water. Ten per cent DDT dust is sometimes used, but generally is not as effective.

Mites are controlled with a 4% to 5% malathion dust or a malathion spray, using 1 to 2 teaspoons of 50% emulsifiable concentrate per gallon of water.

Stem and bulb nematode cause a swelling and sponginess of the base and frequent splitting of the bulbs. Clean up all refuse material, and remove suspicious looking bulbs from the planting. No other controls are known at present. These precautions are also good for white rot, which causes a yellowing and wilting of the leaves.

Pink root, a common disease of onions, also attacks garlic. No specific control measures are known. Examine stock carefully before planting, and remove all diseased bulbs. Do not plant garlic for several years on soil where root diseases of onions or garlic have been present.

Further information on garden insects may be found in Oregon Extension Bulletin 747, Vegetable Garden Insect Pests. Your local County Extension Agent can supply a copy.
