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ASPARAGUS

by

A.G.B. Bouquet,
Horticulturist, Vegetable Crops,
Division of Plant Industries

A complete farm garden should include a planting of asparagus which is the most important perennial vegetable. The asparagus plantation should be given a place with the rest of the horticultural crops that are of a more or less permanent nature, and with rhubarb also as a perennial crop, asparagus should be planted at one side of the garden so that it will not interfere with other vegetables that are planted annually.

Usefulness of the Crop

Asparagus is one of the first vegetables to be harvested in the spring when the garden is almost barren of fresh produce. Once established, the bed will produce annually for several years. When harvested fresh from the garden and cooked shortly thereafter, asparagus has the finest quality possible. The plant is one that adapts itself well to various soil and climatic conditions, and, as a consequence, can be grown in almost every portion of this state.

Commercially, asparagus is grown in Oregon to the extent of around 550 acres, which was the amount reported in 1933. Small areas of asparagus are to be found in the vicinity of the various cities of the state, and larger areas are located along the Columbia River east of Portland. There is also some acreage planted in the Willamette Valley for shipping and canning purposes. In point of car shipments, but one car was reported shipped from Oregon in 1933. The state of Washington shipped 50 cars in 1933, 44 of these going out in April and 6 in May.

From prices of asparagus published by the United States Department of Agriculture, Bureau of Agricultural Economics, values on asparagus have declined considerably since 1930 when the value per crate was stated to be at \$2.10. Prices were recorded at \$1.50 per crate in 1932 and \$1.10 in 1933. Nineteen thirty-four prices were estimated on an average of \$1.65 per crate and in 1935, preliminary estimates were at \$1.20.

Varieties

The most widely planted variety at the present time is Mary Washington, which is rust resistant, a vigorous grower, and which produces stalks which are of good market quality. If setting out a plantation of asparagus from roots, it is especially important to get a good strain of roots of the variety mentioned, or if one is growing one's own roots, the seed should come from a company growing pedigreed seed borne by plants which have been selected for good characters.

Crowns

Asparagus crowns which are used for starting a plantation are grown from seed in an outdoor seed bed, the plants being allowed to grow for one full season before being set out in the permanent bed. Prospective growers of asparagus have the option of buying one year old crowns or obtaining selected seed and growing their own crowns. There are advantages to either method. If the crop is to be grown on a rather large scale, it is cheaper to grow the crowns than to buy them, but on a small scale, especially for the farm garden, it is best to buy the one-year old crowns ready for planting. There are some advantages in growing one's own plants in having knowledge of the source and productiveness of the parent plants from which the seed came. Also, there is greater opportunity for selection of the crowns and they can be dug when desired. When buying plants, large one-year old crowns are the best for planting.

The asparagus plant produces both male and female plants, of which in the field probably 50 per cent are males and 50 per cent females. Some experiments seem to indicate that the male plants may produce slightly larger yields of stalks than the pistillate or female plants, but it may also be said that certain pistillate plants may produce a slightly better grade of asparagus than the staminate. This question is not one which should in any way concern the grower of 50 to 100 asparagus plants producing stalks for home consumption.

It is important that the plants be set out in the garden before the crowns have started to make much growth, otherwise the stalks will oftentimes be broken off and thus some of the first year's production of stalks will be lost.

Soils

Asparagus is a crop which adapts itself to a wide variety of soils, but from the standpoint of producing early and straight stalks, a light friable sandy or silt loam is preferable. Soils which are light in texture and friable have a tendency to produce earlier and straighter asparagus. From a commercial standpoint, therefore, the soils adjacent to rivers are most widely used for asparagus production. In the home garden, if the soil is naturally heavy and inclined to be late or unusually moist the plants can be covered over with sandy loam or a lighter type of soil after they are put into the trench, which can be gradually filled with the lighter soil instead of the natural soil of a more compact type.

Fertilizers

Experimental data on fertilizing asparagus seem to indicate that it is not absolutely necessary to use manure in order to maintain the production of asparagus beds. In some experimental work manure seemed to be of considerable importance in increasing the yield while in other tests maintenance of high yield has been possible by the addition of commercial fertilizers. Manure should not be applied in the fall in sections where the winter is mild, otherwise there is a tendency for a mass of weeds and sod to grow which may be difficult to cut up and incorporate with the soil in the spring. Fine manure should be broadcast in the late winter or early spring and this material disked in when the plantation is being prepared for the harvesting season.

Most of the material from which the shoots are formed in the spring is stored in the fleshy roots of the crowns during the previous summer and fall. It is, therefore, desirable to have as heavy a top growth after the cutting season is over as possible.

If commercial fertilizers are used from 700 to 1000 pounds of a complete fertilizer analyzing 4 to 6 per cent of nitrogen, to 8 per cent of phosphoric acid, and 4 to 8 per cent of potash should be broadcast over the bed in the spring and worked in with harrow or cultivator, or on a small scale it may be scattered along the row and mixed with the soil in spring preparation. In some cases this complete fertilizer is further supplemented by applications during the later days of the spring with 200 pounds of nitrate of soda to the acre.

It was formerly considered that salt was necessary in the growing of asparagus, but it is certain that it is not essential as very good asparagus is grown without the use of salt. It would be better to use commercial fertilizers containing available plant foods which would stimulate the growth of the plants and a heavier production of stalks.

Setting the Roots

The usual distances of setting asparagus in the garden are $4\frac{1}{2}$ to 6 feet between the rows and 18 to 30 inches between plants in the row. These distances vary as to whether the plantation is commercial or one for home use. The rows can be closer together in the home garden, or one long row may be sufficient. Commercially, in view of the horizontal and vertical spreading of the roots of the plants, it is advisable to have them no closer than two feet apart in the row and the rows preferably 6 feet apart. In California the large plantations of asparagus are set at 20 inches between the plants with $7\frac{1}{2}$ to 8 feet between the rows.

Setting the Crowns

Furrows should be made so that the crowns are set at a depth of 10 to 12 inches in sandy loam soils, 10 to 12 inches in peat soils, and about 8 inches in soils of a heavier type. The plants may be set from any time in the late fall to the early spring. Oftentimes spring planting is delayed because the soil is too wet and in this case fall planting would be preferable. If the soil is light and loose, the planting may be postponed until the spring. In any case, it is desirable to set the crowns before the shoots have started to grow to any extent, otherwise they may be broken off. The fleshy roots should be spread out horizontally in the furrow and the crowns should be covered with about a couple of inches of soil when they are planted. If the full depth of soil is placed on the crowns immediately it may prevent the new spears from coming through. Filling in the furrows will take place as the stalks of the plants grow during the spring and summer.

Maintenance of the plantation

Sufficient cultivation should be given asparagus to keep down weeds and to maintain a mulch. The larger the growth of tops during the spring, summer, and fall the greater will be the cutting the following spring. If water is available for irrigating during the summer, it should by all means be applied as it will cause an increase in the growth of the crowns and consequently larger future harvestings.

In some cases it is necessary to spray the asparagus tops after the cutting season in order to control grubs hatched from eggs laid by asparagus beetles. This can be done by using arsenical sprays or dusts. For particular details regarding this pest information should be obtained from the Department of Entomology. Chickens allowed to run in the plantation will help materially to control the beetles during the harvesting season.

It is inadvisable to cut the top growth of the plant until it has been killed by frost. Some growers cut these tops with a mowing machine and rake them into windrow and burn them. In other cases, however, the tops are disked into the soil in the spring when the land is being prepared for the harvesting season.

If the rows of asparagus are 6 feet or more apart, it is possible to intercrop with small vegetables between the rows of young plantations. Carrots, peas, peppers, cabbage, radishes, and lettuce are sometimes used.

If there should be any plants missing in the rows, the best time to locate these is in the summer of the first year, and then the missing places can be set with crowns during the early spring of the following year.

Harvesting

It was formerly considered inadvisable to start to cut the stalks from a new asparagus plantation until the third year. In some cases, however, where the plants have made an unusual growth the first year after planting, there may be a short period of cutting for possibly 10 or 14 days. Two years after planting, if the plantation is vigorous, the fields may be cut for a period of two to three weeks. The vigor of the plantation will be denoted largely by the size of the stalks. Large spears would indicate good, vigorous plants, while spindling stalks would denote the opposite.

Asparagus grows very quickly during warm weather, and therefore must be watched closely in order that it be cut when it is of the proper length. Commercial stalks of asparagus are usually cut when they are about 9 to 12 inches long. It is necessary to cut the stalks before they have had a tendency to start to feather, which is the beginning of the opening of the tip and lateral growth. To have good commercial value, therefore, the stalks should be fresh, straight, free from feathering, and of a desirable diameter and length. Harvesting in Oregon begins in mid April extending for a period of 8 or 10 weeks depending on weather conditions.

It is advisable to grade asparagus according to the diameter and length of the stalks. The United States Department of Agriculture, Washington, D.C., and the Oregon State Department of Agriculture, Salem, have suggested grades on asparagus, which can be followed to advantage. Trimming of the stalks is done to remove the tough, white end of the butts so as to have about 9 inches of tender green stalk with a tight head.

Asparagus stalks should be kept in a cool place soon after cutting, otherwise there is considerable shrinkage and undesirable loss of sugar, with an increasing amount of fiber, accounting oftentimes for the well-known toughness of some spears. The butts of the stalks should stand in a shallow pan of cold water and set in a cool storage place.

The commercial package for marketing asparagus is the pyramid crate, which has a shape conforming to the tapering form of the asparagus stalks. This container oftentimes has wet moss on the bottom and the asparagus stalks are frequently wrapped in parchment paper in order to protect them from shrinkage.

Yields

Yields of asparagus increase after the first few years to reach a high point at possibly the eighth or tenth year after which time there may be neither an increase or decrease for a few years. The profitable life of a bed may vary considerably

according to the type of soil and its productivity. Yields of 8,000 pounds per acre are not unknown but rare. Nearer to the average are yields of 3 to 5,000 pounds per acre. Instances of 20-year old areas of asparagus still producing profitably are not uncommon.

Useful Reference

Asparagus Culture - Farmers' Bulletin 1646, United States Department of Agriculture, Washington, D.C.

For further details concerning this or any other vegetable crop, address the writer, Vegetable Crops Section, Oregon State College, Corvallis, Oregon.