

UNIVERSITY OF ARIZONA
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ASPARAGUS CULTURE

Asparagus is a crop well suited to southwestern conditions both of climate and of soil. Asparagus is resistant to our extremest heat, endures drouth well, and prospers with amounts of alkali in the soil prohibitive to many other crops. So well suited, in fact, is this plant to our environment that it often escapes from cultivation and grows wild. Asparagus, also, grows wild in the Sahara, and is much prized for its edible qualities.

Asparagus is best suited to intensive culture as a garden crop, with rows four or five feet apart; but it is also sometimes grown less intensively as a field crop, with rows six or more feet apart, to admit conveniently of cultivation and fertilization with horse drawn tools.

The soil and its preparation: Rich, sandy loam soil, heavily fertilized with barnyard manure is best for asparagus, which will also endure considerable percentages of alkali salts. The limit of tolerance for alkali is indicated by a barely surviving plant found at Tempe in alkaline soil containing—

Total soluble solids	Sodium chloride	Sodium carbonate
1.53 per cent	.65 per cent	.18 per cent

It is customary, indeed, to add salt in considerable quantities to asparagus beds in regions where it does not naturally occur.

In preparing a field for asparagus the ground should be made level for short rows, or with a very slight fall (about 2 in. in 100 feet) for longer rows, in order to secure thorough percolation of the water supply to the extensive root systems of the plant. In preparing the rows a good method is to open them out with furrows, two each to right and

left, then placing a layer of well-rotted barnyard manure in the bottom of each furrow and covering it with two or three inches of soil. Rows thus prepared should be about five feet apart in small fields, but can be six or eight feet apart in larger and less intensively cultivated tracts.

Planting: Either seed or roots may be planted in the rows prepared as described, the surface of which should be somewhat below the general level of the field, since it is desirable to have the crowns of the plants at least six inches below the surface in order that the rows may be cultivated in winter without interfering with the crop. Roots should be placed at intervals of about 15 inches and covered about two inches deep with soil. Thus placed they may be irrigated at first on top of the depressed row, the soil being drawn gradually to the plants as they develop until finally they stand in low ridges irrigated from furrows on either side. Seed may be planted in nursery rows about two feet apart and allowed to grow one year. In planting, they should be covered about an inch, and the plants should not be closely crowded in the row. The young roots may then be dug and transplanted as described. One or two year old roots give quicker results but are more costly than seed, which, however, requires at least a year's development before transplanting may be done. Roots, also, will grow in soil too alkaline for seedlings. Although asparagus roots are hardy under shipment, home grown seedling roots are usually fresher and better for transplanting purposes than those imported from a distance. Also, they are not infested with rust, which may be brought in with imported roots.

Culture: Although asparagus endures drouth, its profitable culture requires frequent irrigation, ordinarily not less than twice monthly during the growing season. During the cutting season weekly irrigations are advisable. Each irrigation should be followed by cultivation. The crop should be fertilized each year immediately after the cutting season is over. This may be accomplished by opening put furrows, right and left, in the spaces between the rows, filling them in with well-rotted barnyard manure and then covering back again. The growing crop will make use of this fertilization through the summer season, when root systems are being stored with materials used in the elaboration of the next crop.

At the close of the growing season the dead tops should be cut and burned to clear the ground and destroy such rust spores as they may contain.

Crop: In Southern Arizona the cutting season begins in the latter part of February and continues for about three months, or until the first of June. The climax of the crop is during April.

Yields vary according to variety and age of the perennial plants, as well as cultural conditions. One-year-old plants should not be harvested, conserving them for a maximum yield during their second and subsequent seasons. Four-year-old roots at Yuma are estimated to yield fifty percent more than three-year-old roots, and three-year-old roots in turn yield about double the crop produced by two-year-old roots. The plants may be left undisturbed for several years if cultivated space is maintained between the rows and fertilizer applied each year.

Varieties: Large varieties, such as Conover's Colossal, Columbian, and Barr's Mammoth are showy and at first attractive to customers, but they are less tender and palatable. Moreover, blanching by drawing earth to the plants in the rows causes asparagus to become fibrous, and increases the table waste. Green varieties, such as Palmetto and Argenteiul are usually preferred by careful customers, these varieties also being more tender and palatable and attended with less waste.

At Yuma there is no great difference in the yields of different varieties, Palmetto a green sort, and Barr's Mammoth a large kind, apparently leading in yield.

Yield: A plot of two-year-old Palmetto produced at Yuma at the rate of 3,500 pounds per acre, and a rather poor stand of one-year-old Palmetto and Argenteiul produced at the rate of 1,250 pounds per acre. A mixed field of one acre, of all varieties from two to four years old, produced at the rate of 2,700 pounds per acre, the product being sold locally at eight to ten cents a pound.

Pests and diseases: Few insect pests attack asparagus. The alfalfa butterfly caterpillar, when driven from its favorite food plant, attacks asparagus to some extent, but not seriously.

Asparagus rust is the most serious disease encountered at Yuma, having been brought with an importation of seed roots from California, where the rust is responsible for heavy losses. The rust, which is a fungus disease appearing in discolored spots in the stems of the plant in March, does not increase greatly in amount until cutting operations cease and the tops of the plants are allowed to develop. As soon, therefore, as the cutting season is over, about the first of June, operations against asparagus rust should begin. A standard remedy, which has proved very effective at Yuma, is whale oil soap and flowers of sulphur. The asparagus is first sprayed with a solution of 6 pounds of whale oil soap in 50 gallons of water, using 400-500 gallons of the spray to an acre. While the plants are still wet flowers of sulphur are dusted upon them by means of a common bellows blower, about 100 pounds being required for an acre. The operation is best conducted early in the

morning when the spray will not so quickly evaporate from the plants. Although one spraying has been observed to be very effective, a second spraying about a month later than the first, by way of precaution, is advisable. After the second spraying, repeated search failed to discover any trace of rust.

Asparagus should have place in every home garden, being well suited both to irrigated conditions and to the dry farmers' homestead. It can be grown in some quantity in the vicinity of small towns and cities, where it is always in demand. Large quantities, however, require transportation facilities, and special marketing arrangements which, possibly, are not now available to Arizona growers. Canned asparagus is a standard market article and could be produced and put up as a home product in connection with the operations of a canning factory. With markets assured the crop should be a profitable one in **Arizona** and worthy of a place on every intensively cultivated farm.

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