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ASPARAGUS

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ASPARAGUS

By F. J. SUTTON

Asparagus is one of the earliest of our spring vegetables and, when once a bed is established, is easily grown. Kentucky had only sixty-two acres in this crop, according to the United States Census of 1910, the latest statistics available. Of this acreage, at least fifty were in Jefferson County. Asparagus can be grown with profit in most parts of the State. The larger towns afford excellent home markets. There are in this State at least ten towns of ten thousand or more inhabitants that would consume the product from five to fifteen acres of asparagus each, and fifteen towns with a population of five to ten thousand that would utilize the tips from two to five acres each. These estimates of consumption are conservative and the quantities needed would doubtless increase as the populations become more familiar with this vegetable. People will eat and demand more asparagus when they can obtain home-grown tips of high quality instead of the dry, stringy shoots which they have often been compelled to accept if they used any at all.

Location and Preparation of the Land

While asparagus will do well on clay soil, land of a lighter type is considered much better. Sandy soils warm up earlier in the spring time, which means an earlier harvest, and are more easily worked than stiff lands. A sandy loam is ideal for it combines a reasonable amount of fertility with the desired openness of the soil. Good drainage is essential and, unless the plot can be tiled or ditched to carry away the surplus water, one should never attempt to grow asparagus on land

where the natural drainage is bad. Stony ground is not suitable because of the interference offered to the growth of the shoots. If rolling land is to be used, a southern slope should be selected for the asparagus plantation. A south slope gets more sunlight and therefore warms up earlier in the spring, resulting in an earlier crop which brings the higher prices.

Where washing does not occur during the winter months, the soil should be plowed in the fall and thoroly harrowed, if the roots are to be set that autumn. In the home garden the spade and rake will perform this work. If planting is to be put off until spring, the land should lie rough thru the winter and then should be harrowed shortly before planting. Spring plowing is the rule on land subject to washing. Deep plowing is necessary and often subsoiling is required to open and make porous a layer of clay lying below the top soil. Fifteen inches is none too deep to run the subsoil plow.

Securing the Roots

It is easy to grow the plants by sowing the seed thinly in shallow drills as early in the spring as the soil can be worked and later thinning to three inches apart. Lightly compact the soil above the row to bring the moist dirt into contact with the seeds and thus hasten germination. Since asparagus seed does not germinate in less than four weeks, mix a few radish seeds with the asparagus before planting and sow in the drill with it. The radish shoots thru the soil early and thus marks the row for cultivation. In addition to serving as markers the radishes, provided quick-maturing varieties have been used, will reach an edible size by the time they must be got out of the way of the asparagus seedlings.

The rows are spaced thirty inches apart for cultivation with horse implements, while fifteen inches is sufficient for hand tillage. Cultivation is given thruout the season to keep down the weeds about the seedlings. Some hand weeding is generally necessary. If the cultivation of the seed bed is neglected, it will require two years to get plants as large as they should be in one year when they have been properly cared for.

One hundred pounds per acre of nitrate of soda sprinkled along the row once or twice during the growing season will increase the size of the plants. One pound of seed produces roots enough for setting one acre of ground. For the home garden, where only a small number of plants are required, it undoubtedly is more practical to buy the roots, but for the setting of asparagus on a commercial scale they can be grown cheaper than their cost from a seedsman. Palmetto, Argenteuil, Conover's Colossal, and Reading Giant are standard varieties.

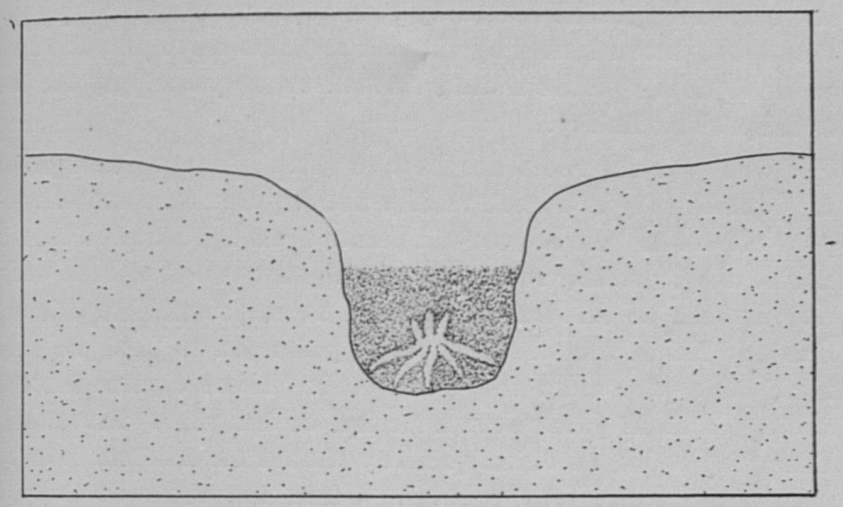

Fig. 1—Cross section of asparagus bed, after planting.

Setting the Roots

Most asparagus roots are set in their permanent locations in the early spring but in the warmer parts of the State they can be planted in the autumn with safety. Asparagus is harvested as green or as blanched or white "grass." After the soil has been plowed and worked down into perfect condition the rows are carefully marked off, four feet apart for green asparagus, while, for blanched, the distance is increased to six feet in order to have room in the middles to throw up dirt ridges about the plants without cutting off any roots. Then furrows are run five to seven inches deep by plowing back and

forth with a two horse plow. Every eighteen inches in the furrow the roots of an asparagus plant are spread out and covered with two or three inches of soil. The asparagus crowns are put in deep in order to get them below the reach of the harrows. It is true that each year the crowns get nearer to the surface of the ground but, at that, deep planting delays the time when there will be interference by cultivating tools.

Asparagus is a perennial (lives many years) and the best place for it in the home garden is over to one side where it will not be in the way of plowing the rest of the space each year. An acre set eighteen inches by four feet contains 7,260 plants. One set eighteen inches by six feet requires 4,840 plants. Two to three dozen plants should furnish an ample supply for the average-sized family.

One-year-old roots are best to set. If large enough to transplant, they are more thrifty and vigorous than most two-year-old roots. Three-year-old plants are sluggards and should not be used. Strong roots give the highest yields and the weak ones should be thrown away. The Pennsylvania Experiment Station* found the strong roots to yield $72 to $100 per acre more each year than the weak ones. These figures are the average annual gains over a period of six years' harvesting. In buying roots, an extra quantity should be ordered, so as to permit the culling-out process. Often the roots of shipped plants have dried in transit and in such cases they need to be soaked in water for a few hours to revive them. If other work be pressing, so that the roots can not be planted at once, they should be covered temporarily with moist earth. Home-grown plants should be dug in small quantities as they can be transplanted and thus the drying of the roots is reduced to the minimum.

Care After Planting

Frequent, shallow cultivation should be given the asparagus bed thruout the spring and summer. As the young

* Myers, C. E. Experiments with Asparagus. Penn. Agri. Exp. Sta. Rpt. 1915-16.

plants grow, the dirt is gradually worked to them until the trench ceases to exist. The first two years a row or two of low-growing vegetables, such as bush beans, lettuce, radishes, beets, dwarf peas, and, where the asparagus rows are six or more feet apart, Irish potatoes, can be grown between each two rows of asparagus. The same cultivation serves for the two crops and the money derived from the intercrop helps pay the cost of the asparagus.

In the fall, for the first two years, while the brush is small, the top growth of the plants may be disked into the soil. In the third and succeeding seasons, the plantation is disked over thoroly early in the spring and, if blanched asparagus is desired, more or less flat ridges, about one foot high, are thrown up over the rows, with a plow or a regular asparagus ridger. A dead furrow is thus left between the rows. Some growers go between the rows with a two-horse disk cultivator, having the two or three disks on each side set to throw the dirt to the ridge. For green tip production, no ridging is necessary. However, later in the cutting period, when the weather has become warmer, the terminal bud on the shoot opens before the stalk has reached the height above ground desired for cutting. Cool soil plowed up into low ridges over the row at that time prevents this trouble in the latter part of the harvesting season. If the weeds become troublesome during the cutting period, it may be necessary to disk over the bed. One cannot avoid harrowing up some young shoots but, by doing this after the tips have been taken for the Saturday sales, the plants have Sunday in which to recover from the set-back.

After harvesting, the bed should be fertilized and the ridges leveled by first plowing away a furrow along each side of the ridge and then cross-harrowing until the field is smooth. Any young tips thrown out in the leveling process should be picked up and used. Cultivation between the rows is continued as long as possible, but that will not be for very long because the asparagus tops soon become large enough to shade the ground and thus prevent weed growth. When weeds begin to start between the plants in the row, a one-horse plow should be run

between the rows to throw a light furrow to the plants. This will not injure the heavy asparagus stalks and the small weeds will be completely smothered. In the fall, when the seed balls are turning red, the stalks are mowed off to prevent the scattering of seed and to destroy diseases and insects. This brush is piled and later burned, when dry.

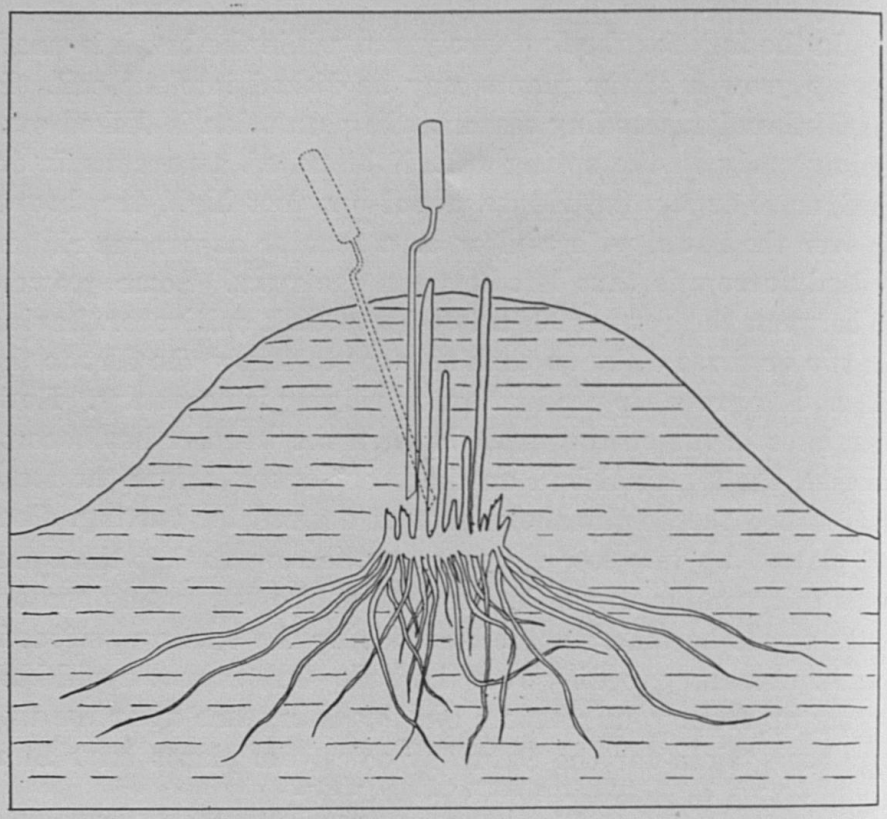

Fig. 2—Cutting blanched asparagus. Insert the knife alongside the shoot, as shown by the solid lines; then sever the shoot, as shown by the dotted lines.

Harvesting and Preparation for Market

The first and second years after planting, no shoots should be used; even in the third season the harvest period should not continue more than three weeks. It must be borne in mind that the roots are gaining in strength and the plants would be weakened by any heavy cuttings made at this early age and

the crops of succeeding years would be greatly reduced. The fourth year, the harvest season is extended to six weeks and, thereafter, a well-cared-for bed should yield for eight or nine weeks. In all cases the cutting should cease as soon as the roots run small and the plants show signs of weakening.

Whether to cut asparagus tips green or blanched depends

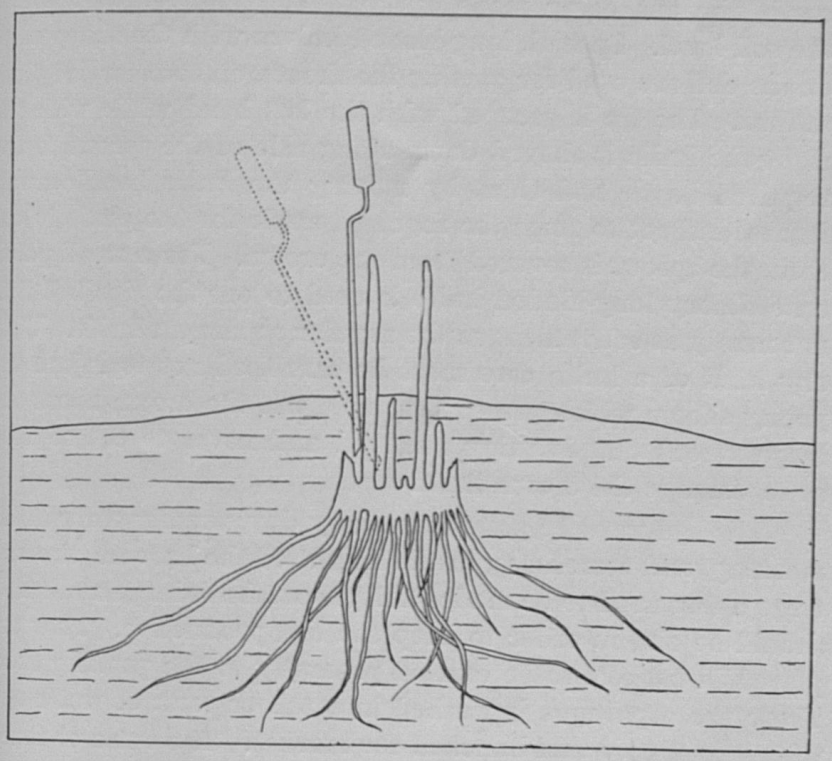

Fig. 3—Cutting green asparagus. The dotted lines show the position of the knife in severing the shoot.

upon the demands of the consumer. Most markets require white "grass." The blanched tips are said to be more tender but there are differences of opinion regarding that point. The advocates of green asparagus claim a flavor in the unblanched shoots superior to that of the white. In some places a compromise product, half green and half blanched, is sold. The tendency seems to be to use green tips more than formerly but

the change is not proceeding very rapidly. For green "grass" the sprouts are allowed to grow six or seven inches above the soil and then the cut is made two to three inches under the ground; in other words, merely deep enough to make the severed stalk nine inches long. Ridges a foot high are made over the rows of asparagus, when the white product is desired, and the stalks are cut as soon as the tips peep thru the mound of earth, the cut being made approximately nine inches below the soil level. Special, long-bladed knives with the sharp edge on the end are used for cutting the shoots, on commercial plantations. The tip is grasped with the left hand while with the right the knife is shoved down along side of the sprout to the required depth and then, by moving the knife handle away from the shoot to form the required angle for the blade to cut thru, the sprout is severed from the crown. For a small patch an ordinary long-bladed knife is used to cut the tips but it is not nearly as convenient as the regular asparagus knife. With any kind of a knife care must be exercised not to injure the young shoots which are coming up from the crown about the large sprout that is being removed and never to cut so deep as to damage the crown itself.

The bed must be gone over every day, usually early in the morning, and sometimes, in the height of the harvest, two cuttings a day need to be made. All shoots, both large and small, should be cut, in order to keep the bed productive. They are placed in baskets to be carried promptly to the packing shed. There the asparagus is washed in a tub or tank of water and then it is graded and bunched for market. The extra or fancy grade contains the large, long, straight shoots. The primes or firsts are not so thick and need not be as long as the fancy. The seconds are the thin, short, crooked sprouts. Do not try working low-grade shoots into a fancy bunch, for, invariably, the price paid for the asparagus will be based upon the inferior tips present.

Various devices are used for bunching asparagus easily and rapidly. One of the most popular forms has two pairs of curved arms within which the required amount of

shoots are placed, with the terminal buds all touching a board at one end of the buncher. Then, by pressing a lever, the sprouts are compacted by the two sets of arms into a solid, cylindrical bundle which is wrapped and tied with string, raffia, or colored tape, around the base and around the top. The irregular butt ends of the shoots are cut off with a knife,

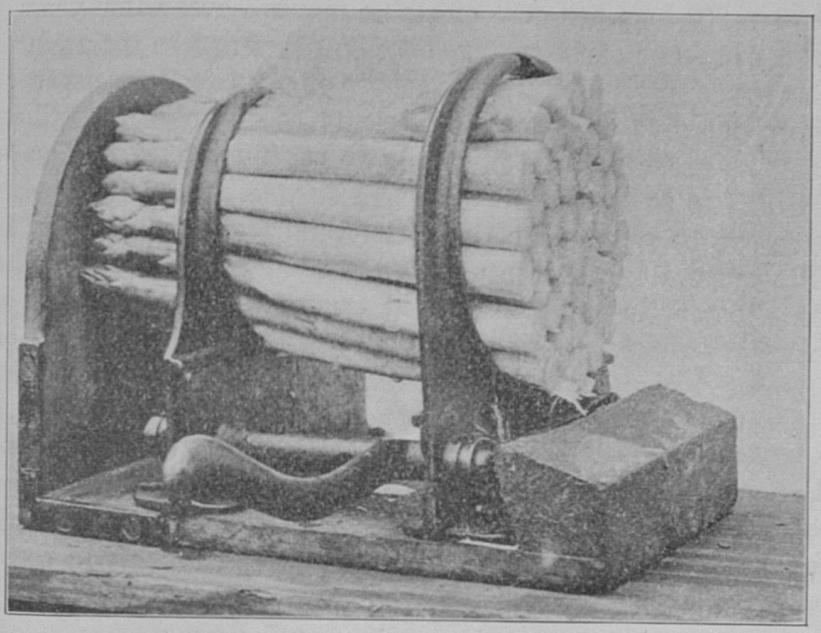

Fig. 4—Asparagus buncher. The irregular butts have been cut off even, to give uniform length and a flat bottom to the bunch. (Photograph loaned by the U. S. Dept. of Agriculture).

giving the bunch a flat bottom and shoots of uniform length. The bundles are stood upright in a pan with their bases in an inch of water, to prevent wilting. Altho asparagus is harvested every day, it usually is marketed not over three times a week. However, asparagus, to be had at its best, should be consumed very soon after it is cut. For shipping to distant markets the bunches are packed in crates. Some growers use the 32 quart strawberry crate, but special asparagus crates and boxes holding one to three dozen bunches are more commonly employed.

Manures and Fertilizers

Frequently land suitable for asparagus is deficient in humus, or organic matter, and it is advisable to apply twenty to thirty tons of barnyard manure before plowing. Well-rotted manure had better be spread upon the field after plowing and then disked into the soil. After the bed becomes established (the third season and later) an application of ten to twenty tons per acre of stable manure every few years, in the winter or early spring, may be necessary to maintain the humus supply. Manure as a source of plant food for asparagus does not give as economical results as commercial fertilizers and its use should be primarily to supply the organic matter needed to keep the soil open and friable. Part of the nitrogen can be supplied in the commercial forms. Outside of the Bluegrass Region, Kentucky soils need phosphorous and, as this is supplied only in limited amounts by manure, it is advisable to supplement the manure with five hundred to one thousand pounds of acid phosphate per acre. It is questionable whether applications of potassium salts pay, since our soils are generally well supplied with this element. Probably some of our sandy soils will respond to potassium and in that case eighty pounds of muriate of potash should be included in the fertilizer. Unleached wood ashes will supply potassium to the land. Two hundred and fifty pounds of nitrate of soda and four hundred and fifty pounds of acid phosphate per acre give good results on most soils. For small areas one-half pound of nitrate of soda and three-fourths of a pound of acid phosphate for fifty square feet should be applied. In the years when the manure is added, the commercial fertilizer can be omitted. Formerly the fertilizer was put on in the early spring but it is a better practis to apply it along the rows after the cutting ceases. The shoots are produced from the food stored up in the fleshy roots during the past season. By adding the fertilizer after the harvest period the leafy growth, which is the manufacturing portion of the plant, is stimulated and thus increases the amount of food available for storing in the roots. The addition of salt to

asparagus beds seldom has any effect one way or another. Experiments have not generally shown beneficial results from its application, save possibly in preventing weed growth. An asparagus bed properly fertilized and not exhausted by extended cuttings will yield profitable crops for ten to fifteen years and occasionally a bed remains productive for as many as twenty-five years.

Insects and Diseases

The small, black and red asparagus beetles are not common, as yet, in Kentucky. They may appear in the patch in the spring about the time the cutting season begins. The tips are eaten and damaged for market by the adult beetles and the young larvae. Since the eggs are laid upon the tips, the simplest method of control is to harvest every shoot at each cutting, to prevent the eggs from hatching. If the beetles become especially destructive a few shoots are left to grow, but these plants are kept thoroly dusted with Paris green, used in the proportion of one pound diluted with ten pounds of flour, wood ashes or air-slaked lime. If in late summer the beetles have to be checked, the plants should be sprayed with a solution of three pounds of arsenate of lead paste, three pounds of resin-fish-oil soap and fifty gallons of water. Liquids do not adhere well to asparagus and the resin soap is added as a sticker.

The reddish-brown spots found on the stems and branches of asparagus plants are the asparagus rust. It is caused by a very small plant living within the tissues of the asparagus and getting its food from that host. The asparagus plants are weakened by the rust and the quantity of food that can be laid by for the crop of tips the following spring is greatly reduced. Spraying is not used to control this disease. The planting of varieties resistant to the rust has been the most effective means of combating this pest. Palmetto and Reading Giant have proved the least susceptible of our commercial varieties. Mowing the tops in late fall and burning will help some in checking the rust but to be effective all the tops, both

of the cultivated and the wild asparagus near the patch must be destroyed.

Forcing

Asparagus can be grown thruout the winter. In the late autumn, before the ground freezes for the winter, roots that have been grown at least four years in the field are dug. Breaking off any of the large, fleshy roots should be avoided. The plants must not be allowed to dry out by lying in the sun and wind but should be gotten into a shed or pit and covered with a little soil, to keep them moist. It is desirable to expose the roots to a freezing temperature, to make them grow better when they are brought into the house. One day of freezing will be sufficient but several will not injure the plants. The asparagus crowns are then placed as close together as possible on three inches of soil on a cellar floor and are covered with dirt to a depth of three inches. At this time the bed is thoroly moistened and thereafter water is applied just enough to keep the soil from drying out, which will mean about two applications each week. It is a good precaution to take the chill off the water in the cold weather. Growth depends upon the temperature maintained and the presence of sufficient moisture. The food all comes from the fleshy roots and no fertilizer is used. Growth is accelerated by high temperature but the life of the plant is thereby shortened. The cellar is kept near 45 degrees for the first week or ten days after putting in the roots and after that the temperature is raised to 55 to 60 degrees. The temperature may go up to 75 or 85 degrees, but so much heat causes spindling growth and quickly exhausts the plants. With proper regulation of moisture and heat a bed should begin bearing in two weeks and should continue to yield for four to six weeks. To have blanched tips, the cellar should be darkened or the roots covered with more soil. In order to have a succession of asparagus thruout the winter, some of the roots are kept in a cool shed or pit and a new supply is planted in the cellar every four or five weeks.