

BROOM CORN.

By W. R. PERKINS.

The numerous inquiries being received by the Station in regard to the growing of broom corn has suggested the publication of the following press bulletin or circular of information on that subject.

Since the growing of this crop is quite different from growing the staple crops of this state, especially in its harvesting, curing and marketing, and as it requires a considerable amount of skill, with a special equipment of machinery and commodious sheds in which to dry and cure the straw, I would caution those who contemplate changing from cotton to broom corn to be careful lest they meet with disappointment and loss to begin with. Go slow at first and learn from experience a great many things that are necessary in order to put on the market a class of material that will sell at a profit.

Nature of plant.—Broom corn belongs to the sorghum species as do Kafir corn, Milo Maize, and common sorghum. It contains very little sugar and is what is known as a non-saccharine sorghum. It is not so good as ordinary sorghum for forage and is surpassed by Kafir corn in the production of seed. The length of the panicle or seed head constitutes its most striking difference to the above plants, and it is this seed head or brush, after the seed have been removed, that is used for making brooms, and that makes it a valuable crop.

Kinds of broom corn.—There are two distinct types of the plant cultivated and used for making brooms. One is the standard kind with head 18 to 30 inches long used for making large brooms, and the other is the dwarf broom corn with head 10 to 18 inches long used for making whisk brooms, hearth brooms, etc. The latter kind is more popular in a dry climate such as is found in some of the western states.

Varieties.—As is the case with most cultivated plants there are a great many varieties of each of the above types of broom corn. Of the standard type, Tennessee Evergreen, California Golden Evergreen, etc., will be found listed by seedmen. To one beginning the growing of the crop, one variety will be about as good as another,

the value of any seed depending on the care that has been taken in saving them.

Good seed.—There are two main considerations to the successful growing of this crop: One is that a good yield is obtained, which means that every stalk should produce a marketable brush, and the other is, that the brush should be of good quality; and both of the conditions are very dependent on the quality of seed. It is not only necessary that the stalk produce a full sized head, but that the texture of the straw be fine, that the heads be uniform in size and quality, and that they all come to maturity at the same time. During the past year the station grew two varieties of broom corn. There was no apparent difference in them and in both a large per cent of stalks failed to produce a brush of marketable quality, in addition to possessing all the faults to a marked extent that have been referred to. It is suggested that anyone going into this business should go in to stay and that two or three varieties be planted the first year in the hope of securing one, the seed of which has been carefully selected. In case one of superior quality is found, sufficient area of this planting should be saved for seed. Before the seed in the select patch have been formed, go through and cut out all inferior stalks or poorly shaped heads and save seed only from those that possess the desired qualities. This is the only way that seed of reliable quality can be had, and no one should be willing to plant any other kind. This careful selection of seed should be kept up every year as long as one grows broom corn.

Soil and season best suited to growth.—Broom corn being much like sorghum requires about the same conditions for its growth that is required by that plant. It will do well on almost any soil, but like most farm crops will vary in yield with the richness of the land, the fertilizer used, and the culture given.

In regard to season it is more exacting in that it is very essential to have nice, fair weather from the time the heads are well out until the crop is gathered and cured. Much wet weather at this time, not only makes it difficult to cure the crop into a high class product, but damp weather conditions favor the ravages of plant lice and fungus diseases in the heads, both of which are the cause of poor quality in the crop when ready for market.

Preparing the soil.—It is a wise plan to prepare land well for any crop, and broom corn is no exception to the rule. The soil should be worked into a fine seed bed in order to get the plants up and started

to growing promptly. If the land is rough and grassy the stand is liable to be bad and the early growth will be so slow as to allow grass to cause a great deal of additional expense in the hoeing required.

Planting.—Standard broom corn should be planted in rows 3 feet to $3\frac{1}{2}$ feet wide, and on good land, a stalk should stand every four inches in the row. As the land planted becomes poorer, the stalks should stand farther apart—each grower having to use his judgment as to the proper distance for any given piece of soil. It is probably better to have a few too many stalks on the land than too few, because of the tendency of the straw to become coarse if the individual stalks have enough space to permit their making a very rank growth. Suckers are also very likely to appear on the stalks where a thin stand occupies the land and they rarely produce marketable straw.

In our experiments last season planting was done May 11th, and I feel sure this date is too early for an average year. The weather at this season is frequently cool, which is detrimental to quick germination and to rapid growth of the young plants, and as a result, the crop may get grassy before it is large enough to cultivate. This will necessitate more work with the hoe than one should count on giving, and thus increase the expense of growing the crop. In addition to this, broom corn planted at the date above mentioned, will reach the harvesting stage at a time when we are liable to have considerable rain, and if possible, this should be avoided. One thing every broom corn grower should determine to do is to put a high class product on the market; and he will soon learn that this is impossible if much rain comes while the crop is being saved.

I would recommend planting in June, and on well prepared, moist soil it may very safely be planted in July. Broom corn growers prefer to plant just what seed that are expected to grow on the land, so as to avoid any thinning which is a tedious job, and one that is liable to do more or less injury to the small plants left. About 3 pounds of seed of such quality that 95 per cent of them will germinate are ample for a stand if the land is in condition and the planting properly done.

Planting is best done with a planter, the holes in the plates of which are of the proper size to drop the required number of seed. The seed should be covered from $\frac{1}{2}$ to 1 inch and the soil pressed down on them with a wheel or roller attached to the planter. The object being to get them up quick so that the side harrow or other implement can be put in the field before the grass gets a start.

Cultivation.—After the first cultivation with some fine toothed cultivator, any implement may be used that accomplishes the object sought in cultivating crops in general. These objects are to keep clear of grass; to prevent the soils crusting; or in other words, to maintain a mulch of loose soil and to avoid high ridges in the later cultivations, except where lack of drainage makes it necessary to leave in ridges. To facilitate the working, some growers prefer to plant in hill 15 to 18 inches apart, leaving 5 or 6 stalks in a hill. The dwarf kind should be left about 25 per cent thicker on the land than the standard kind.

Harvesting.—The heads are ready to cut when the bloom begins to dry up and to fall from the stalk, and before any seed are formed. In order that the brush be of best quality as well as of the desirable green color when cured, it is necessary to cut at this stage. The harvesting of the standard broom corn is rather tedious, and on account of its height, the practice of turning the stalks 4 or 5 feet from the top is very general. This process is called tabling the crop, and is done by turning two adjacent rows across the middle between them so that the stalks form a table with the heads extending into middles on either side. The stalks are turned diagonally across the middle, first a stalk from one row and then one from the other, making a self-supporting surface above with the head at a convenient height to be cut by the man with a knife who passes up the alternate middle and cuts the heads from two rows at a time 8 inches below head. The heads are piled on top of the table and are hauled at once to the curing shed where the machines for stripping off the seed is installed. The seed are removed as soon after cutting as possible, and the curing must be done under a well ventilated cover to preserve the green color and to avoid any mold or bleaching in the process of curing.

Removing the seed from heads.—When there is a considerable area to be handled, a power thresher or machine for stripping off the seed is necessary. This machine consists of a cylinder with teeth or spikes set in its surface. The brush is carried between the cylinders by means of a toothed belt that holds them firmly, and the rapidly revolving cylinder removes the seed. Such a machine with a capacity to clean 20 or more acres a day costs from \$150.00 to \$200.00. Further information about the machine can be had from manufacturers of agricultural machines.

Where a small area is to be cleaned, an ordinary curry comb removes the seed very satisfactorily though it is a slow and expensive

method. Another very satisfactory hand stripper can be made by inserting sharpened steel spikes an inch or two long into a solid setting and attaching this to a bench or box. The seed are removed by drawing over these spikes.

Curing.—After the seed are removed, which should be done as soon as possible after cutting, the cleaned straw must be stored in thin layers on racks under a shed until it has dried to the point where no moisture can be wrung out of the stalks. A free circulation of air must be maintained and at the same time light should be excluded as far as possible, sunlight having a tendency to bleach the straw. The layers of straw on the racks should not be more than 3 inches thick in order that it may dry out rapidly and not become moldy. When properly dried, which should not take more than three or four weeks, the brush should be removed from the rack and bulked under shed in straight piles for a few weeks in order that it may pass through a sweat and become so perfectly cured as to be out of danger of molding after it has been baled.

Baling.—Broom corn is marketed in bales 26 inches square by 45 inches long and weighing about 300 pounds each. A horse power press is used. The seed end of the brush is lapped in the middle with the butts extended to and forming the ends of the bales. The bales are bound with 5 No. 9 wire.

Sorting the brush.—The market demands a uniform grade of brush and it is necessary before the baling point is reached to go through and separate into different grades, placing in different lots the well colored straight straw; and the discoloured or damaged straw; and the crooked straw. The price received for the crop determines very largely the profits made in the business and it is very essential that this sorting be carefully done. The buyers are well acquainted with all of the devices resorted to by dishonest growers in adding unnecessary weight to the brush or in packing inferior stuff with the good. The trade demands an honest product and it pays to meet the requirements.

The price of broom corn varies from year to year, usually ranging from \$60.00 to \$125.00 per ton for the best grades. Crooked straw sells at about half the price paid for straight straw of the same quality.

A good yield is a ton to three acres.

✻ We have drawn considerable from Farmers Bulletin No. 174, U. S. Dept. of Agriculture, by C. P. Hartley, in preparing this circular and give due credit for the information.