Broom millet

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THE "straws" in the "straw-broom" found in the average Western Australian household are the seed stalks of the broom millet plant. Supplies of "broom" for the manufacture of household brooms and brushes are purchased from growers in the Eastern States of Australia, particularly from Victoria, but from time to time supplies are scarce. The value of this crop is dependent on the price of broom and in periods of scarcity high prices are paid. It can be grown on summer moist soils in Western Australia and with high prices, can provide remunerative returns per acre.

Broom millet is an annual non-saccharine variety of sorghum, very similar in size to maize, but has much thinner stems and narrower leaves. Male and female flowers occur separately on the one plant and the seeds are borne on long stems which eventually provide the long fibres required for the manufacture of household brooms.

WHEN TO GROW

Broom millet is grown during the summer months on soils which would normally be used for growing maize. Seed should not be planted until all danger of frost is over and the land is sufficiently warm to germinate the seed. September, October and November are satisfactory months for planting in the higher rainfall areas with a later planting in the districts further south.

SOIL PREPARATION

For best results, the ground must be thoroughly prepared to a depth of about five inches and worked to produce a firm seed bed similar to that required for maize. Ploughing should commence early in the spring before the land has dried out, and subsequent working can be done with a disc cultivator, harrows and if available, a roller. Weeds must be destroyed during these cultivations.

SEEDING

The rate of sowing varies with the type of country on which the plants are grown and also on the row spacing which is adopted. Normally a seeding rate of 2 lb. per acre is considered satisfactory. Rows should be spaced 21 to 35 inches apart, according to the equipment available for planting and inter-row cultivation after the plants are up. In choosing a spacing of 21, 28, or 35 inches, this can be readily achieved by drilling, providing that every third, every fourth, or every fifth run of the drill only is used and the remaining holes are blocked up. In the rows, plants should be spaced between 4 and 12 inches apart using a closer spacing where moisture conditions in the soil during summer are most satisfactory or under irrigation.

FERTILISER

This crop requires adequate quantities of nitrogen and potash with phosphorus for maximum growth. Generally 2 to 3 cwts. per acre of superphosphate are needed and on most soils, 1 cwt. per acre of sulphate of ammonia or its equivalent in nitrate of soda is recommended. In addition to these, potash deficiency has been demonstrated on many of our soils in the higher rainfall areas and where potash deficiency is suspected, an application of 1 to 1½ cwts. per acre of muriate of potash is recommended.

BENDING AND TABLING

The upright fibres carry the seeds at the top, and are very prone to spread from the weight, and may bend over if the seed crop is heavy. This results in twisted and bent fibres which are undesirable. To avoid this, a practice of bending the stalks so that the heads are allowed to hang down vertically is frequently adopted. The stems are bent at a point 9 to 12 inches below the base of the seed stalks and it
may be necessary to bend the stem in two places so that too sharp a bend does not fracture the stem.

Another technique which is used for harvesting broom stalks is known as tabling. By walking backwards between two rows and bending the stalks across one another so as to form a table about 3ft. high with the seed heads hanging over the edge of the table, the process of cutting off the heads becomes much more simple. If the crop grows to a height of 9ft. or more, this practice is usually adopted.

**HARVESTING**

Harvesting is carried out by cutting or pulling according to the varieties grown. About 10 to 14 days of man labour are required in America to harvest, cure, thresh and bale a ton of cured brush. A ton of cured brush contains 40,000 to 70,000 heads, and each brush or head must be pulled or cut separately.

The brush turns from pale yellow to green before maturity and should not be harvested until the whole brush from the tips down to the knuckle is green. If harvested whilst the fibres are still yellow they will be weak and flabby at the bottom. The seeds are at about milk stage when ready to harvest. Four or five days after this stage the brush gets over-ripe and begins reddening. Where a large area is to be harvested, almost invariably some of each quality will be obtained as the heads last harvested will be mature. At this stage the fibre is a straw or flesh colour, and is a little inferior in quality. In normal seasons it will be found that this quality sells as readily as the prime, and the value of the seed as poultry feed more than makes up any loss.

Where only a small area is grown it is recommended to harvest the crop just before the seed is mature, thus obtaining a prime article.

The actual harvesting should be carried out in warm dry weather, as if stacked while damp, the fibre becomes discoloured in a very short time.

This State is admirably suited from a climatic viewpoint for the growing of this crop, as our conditions for harvesting are usually good.
During the harvesting, the sheath enclosing the base of the brush should be removed at the time of cutting as this facilitates drying, and deprives aphidae of shelter. These insects are almost invariably found in crops of millet.

**DE-SEEDING**

After the brooms are removed from the plants, the seeds must be removed from the fibres by threshing or hackling. The most satisfactory method is by a wooden roller 12 to 18 inches in diameter and approximately 2ft. long. Four-inch or six-inch nails are driven into this wooden roller in rows arranged diagonally across the roller with the rows spaced about six inches apart. On the “intake” side of the roller, the nails are placed about five inches apart and are placed progressively closer together as they approach the other end until at that end, they are spaced 2½ inches apart. The roller is rotated at a speed of approximately 300 to 400 revolutions per minute and the brooms or hurls as they are called, are held in the hands and worked across the roller to thresh off the seed. Four or five hurls can be threshed simultaneously.

**CURING**

Threshed green brush placed in the shed, loses about half of its weight in the form of evaporated water before the brush is dry enough for baling. This requires 10 to 14 days under ordinary conditions but longer if the weather is damp. Brush left longer than 24 hours in the field is likely to become bleached, otherwise the longer it is left in the field, the shorter is the curing period.

The brush is placed on the slats within the shed in layers 2 to 3 inches thick. If piled too thickly it becomes “shelf burnt” and discoloured on account of heating.

Curing is sometimes done in ricks but this material is usually poorer in quality, bleached and sometimes discoloured by rain. Under favourable conditions it may be of excellent colour and appearance. Ricks are 3 to 5 feet high and 4ft. wide at the bottom and tapering upwards. The seed ends are placed outwards.
GRADING

It is important that the farmer grades his broom millet brushes carefully according to market types. Green coloured brush should be segregated from the golden-coloured brush and each classed into appropriate grades. The ideal brush is approximately 17in. long, straight and with the fibres pressed closely together. In grading the material these long straight brooms can be baled separately from the loose and short brooms and from the "turnovers" and "insides." This type of grading is shown in the illustration with best grades at A and poorest grades at F.

BALING

The various grades should be baled separately and all seed removed. In placing the brushes in a press, care must be taken to protect the fibres. The brush is laid with the butt ends outwards and the heads overlapping in the middle. Battens may be placed on the top and bottom of the bales and when pressed, tied with at least three strands of No. 10 wire. A bale of 36in. long by 18in. deep by 30in. wide, weighing approximately 112 lb. is usual and satisfactory.

YIELDS

Yields range from 8 to 15 cwts. per acre of good fibre on non-irrigated land with best results on fertile soils which are well supplied with moisture during the summer months. Under irrigation, higher yields than this could be expected.

At the present time prime hurl or broom is valued at £160 or £170 per ton. In addition, the seeds which are threshed from the broom may be sold as stock food. The portion of the plant which is left in the field after harvesting can be chaffed for roughage for stock or may be burnt to destroy any pests which may be present.

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