

slings are used the height of the barn roof must be sufficient to permit their advantageous use. A direct saving is made when two or more wagons are taken to the field, especially if the haul is long. In the former case the elapsed time is only a third to one-half as great. The extra wagons are taken to the field and left standing, the same crew loading all of them.

The 5-foot cut is the most common size of mower in the East. On farms where there is sufficient acreage to be cut and the ground is fairly level and free from stones and stumps, it is economy to use the larger sizes. Under average conditions, a 5-foot mower will cut 10 acres in 10 hours, a 6-foot mower will cut 12 acres, and a 7-foot mower will cut 14 acres. The larger implements require more power, but this is usually available on farms where there is sufficient acreage to justify the use of the larger sized machines.

Loss in Mowing

Another considerable loss in time results when two or more mowers are used, one following closely behind the other. If a slow team happens to be in the lead those in the rear are compelled to follow more slowly than they otherwise would do. If one of the teams is delayed on account of a breakdown the other teams must stop while repairs are being made. A better mowing practice, if several machines are used, is for each driver to lay off a "land" for himself and work independently of the others so there will be no interference from other machines.

Many farmers are still using small one-horse rakes bought many years ago. Such rakes should be used only on small acreages. On farms which grow 40 or more acres of hay, a 12 to 14 foot rake should be used. With such a rake 50 per cent more ground can be covered in a day and the work is done more easily than with the smaller rake.

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HEMP Varieties of Improved Type are Result of Selection Methods of hemp selection devised in 1913 have been followed since with only slight modifications. The plots of different strains are placed as far apart as possible (40 rods or more) to avoid cross-pollination. The seed is sown early in April in drills 6 feet apart. The plants are cultivated as soon as the rows can be seen and about four times later. In June the plants are thinned to 10 to 15 inches apart in the drill. As soon as the staminate buds can be distinguished in August the plots are rogued. All plants of poor type are removed, and superfluous staminate plants are cut out. In September, when the plants have attained full size and the staminate plants have shed their pollen, notes and measurements are recorded for each pistillate plant as follows: Diameter, number of nodes and height to alternate branches (from which to compute length of internodes), total height, notes as to divergence from type. The tallest and best plants are tagged with their numbers and covered with a cheesecloth sack to protect the seeds from birds.

The plants are harvested late in October and the seed is threshed (beaten off) about a week later. The seed of each selected plant is

cleaned separately by means of a small fanning mill. The seed from the other plants is cleaned and sent in small quantities to hempseed growers. One pound, containing about 27,000 seeds, is sufficient to plant an acre of seed hemp with hills 5 feet apart each way.

The selected individual plants are subjected to further competition based on length of internode, total height, and weight of seed, to determine which ones will be used for planting the following season. Each row in the selection plot is grown from the seed of an individual selected plant of the preceding year.

Kymington

The variety called Kymington (Kentucky-Minnesota-Washington, from the origin of the seed and places of development) is a result of



FIG. 105.—Initial selection plot of Kymington hemp, averaging 9 feet 11½ inches in height, from seed of a single plant of Minnesota No. 8. Arlington Experiment Farm, 1914

successive individual selections from the progeny of the best single plant of Minnesota No. 8 grown in 1912. This mother plant was 10 feet 6 inches tall. The 311 plants in the initial plot of 1914, on clay loam upland at the Arlington Experiment Farm, averaged 9 feet 11½ inches in height. (Fig. 105.) Each plant selected to furnish seed for the following year was taller than the mother plant of 1912. The average length of internodes in this initial plot was 4.37 inches. These measurements increased until 1923, when the average height was 16 feet 9¼ inches and the average length of internodes was 5.94 inches. (Fig. 106.) Since 1923 the measurements have declined somewhat, due in part to unfavorable soils and seasons, but in all instances the average measurements have been above those of the original plot, and in 1927 they were slightly better than in 1926.

This variety has been grown extensively by Kentucky hempseed growers, some of whom have kept the seed pure.



Fig. 106.—Kymington hemp, averaging 16 feet 9¼ inches in height, an increase of 60 per cent by nine generations of selection. Arlington Experiment Farm, 1923

Chington

The Chington (China-Washington) variety has been developed by successive individual selections from the progeny of a single plant in 1913. The seed was received from Hankow, China, through the Office of Foreign Plant Introduction and given the S. P. I. number 35251. It was planted in the testing garden, and unlike most of the numerous introductions of hempseed, it gave promise of value. It averaged 5 feet 11 inches in height, and the best single plant from which seed was saved was 10 feet 6 inches tall. Seed from this best plant was sown at the Arlington farm in 1914, and the annual selection has been continued. This strain also reached its greatest development in 1923, when it averaged 16 feet 8 inches in height with internodes averaging 6½ inches. A few plants attained a height of 20 feet. Since 1923 the measurements have declined a little, though remaining always above those of the mother plant of 1913 and the average of the initial plot of 1914. With the slight reduction there is greater uniformity.

The Chington variety has been grown extensively by hempseed growers in Kentucky, and in some instances efforts have been made to keep it pure. Large fields of fiber hemp sown with pure Chington seed are remarkably uniform and give good yields of excellent uniform fiber.

Ferramington

The Ferramington variety has been developed by successive selection from the progeny of a cross made in 1916. In that year a row of Ferrara, the best hemp of northern Italy, was grown in the plot of Kymington, and all of the Ferrara staminate plants were removed before they shed any pollen. (Fig. 107.) Seed from the best Ferrara

plants was saved, and this has been grown and selected at the experiment station at Madison, Wis. The cross was made for the purpose of combining the earliness and smaller diameter of stalks of the Italian hemp with the greater height and longer internodes of Kymington. This result has been achieved after many years of selection to eliminate diverse types from the progeny of the cross.

This Ferramington has been tried in Wisconsin, where it gave a very good crop nearly two weeks earlier than the main hemp harvest. It has also been tried near Bologna, Italy, where it produced fiber fully equal in quality to that of the Ferrara hemp grown in the same field, and about 1 foot longer.

Arlington

The Arlington variety is being developed by successive selection of individual plants from the progeny of a cross made in 1919 between Kymington as a pistillate parent and Chington as the staminate parent. It shows increased vigor both



FIG. 107.—Origin of Ferramington hemp. Row of Italian Ferrara pistillate or seed-bearing plants in plot of Kymington. Arlington Experiment Farm, 1916

in growth and in production of seed, and the stalks are slender and more elastic than those of any of the other varieties. It is a little earlier than either of the parent varieties, both of which are later than most of the hemp from unselected Kentucky seed.

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HIDES and Skins to Be Standardized as Aid in Marketing

Late in the fiscal year 1927 a new project was started in the Bureau of Agricultural Economics for the purpose of developing standard market classes and grades for domestic hides and skins. The need of better raw material is an active subject for discussion, the best quality raw stock produces the finest quality of leather. There is also a great need on the part of the hide and skin producer to be able to clearly identify his product and to realize more for his efforts in the skinning and curing operations.