

FOR FARMERS, STOCK BREEDERS AND GARDENERS

Rotation Practice Varies With District

Cultural and rotational practices for dry land agriculture are fully dealt with in a recent issue of "Scientific Agriculture" by Dr. E. S. Hopkins, Dominion Field Husbandman. "One very essential feature of any successful rotation" he writes, "is that it contains a large percentage of the acreage devoted to the most profitable crops. It is obvious that neglect to observe this requirement would very quickly result in financial failure. The type of farming which is followed will influence the selection of the crops to be used in the rotation. Thus live stock or mixed farming will require a larger acreage of hay, pasture, corn or other forage crop than will straight grain farming. The amount of live stock will influence the amount of these forage crops which it will be necessary to grow."

However, it would seem, wise, explains Dr. Hopkins, before deciding upon the type of farming to follow, to determine what yields of the various crops might normally be expected in the various parts of the prairie. The Dominion Experimental Farms have conducted experiments on crop rotations over a fairly long period of years and a study of the yields secured from different types of crops on the various farms may be of some interest. The yield data available for crops grown in Western Canada are not absolutely comparable among the various farms because the comparisons are not for the same period of years. Even where this is the case, the comparisons may not be absolutely fair inasmuch as during the last four years, for example, some regions such as Southern Saskatchewan and Southern Manitoba, have had severe crop failures. While the northern crop districts have enjoyed average or even above average yields, only a very long average would overcome these weaknesses. Notwithstanding any imperfections, a study of these yields throw some light on the reason why some crops are preferred over others.

Detailed information is given in the article on wheat, corn, summer-fall and stubble land, frequency of summer-fallow in rotations, relative yields of hay crops at different Dominion Experimental Stations, relative yields of corn at different stations, cultural methods—summer-fallow treatment, summer-fallow substitutes, and stubble treatment. All this information is available in the various Dominion Experimental Farms and Stations, thus at the disposal of every farmer.

INCUBATION

(Experimental Farms Note)

A great many of the difficulties inherent in artificial incubation have been overcome to a large extent in recent years through improvement in the incubator. Not only are incubators now built which are well insulated and hence capable of maintaining very constant temperatures but equipment for humidification has also been improved to the extent that lack of moisture in the air, with consequent too heavy evaporation from the egg, is rarely the case. In general, hatches have improved as a result of these developments.

This improvement in equipment, however, does not excuse haphazard methods in incubation and will in no measure make up for faults in the raw material of incubation, the egg. It is an axiom that the breeding stock must be vigorous, healthy and well nourished in order that good hatchability can be obtained and no amount of care in the handling of incubators will overcome the handicap which poor breeding stock places on fertility and hatchability.

The essential first step in incubation is the selection of suitable eggs. Since egg size is a definitely inherited characteristic and real progress in improvement in egg size can be made by selection it is obvious that only eggs of good size should be set. If the flock is to be maintained as one capable of producing eggs of the satisfactory size, eggs which have practically no chance of hatching and may be picked out by candling. Eggs with rough poor shells or with definite checks as seen under the candle light will usually evaporate their moisture too rapidly and hence give little satisfaction in hatching. Eggshapen eggs are apt to be poor particularly in shell structure, and their use should be avoided.

In the handling of the machine itself, temperature and humidity are particularly important. The latest reliable research indicates a temperature of 98 degrees F. to be most satisfactory throughout. Slightly better results are obtained, however, if the temperature is lowered to about 95 degrees F. during the last six to ten days. A relative humidity of 60 per cent should be maintained throughout. The recommendations are, of course, subject to variation where specific instructions for other temperatures based upon the performance of any particular machine are recommended by the manufacturers although in general they apply.

While the value of turning of eggs during the incubation period is not entirely known, research just published indicates that within reasonable limits too much turning cannot be done. It is advisable to turn often and to rotate about the long or short axis of the egg from side to side, that is not turning constantly in the same direction. If

Hints on Growing Asparagus

(Experimental Farms Note)

Asparagus will grow on a wide variety of soils, but the warm, rich, "Scientific Agriculture" by Dr. E. S. Hopkins, Dominion Field Husbandman. "One very essential feature of any successful rotation" he writes, "is that it contains a large percentage of the acreage devoted to the most profitable crops. It is obvious that neglect to observe this requirement would very quickly result in financial failure. The type of farming which is followed will influence the selection of the crops to be used in the rotation. Thus live stock or mixed farming will require a larger acreage of hay, pasture, corn or other forage crop than will straight grain farming. The amount of live stock will influence the amount of these forage crops which it will be necessary to grow."

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Lawn Making Advice

Contrary to general belief, almost anyone can have a beautiful, verdant green lawn. To be sure, certain fundamental principles must be followed, but they are few and very simple to grasp. If your lawn making efforts have not been crowned with success, try again this spring. If you follow the suggestions below carefully you will always have the kind of lawn you've always wanted.

SOIL: A sandy loam is ideal for a lawn but not a necessity. It is well, however, to approximate this type of soil, which can be done by working in a little sand with soils which consist principally of clay, or working in a little clay with soils that are very sandy.

PREPARATION OF SEED BED: Spade the area which is to be made into a lawn to the depth of six inches, provided this is not deeper than the top soil covering the area. After spading work the soil with hoe and rake until it is finely pulverized.

APPLYING PLANT FOOD: Apply four pounds of complete plant food per one hundred square feet evenly over the area and work it lightly into the top couple of inches of soil. This is important for few soils contain, in an available form, the many food elements grass plants need for healthy growth.

SEED: As in most things, cheap seed is false economy. Buy good seed suitable for your location. Consult your local seedman. Remember that shady areas in your lawn must be seeded with shade-tolerant grasses.

SEEDING: Apply the seed evenly. If you seed by hand, apply half of the seed lengthwise and the other half crosswise. After seeding, roll the area or tamp it with a heavy board to assure good contact of the seed with the soil.

WATERING: Immediately after seeding, water the lawn thoroughly, using a very fine spray. Water daily thereafter until the seeds germinate. After the seeds germinate, water thoroughly once or twice weekly, as needed.

CLIPPING: Do not let the new lawn grow higher than three inches. Mow it shorter than one and one-half inches. Remove the clippings from the lawn.

It is best to make your lawn as early in spring as possible, for then the grass has an opportunity to become established before the hot, trying months of summer.

This is done gently and often, better hatches should result.

One further point should be particularly noted, namely, that when taking off the hatch any chicks which are late in hatching or which do not appear to be entirely vigorous should not be raised, as experience has indicated that such chicks rarely develop normally and usually die at some time during the rearing period or at the best make unthrifty pullets and poor producers.

In the experience of the officials of the Dominion Forest Nursery Station at Sutherland, Saskatchewan, green ash is the most drought-resistant tree in the planting of shelter belts on prairie farms, and it also stands excess moisture well. Poplars and willows are among the least drought-resistant. Maples when planted by themselves seldom die on account of lack of moisture. Seedlings, cuttings, and trees are distributed both from the station at Sutherland and from the Dominion Forest Nursery Station at Indian Head, care being taken to send out only those suitable to the soil, moisture supply, and climatic conditions of the various districts.

Tells How to Make Surroundings Beautiful

It is generally accepted that the home is the first and best place to practise charity so the home should be the first centre of beauty and no better start can be made in this direction than by beautifying the home grounds. For those who have a desire to make their home surroundings a joy to themselves and all who see them the booklet "Beautifying the Home Grounds of Canada" will prove a helpful and encouraging document. A limited number of this publication is available from the Canadian Horticultural Council, 114 Victoria Street, Ottawa, for the nominal price of 25 cents. It has chapters on landscape architecture, how to make the lawn, the flower garden, furniture, pools, rock gardens; the kind of shrubs, plants, trees that can be grown in the different parts of the Dominion with plans and illustrations. The time of the year is rapidly approaching when the noblest of pursuits—gardening, will be in full swing.

Tree Shelterbelts Need Attention

The main object of a shelterbelt of trees is to afford protection against wind. Therefore the closer the trees are together and the denser the growth, especially at the bottom, the more effective are the belts.

To secure this condition states D. J. Crossley of the Dominion Forest Nursery Station, Indian Head, Saskatchewan, it is advisable to plant the trees close together and refrain from pruning of the lower branches, especially in the early stages of development. Belts should not consist of more than 5 or 6 rows spaced 4 feet apart or three rows if space is 8 feet apart. If 8 feet is left between the rows certainly the spacing in the rows should not exceed 4 feet. A close dense growing variety, such as caragana, should be used for the outside row in order to keep the belt closed from the desiccating effects of wind and sun.

Continuing from the time of establishment the most important feature is to keep the edges of the belt, to a width of at least 16 feet, in a continued state of cultivation. This means that fences should not be placed closer than 17 to 18 feet to the trees at the time of planting.

As the shelterbelts grow older they require periodic thinning in order to keep them in a healthy state of development. The tendency has been to leave the belts to more or less take care of themselves once they have become established. Consequently grass works in among the trees along the edge of the belts, robbing them of much needed sunlight; the amount of dead wood increases due to disease, insect injury, winter killing, etc., and generally speaking the belts become more or less unsightly. Attention should be given in the form of periodic thinning and marginal cultivation.

In the natural forest, thinning is going on all the time. If the survival of the fittest and if the sun does not take place among certain trees become so dense that it would be impossible for them to survive. As each individual tree grows it requires more room for the development of its crown, more soil nutrients, light and moisture. As there is only a limited supply of these factors of growth some of the trees must fall by the wayside so that the healthier specimens can go on. This natural weeding-out process cannot take place so readily in an artificially established belt, because, unlike a forest, it is composed of trees all of the same age, each with the same opportunity for survival. Thus weeding-out does not start until much later in life. This difficulty can be easily overcome with a little help from man.

After the trees have been growing for 15 to 18 years an inspection will reveal the fact that some are doing much better than others. The poor growth among certain trees can be attributed to various causes, such as disease, mechanical injury or inherent slow growth. These causes should be removed.

New Dom. Chemist Is Well Qualified

Clifford H. Robinson, Central Experimental Farm, Ottawa, has been promoted to the position of Dominion Chemist, Dominion Experimental Farms, Dominion Department of Agriculture, in succession to Dr. Frank T. Shutt, who retired in 1933. Since that time Mr. Robinson has been Acting Dominion Chemist until his recent appointment. He is well qualified for the important position of Dominion Chemist, both by virtue of his educational qualifications and experience. He was born in Lambton County, Ontario, attended the primary and secondary schools at Chatham, and matriculated into the University of Toronto from Dulton High School in 1905 after winning the Sir William Mulock scholarship in mathematics and science. In 1909 he graduated with first class honors with the degree of B.A. He took post graduate work in organic chemistry and in 1911 was appointed to the staff of the Dominion Chemist. From 1914 until 1933 he was Chief Assistant to Dr. Shutt and in that period he was principally in charge of food investigations and responsible for the methods for detection and estimation of adulterants in food. He also devised formulas and set specifications for inks used in the marking of foreign and domestic

MAKING GAY WITH FLOWERS

The best knowledge of gardening is to be obtained by watching and reading Nature. This requires patient study, and unless you are keenly enthusiastic, you would probably not know where to start. Once you get your garden going, you will begin to know instinctively the things to look for. You will want to try experiments for yourself, and gardening will become the absorbing interest for you that it is for so many. The main thing is to get started.

The garden all ready, soil nicely refined and levelled, what shall we put in?

Bear in mind that all flowers do not flourish on any one particular soil, so the way to succeed with your flowers is to grow those which are suited to your soil, and what succeeds in other gardens in your locality is a good guide in making a selection. When you get to know more about gardening, you will know how to adapt your soil to the flowers you wish to grow, but at first it is easiest to grow the flowers you know will like your soil.

Many flowers can accommodate themselves to a medium loam soil, such as is to be found in most gardens—neither too clayey, nor too light.

You cannot do better than start off with a few of the old favourite perennials—perennials being flowers that are completely hardy and can stand a severe winter. With the breath of spring you will find them shooting up year after year, and each year there will be more of them. They can be grown from seed if desired, but with perennials it is not necessary to nurse the seedlings as it is with annuals and half-hardy plants.

If you have friends with a garden most of them will gladly divide the roots of any perennial they have, as the thinning out process improves them. If left to grow too thick, the blossoms tend to deteriorate.

Tall Subjects

Take the tall ones first that you will plant at the back of the border. Delphiniums—the king of the summer border—are easy enough to grow, and can be procured in all shades of blue, from dark violet to Cambridge. If given plenty of space they grow strongly. They prefer a sunny position. The Japanese sunflower, with its delightful yellow blooms and black stems, is an acquisition to any garden. Its blossoms last from June until September. Helianthus—the dark bronze flower, with turn-down petals, is another profuse bloomer. Everybody finds room for the Michaelmas daisy, which can be had in all shades of mauve.

Anchus Drumore, with its vivid blue candelabra of flowers, like giant forms of forget-me-not, will grace any garden. The Magenta Agrostemma makes a good neighbour.

In front of these giants come the phlox and Sweet William. Campanulas—those dainty blue and white bells—if planted now will give you a fine show of blossoms in May, June, and July. Columbine, the delicate "Granny's Mutchers" are not all them in the North as they are behind. Get the long-spurred variety and you will never regret it. They prefer a moist spot in the border.

Lupin and Larkspur add more blue to the border, and so does the ordinary "flag" Iris. A more dainty member of the same family is the Spanish Iris, which blooms in early summer. Planted next to a clump of Oriental poppy, it is a thing of beauty, the dark purple blossoms being a perfect foil to the flaming orange of the poppy.

Package Bees and Their Care

Thousands of packages of bees will soon be coming into Canada from the Southern States and they will be expected to build up into good honey-producing colonies by the time the main honey flow from clover is ready to be harvested. To insure the success of these colonies, the bees before the autumn rains come, the bees will require special care from the time they arrive until they are well established in their new location. Bee-keepers who are expecting package bees this spring should get in touch with their nearest express agent or customs officer and arrange for immediate delivery of the bees when they arrive.

As soon as the packages are received, they should be put in a cool, shady place and the screening of the packages sprinkled with cold water or a very thin solution of sugar and water. This will keep the bees cool after their long journey. During the late afternoon or early evening, the bees should be released from the packages into the hives. Every shipment of package bees is accompanied with full instructions for releasing the bees. These instructions should be followed carefully. Bees-keepers who have combs of honey saved from the previous year's crop are fortunate, in that the bees may be released on them and extra feeding eliminated. If dry combs, or only foundation, are available then the bees will have to be fed until such time as they are able to secure sufficient food from the fields.

After the bees are installed, they should not be disturbed for at least a week, other than to remove the empty package and replace it with comb or foundation, and to see that the queen is released from her cage. She should be released within thirty-six hours after installing the bees. Unnecessary disturbance of package bees for the first two or three weeks after they are in the hives usually causes them to supersede their queen, and many a promising colony has been ruined through excessive curiosity. Methods of installation and care of package bees are given in Pamphlet No. 107, a copy of which may be had free upon application to the Dominion Department of Agriculture, Ottawa.

Sowing Beans

The seeds may be sown in drills, about three inches deep in heavy soils, but slightly deeper in light soils. It is preferable to sow them in broad, flat-bottomed drills, in two parallel rows about five inches apart. They should be sown in rows, and not in a single row, and alternating with, not opposite to, each other in the rows. The seeds should then be covered with soil, which should be slightly consolidated with the foot, and the surface finished with the rake. The fertilizers may be applied as top-dress at the same time. It is a good plan to sow a few seeds at the end of each drill in order to have plants available in the event of any of those in the drills failing to germinate. The distance between the rows may be two to three feet, but as other vegetables may be grown between the rows, which should run as nearly north and south as possible, this distance may be doubled or trebled according to requirements.

meat supplies, and also those used by the Post Office Department for the cancellation of stamps.

Under his direction as Acting Dominion Chemist, soil survey work of fruit growing districts in Nova Scotia was undertaken including intensive studies of orchard soils under various cultural treatments; animal nutrition research was extended to include vitamin research in live stock food supplements and a survey of starch content of potatoes grown in Maritime Provinces, associated with digestibility trials of various potato products, was made in order to take care of surplus.

Mr. Robinson is a Fellow of the Canadian Institute of Chemistry, a member of the Society of Chemists in Industry, the Canadian Society of Technicians, Agriculturists and the Associate Committees of National Research Council on Grain Research and Potato Research.

Suggest Pantotheric Acid For Plant Growth

An obscure substance known as pantotheric acid may be a universal growth elixir.

Preliminary experiments in which the weights of alfalfa plants were nearly doubled by placing minute quantities of this acid in the nutrient solution in which they were grown are reported in the proceedings of the National Academy of Sciences by Charles McBurney, Walter Bollen and Roger Williams of the staff of Oregon State College. This acid, they explain, apparently is a constituent of nearly all living tissue, plant or animal. Not only is it a growth stimulant but it plays a part in the fixation of nitrogen in the soil where it becomes available for plant life.

Nitrogen is taken from the air and fixed in the earth through the cooperation of the leguminous plants, such as alfalfa and clover, and certain soil bacteria. The later form nodules on the roots of the plants and at some stage of this process the nitrogen fixation occurs. So far as known the bacteria will not fix the nitrogen in the absence of the plants, and vice versa. The presence of the bacteria is necessary for the healthy growth of the plant.

The Oregon scientists found first that the bacteria produce his pantotheric acid. The amount produced increases steadily as the bacteria grow steadily.

Bright Annuals

For annuals, the seeds of which must be sown every spring, you have an immense choice. Always buy good seeds. It pays in the long run. A packet of Shirley poppy seeds broadcast in odd corners of the garden will make a bright patch of bloom in July, and you will find it difficult in the years to come to eradicate the self-sown seeds even if you want to.

For house decoration no flower can surpass the sweet pea. It is a little more trouble than the average annual, but all gardeners are fond of it. It is well worth the extra care it can be sown now under cover—in a cold frame or in a greenhouse—or a few weeks later out of doors. The place where you intend to plant them should be well trenched and manured. That is—dig down very deeply, throwing up the earth into a heap. Spread a layer of manure, and fill in; repeat the process three or four times. Get your pea sticks ready, although you need not place them until the plants begin to throw out their runners. When you do place them, see that they are well driven home, as they will have a lot of weight to bear when the sweet peas grow. They easily attain a height of 6 feet 6 inches. Some folks prefer them in rows; others in clumps. Some like to cultivate the different colours in different groups; others mixed colours. When the flowering season comes round you will need carefully to pick off the fading flowers each day to ensure continuous blooming.

Canterbury bells, scarlet flax, antirrhinum, nasturtium; cornflowers; marigolds—down spring to mind and eye when thinking of a garden. The only danger is trying to grow too many. It is fatal for flowers to be overcrowded. To look and grow their best they must have plenty of light and air. If you put a plant too near the fence, you will find it straining forward to greet the sun, some flowers gradually turn their heads and face the sun as it fulfils its orbit.

This need be no anxiety to start yet with vegetables, unless onions are to be raised under glass.

Progeny Test In Poultry Breeding

The progeny test, as carried out at the Dominion Experimental Farms is mentioned in the progress report just issued by the Division of Poultry Husbandry. Among a group of full-sister pullets some may be very good layers and others very poor, explains the report. The same is true of the transmitting ability of full brothers. Males cannot be judged, however, with any degree of certainty, except by testing them through their daughters' production. This is known as the progeny test, and all males used for breeding on the Dominion Experimental Farms are subjected to this test. Thus the cockerels used for breeding are kept until the following breeding season and rated on their progeny according to: (1) fertility and hatchability; (2) range and adult mortality; (3) egg production up to January or February; (4) egg weight.

Males that give poor fertility and hatchability are not used a second year. Such males are culled after the first breeding season. The range and adult mortality of different males may run from 10 to 50 per cent, or more. Males whose progeny have a high death rate are not used a second year, neither are their sons, even if the production of the surviving daughters is very high.

The males chosen for second-year breeding work, together with their sons, are those whose daughters come into production at from six or seven months of age, lay at a good and uniform winter rate, and have low mortality, and egg weights that average around standard size by January or February.

The Art of Making Maple Products

A proper supply of fuel is a matter of the utmost importance in maple sugar making. A quick flashing blaze is necessary to rapid boiling, and this can be obtained only with dry fuel. Wood is used almost universally, but in some cases coal is utilized to help out. Maple sugar makers near saw mills find that slabs are very satisfactory. Whatever fuel is used, it should be piled up in a dry place, and the amount of fuel required depends upon its kind and dryness. Ten cords of mixed hard and soft wood for 1,000 trees, or 35 cords for 4,000 trees are recommended by experienced makers.

In boiling syrup, more especially as it approaches the finishing point, the liquid has a great tendency to rise and froth in the pan, and, if not watched very carefully, at times it flows over the side. All maple sugar makers are familiar with this characteristic and with a means of combating it. In the days of old iron kettles, it was a rule to add a piece of fat pork a few inches above the normal boiling level. When the rising syrup touched the fat, it immediately subsided. Even yet, this time-honoured custom is followed, and when the pork is clean no serious objection can be taken to it. Unfortunately, however, maple sugar makers are not so particular as they might be about the quality of the oil or fat they use, as lard and drying fats are made up of in some camps. These substances, it need hardly be pointed out, tend to impart an undesirable flavour. In every case, a very small quantity of an oily substance is sufficient to quiet the frothing mass, and nothing will accomplish it more effectively than a bit of good butter or a few drops of sweet cream, neither of which will impart an undesirable flavour.

Artificial Brooding of Chicks

(Experimental Farms Note)

In the artificial brooding of chicks, there are a number of systems in successful use, such as the hot water pipe system, the force draft hot air system, the battery system and the colony house plan. Of these, under general Canadian conditions for the comparatively small grower, the latter system has proven the most satisfactory. For a source of heat, the coal burning brooder stove is by long odds the most popular, although for brooding in the late spring and summer oil and electricity has many advantages.

The brooder stove is best used in a portable colony house which may be moved from time to time throughout the season to assure the chicks having fresh, uncontaminated ground over which to range. Don't overcrowd. A 10 x 12 house will accommodate 200 to 300 chicks nicely at the start. Be sure to supply sufficient heat at all times to assure the comfort of the chicks. They should be kept as may be for comfort but should always have a source of heat where they may go to rest in a temperature of about 100 degrees.

No thermometer is as good an indicator as the chicks themselves. Their actions will tell you whether they are comfortable or not. When the chicks rest contentedly in a circle just outside the canopy of the stove, you may know that the temperature is right. If they are not warm enough they will quickly tell you by their disconsent. Ventilate freely and their crowding to the source of heat, if too hot they will get as far from the stove as possible or go around with their beaks open panting for breath.

It is better to err on the side of too much heat rather than too little particularly in the early season.

When the chicks are first put in the brooder, use a fine mesh guard to circle the hover a couple of feet from the edge. When they become used to the source of heat, the circle is enlarged and finally removed giving them the run of the entire brooder. Ventilate freely but avoid draughts. For further information write to the Department of Agriculture or to your nearest Experimental Farm for Circular No. 78 "The Brooding and Rearing of Chicks."

Canadian Poultry In U.K. and the U.S.A.

Canadian dressed chickens are appreciated in the United Kingdom and there is a potential market in the United States for Canadian live fowl. With reference to the latter, an interesting observation was made by R. E. Brining, manager, export poultry department, of the well known Chicago packing company, at the recent meeting in Ottawa of the Associate Committee on Market Poultry. "While the United States presents a very broad market for poultry," said Mr. Brining, "it should be realized it is an agricultural country as well as Canada. There were very adequate supplies of practically all classes of poultry, chickens, turkeys, ducks and geese. However, Canada was very fortunate in being able to take advantage of the market at different times of the year. Canada's heavy producing section is Ontario which is very close to some large American markets like Buffalo, Detroit, Rochester, and Boston. These cities are big consuming markets in the United States, and the heavy poultry producing section of Canada has a big advantage in transportation over the United States where the heavy producing section in the central western country was 800 to 1,500 miles away from the large consuming centres."

There was also a large outlet, continued Mr. Brining, in the United States for live fowl produced in Ontario. There was no question in his mind, he said, but that Canada could take advantage of the American market at different times of the year so far as live fowl was concerned. There were certain seasons of the year when advantage could be taken of the market in dressed poultry but he thought the biggest possibility for Canada in the United States was the live fowl market which would greatly improve the value of fowl in Canada.

Make High Quality Fertilizer in Canada

Fertilizers are manufactured in Canada on a much larger scale than in any other country. Sulphate of ammonia, ammonium phosphate, superphosphate, cyanamide, organic and mixed fertilizers are all made in large quantities. The capacity of Canadian plants for the manufacture of these products is much greater than prospective domestic requirements for some time. As the industry is comparatively new in Canada the latest equipment and processes of manufacture are in use resulting in high quality products.

As Canadian crop production becomes more intensified and diversified more fertilizers will likely be used, but the extent to which these products are used in the Dominion is rather small in comparison with other countries. For example, the annual requirements in Canada amount only about 200,000 tons. In the United States 3,750,000 tons are used; 1,500,000 in Great Britain; 3,500,000 in France and 6,000,000 tons in Germany.

Barley a Leader As Livestock Feed

Barley is the greatest cereal crop in Canada from the standpoint of producing livestock feed units per acre, writes H. R. Hare in the Economic Annalist, the bi-monthly publication issued by the Agricultural Economics Branch, Dominion Department of Agriculture. A study of the long-time average yield of this crop, computed on a total digestible-nutrient basis, reveals that no other crop in any province of Canada attains to the high standard set by this cereal. Thus, compared with wheat, oats, and rye as a producer of feed units, barley excels its nearest competitor by more than 10 per cent in four provinces and in some provinces surpasses oats and rye as a feed producer by 30 per cent or more.

In the three prairie provinces, where in most years two-thirds or more of Canada's barley crop is produced and where the live stock feeding enterprise is steadily becoming more important, the feeding value of barley is of particular significance. If feed value, however, were the only factor which influences the acreage seeded to barley in Canada, no doubt the acreage in succeeding years would tend to increase more rapidly than it has done. One of the counter-balancing factors influencing farmers in planning their acreage to be seeded in barley is the cash return per acre. For the harvest years 1930 to 1934, the average cereal yields of the prairie provinces multiplied by the average farm prices, show that wheat has exceeded other cereals in providing cash returns per acre. Wheat has had an advantage in providing cash returns per acre greater than barley's lead over wheat in producing livestock feed value. The superiority which barley possesses over other cereals in producing additional livestock feed value per acre should make an appeal to the cereal producer who is growing crops for feed purposes on his own farm, but will have little attraction to the farmer producing the cereal as a cash crop.

During the past few years, hog numbers on farms in some provinces have been dropping, but present indications point to increased interest in hog feeding. This activity will tend to change the attitude of cereal producers that, on the other factor which may have some influence in barley acreage will be the debt situation in the prairie provinces. Though debt adjustment legislation, designed to provide relief in this connection, has been successful in some measure, there no doubt will still be a tendency to direct attention to the cash enterprise from which early cash returns may be expected. These are factors which will influence future barley acreage. Undoubtedly it is to the economic advantage of Canada that barley be produced to relieve the pressure of wheat on grain markets and that it may be fed to live stock.

Suggested Grades For Potatoes

The grades suggested for potatoes produced within the Dominion at the fourteenth annual meeting of the Canadian Horticultural Council at Ottawa last week should be of interest in every potato-growing area.

The council suggested these grades:

"Canada No. 1": Sound potatoes of not less than two inches in diameter.

"Canada No. 2": Sound potatoes not less than 1 3/4 inches in diameter.

This grade would not be exported from the area east of Quebec.

"Canada Fancy": Including only potatoes which are bright, reasonably mature, well-shaped and sound and of a diameter not less than 1 1/4 inches.

"Canada No. 1 Small": For export only this grade would include sound potatoes not less than 1 1/2 inches nor more than 2 1/4 inches in diameter.

"Canada No. 1 Large": Filling requirements of "Canada No. 1" except the minimum size would be 10 ounces.

These concerned in the potato-trade have now an opportunity of sizing up these proposals and deciding whether or not they would benefit to the business.

The convention also urged effective legislation to maintain principles of the Natural Products Marketing Act. A fruit export board was suggested through amendment of the Fruit, Vegetable and Honey Act in the event that the act now before the Supreme Court of Canada, for constitutional ruling, be declared ultra vires.

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