THE FARM.

Desirable Characters in Grain Varieties.

The desirable characters of any variety are those that enable it to thrive in the environment in which it is placed, or give it commerical popularity. The undesirable ones are those that prevent it from achieving its best whether on the farm or in the market. According to conditions a desirable character in one locality may be an undesirable one in another.

In any kind of grain, yield is, and always will be, a desirable character, but in many localities the variety must primarily depend on other characters, such as drought resistance, early maturity and tightness of chaff, to give it value. In localities where conditions are less severe, these again may be of actual harm, as a larger yield could be obtained with a variety that was later in maturing, having a loose chaff and being more adapted to a humid climate.

Earliness exceeds yield in importance in all of the northern districts of Canada, and wherever it is a question of maturing grain before the time of frost.

Tightness of chaff in wheat is necessary wherever high winds prevail at the time of ripening as on our prairies. In Eastern Canada, however, where no loss is experienced from winds, and the threshers are not used to threshing tight chaffed wheat, considerable grain may be lost over the rear of the mill.

Varieties that have the ability to resist drought do not, as a rule, succeed where there is an abundance of moisture.

High baking strength is absolutely essential wherever wheat is grown for export, but for domestic use a variety may be grown to advantage that has only moderate baking strength, if it gives a high yield.

Thinness of hull in oats is a desirable character under all conditions. Hullessness in oats is only desirable for a few special purposes. The husk facilitates the commercial handling of the grain and protects the kernel from injury.

Beards on wheat and barley are most undesirable, but in the case of barley it has not as yet been possible to produce a beardless variety giving a yield that will equal the best of the bearded sorts.

Awns in oats are unnecessary, and are not in any way connected with yield.

The color of grain is most important, not that it has any intrinsic value, but because the market demands a certain color of kernel in wheat, oats and barley. This demand has arisen from the association of a certain color with an outstanding variety such as the red color of the Red Fife and Marquis wheats, etc.

Enough has been said to show the fallacy of the idea that any variety of wheat or oats or barley is superior under all conditions, to all other varieties. The truth is that every variety has its limitations, and it is up to the grower to produce a variety which possesses the characters that will enable it to thrive under his conditions. If in doubt, consult the superintendent of your nearest Experimental Station, or write directly to the Dominion Cerealist, Central Experimental Farm, Ottawa, describing your climatic conditions and requesting his advice as to the variety that will succeed best in your locality.—Experimental Farms Notes.

The Art of Plowing.

EDITOR "THE FARMER'S ADVOCATE":

I noticed some discussions in your columns last fall, regarding plowing competitions, which I then made note of and now propose to consider.

Plowing is one of the most necessary accomplishments that a young farmer should endeavor to make himself proficient in. There is nothing more pleasing to a good farmer's eye than a well and neatly-plowed farm. It is also *necessary* in order to combat successfully that great enemy of good crops—weeds.

We are sometimes advised through your columns that the single-furrow walking plow is much too slow, and should be discarded in favor of two and three-furrow gangs drawn by four horses or a tractor. I would like to say that for the average one-hundred-acre farm in Ontario I believe the single plow has a place and will continue to have a place for time to come. The larger plows are capable of doing good work under ideal conditions, such as level fields, which are free from stone and are laid out so the lands can be of good length; but we know that on most farms Nature did not plan the soil so that even regular fields can be arranged. Then we find that double plows do not work so well on side hills, and to make a presentable job in stony land is impossible. We also find some fields are irregular in shape, thus causing gores in the finishes, an unpleasant condition for large plows. We find that a single-furrow jointer plow, properly handled, will make good work under any of these conditions. However, there is a place for a double plow on most farms to help in preparing land for roots and in after-harvest cultivation of stubble fields; but for the major part of the plowing, a walking plow will be found to make the better work.

Many plowmen are prone to think that to blacken the field constitutes good work. The primary object in plowing is to cut the roots of any weeds and turn the soil over in order to pulverize it. We see that to turn a wider furrow than the width of the share makes it possible for weeds to slip by and continue their existence. It is very necessary to keep your skimmer set at the proper angle to cover any top growth and prevent a row of grass from growing between each furrow. We might also take a little more pride in making our "fearings" as even and level as possible and also, when practical, plow around the field to make our land-ends conform more with the rest of the field.

Regarding the idea of holding plowing competitions along the same lines as field crop contests, there are several things to be said pro and con. Possibly a few might be enticed to enter a competition of this sort in preference to a contest as held formerly; though it seems to me the practice of holding a field day is much to be preferred. Under the latter plan all competitors compete under similar soil conditions, and are more likely to be satisfied with the judges' decisions. It also tends to create a spirit of sporting rivalry when plowmen are lined up along side each other. Besides, we have the additional advantage of the public being able to examine and compare the work and benefit by the contest, which would be impossible if the work were scattered all over a township. However, we might benefit by some changes in the rules of plowing contests. It is not a real test of plowing ability when a plowman is allowed too much time. Plowing should be done at the rate of at least one acre in ten hours. We might also do without some of the fancy classes that use the old type of sod plow, and are entirely impractical under present-day conditions.

The forming of plowmen's associations in conjunction with agricultural societies would be a step that might well be more common. The importance of plowing among farm work cannot be too strongly emphasized.

Wellington Co., Ont. W. McK.

E. P. Bradt.

Mr. Bradt succeeds W. R. Reek as Secretary for Agriculture for New Brunswick.

How Much Corn Will I Sow?

There is a diversity of opinion as to the amount of corn to sow per acre in order to secure the best results for silage purposes. It is generally conceded that when growing corn for husking purposes, hill planting and having about four stalks to a hill gives the best results. In this case a bushel will plant between four and five acres. When the dent varieties are planted at this rate they produce a coarse stalk, but as a rule there are from one to two ears of corn to the stalk, and in a favorable season this corn will be fairly well matured before the frost arrests development. In some parts of the country corn for silage purposes is being planted quite thickly, feeders prefering the greater bulk to a fair percentage of ears. The thick-sown corn as a rule will produce more tons to the acre that will the thin sown. Some have the idea that to be mature there must be the ripened corn on the stalk. It is possible, however, for the stalk to mature without producing any ears. In the average season very few ears will be produced on thickly sown drilled corn.

The amount to sow per acre will depend upon the use to be made of the corn, the fertility of the soil, the method of planting and the germination of the seed. For silage purposes the aim is to secure as large a bulk of fodder as possible without loss of quality. For four years now experiments have been conducted on Weldwood Farm to ascertain the exact difference in yield and in feeding quality of thick-sown and hill-planted corn. The experiment was conducted on an acre basis in the season of 1918. The field was broken out of sod which had been in pasture for a number of years. A coating of ten tons of manure to the acre was applied in the spring and cultivated in. Southern corn of the Leaming variety was sown in drills thirty-six inches apart, and also in hills thirty-six inches each way. The results bear out the findings of the past three years. The thick-sown corn again gave the largest weight of feed. True, it did not contain the number of ears that were found on the thinner sown part. The field was kept cultivated throughout the season but it was not hoed.

One acre was planted in drills at the rate of fifteen pounds of seed per acre. The same amount was sown in hills on another acre. There was a considerable difference in the yield when it came time to ensile. By the way, the corn was sown on the first day of June and was harvested the second week of October. This piece had a slight frost before it was cut. Twenty-two rows across the field made an acre. The entire acre was not weighed, but the weight was taken of the corn which grew on two rows, or one-eleventh part of an acre. The yield on the part seeded at fifteen pounds in drills was ten and a half tons. There was an ear or two on practically every stalk and the corn was in the dough stage at the time it was cut. The acre alongside of this was sown at the rate of twenty-eight pounds of seed. There were a few fully formed ears on this corn and a number of nubbins. The yield was eleven tons to the acre. There were practically no ears at all on the lot sown at the rate of forty pounds per acre but there was a considerable difference in the size of the stalks. They were a lot finer but almost as tall as those on the twenty-eight pounds to the acre seeding. The yield of green fodder was twelve and one-quarter tons, thus it will be seen that the yield increased with the rate of seeding.

One acre was sown in hills at the rate of fifteen pounds of seed. This corn grew quite coarse and stood up well, although some of the other corn went down so badly it had to be cut one way only. The grain was in practically the same stage of maturity as that sown at the same rate in drills. The yield, however, was just a few pounds over eight tons to the acre. This is a difference of two and a half tons in favor of drill planting. We cannot account for this difference as the same kind of seed was used, and the soil was practically the same. We did not have the thicker rates of seeding in hills this year. We have not had an opportunity of comparing the feeding value of the different rates of seeding. In 1915 when a chemical analysis was made of the corn as taken from the field, and also of the silage, the thick-sown was almost equal in feeding value to that of the hill planted, but the yield per acre was considerably in favor of the drill-sown corn.

Our large field of corn was sown at the rate of twenty-three pounds to the acre. This gave a particularly uniform stand which did well throughout the entire season. The above figures are the results as we obtained them. The thick seeding in drills gave us the largest weight of feed of the three rates of seeding. The difference in cost of seed between sowing at the rate of twenty-eight and forty pounds per acre would be $1.07 when the corn cost $5 per bushel. The heavier seeding, however, gave a ton and a quarter per acre more feed. If silage is worth $4 per ton this would amount to $5 worth of feed for the extra $1.07 spent for seed. There was not so great a difference between the fifteen and twenty-eight per acre seedings. It is quite possible that the same difference would not be obtained on lighter soil. The field on which the experiment was tried was a good clay loam. At the Central Experimental Farm we understand that the corn is sown in drills at the rate of about thirty pounds per acre.

When seed is high in price there is a tendency on the part of too many to seed lightly. There is also a tendency to buy a cheaper grade of seed, regardless of the germinating quality. A few dollars saved in seed has in more than one instance resulted in almost a failure with the crop. No matter what the rate of seeding, it is important that the germination be high. When buying seed it is well to know how it has been handled, and also to know what it will germinate. If the germination is only eighty per cent., a fifth more seed will be necessary than if practically every kernel will grow. As the seed may deteriorate between time of purchase and time of planting it is advisable to test the seed just previous to planting. It is the intention to plant the main field at Weldwood this year in drills at the rate of twenty-eight pounds of seed per acre. A portion of the corn land will be planted at about half this quality per acre and a part at nearly double the amount so as to make further comparison. In both a wet, dry and medium season the drill sown corn, has given a greater weight of feed, than the same rate of seeding in hills, and it is easier on the binder when cutting. As to cultivation it would be an advantage to be able to cultivate both ways if the soil was weedy. However, when thickly sown corn gets a start the weeds have little chance to flourish if the cultivator is properly handled and used regularly.

What Canada's Fields Produced in 1918.

The Dominion Bureau of Statistics has issued the definite estimate of the yield and value of the principal field crops of Canada for 1918 as compared with 1917. The statement is given herewith:

Yield of Field Crops.—The total yield of wheat for Canada in 1918 is returned as 189,301,350 bushels from 17,353,902 sown acres, an average yield per acre of 11 bushels. In 1917 the corresponding figures were 233,742,850 bushels from 14,755,850 acres, a yield per acre of 15¾ bushels. The yield of oats in 1918 was 380,273,500 bushels from 14,790,336 acres, an average of 25¾ bushels per acre, as compared with 403,009,800 bushels from 13,313,400 acres in 1917, an average of 30¼ bushels per acre. Of the remaining grain crops the total yields in 1918, with the figures for 1917 in brackets, were in bushels as follows: Barley, 77,290,240 (55,057,750); rye, 8,496,700 (3,857,200); peas, 3,110,100 (3,026,340); beans, 3,568,380 (1,274,000); buckwheat, 11,428,500 (7,149,400); flax, 5,972,200 (5,934,900); mixed grains, 35,730,309 (16,157,080); corn for husking, 14,214,200 (7,762,700); potatoes, 104,512,700 (79,892,000); turnips, etc., 130,989,600 (63,451,000). Hay and clover, 14,681,400 tons (13,684,700); fodder corn, 4,776,000 tons (2,690,370); sugar beets, 180,000 tons (117,600); alfalfa, 446,400 tons (262,400). The average yields per acre of these crops with last year's averages in brackets were in bushels as follows: Barley, 24½