

What Crop Shall We Grow?

It does not follow, because a certain crop or variety produces more bushels per acre that it is the most desirable one to grow. In the case of oats, for example, a given sort may have such an undue thickness of hull as to cause it to yield less in real nutritive material per acre than a sort yielding fewer bushels per acre. In a trial by Prof. Chas. A. Zavitz, at the Ontario Agricultural College, covering nine years, the hull percentage in four varieties was as follows: Joannette, 23.8; Daubeney, 25.1; Early Dawson, 34.6, and Pioneer, 38.6. One hundred pounds of Joannette would, therefore, produce an average increase of meal over that produced from 100 pounds of the Pioneer variety, of 14.8 pounds. In average yields per acre for five years, these varieties ranged as follows: Daubeney, 87.44 bushels; Early Dawson, 66.73; Pioneer, 71.55; and Joannette, 79.63. Some of the largest-yielding varieties are also some of the thinnest-hulled sorts. Why not grow oats combining these two good qualities? As Prof. Zavitz remarks, it will surely pay us to look into the subject and see what manner of oats we are growing. Some very extensively-grown new oats, like Early Dawson, Storm King, Dodds' White, and Tartar King, are comparatively of poor quality, because of the thickness of hull. Pioneer is another very thick-hulled oat. Then, there is another strong point to be considered. In a wise system of farming, as a rule, a great proportion of the field crops are used for feeding on the farm, so as to retain fertility and sell more refined products. We should ask what crop will give us the greatest food value? A table is given, showing that, while the average yield of oats in Ontario for 28 years past has been 35.6 bushels, in comparison with 27.7 for barley, yet the barley actually produced 120 pounds of grain per acre more than the oats. Compared with oats, winter wheat, spring wheat, peas, buckwheat and rye, barley topped the list in productiveness. In digestible constituents per acre, field peas surpassed all others in protein content. Barley and oats did not vary greatly in that respect; but, in the amount of digestible carbohydrates, barley headed the list, with 920 pounds per acre, on the average, more than oats. When one considers the value of barley in the feeding ration for hogs and cattle, and the superior value of barley as a nurse-crop for clover, we do well not to put all our acres into oats because the threshing tally shows a big yield of bushels.

Sowing Mixed Grains.

Experiments conducted over a series of years at the Ontario Agricultural College show that suitable varieties of barley and oats, mixed in the right proportions, produced over 200 pounds of grain per acre more than either of the grains when grown separately. Whenever flax, emmer, spring wheat or hullless barley were added to the standard mixture of oats and barley, it decreased the yield per acre, even though a greater amount of seed was used in each case. The average results of ten years' trials go to show that the greatest number of pounds of grain per acre were produced from the mixture of one bushel oats (34 pounds) and one bushel barley (48 pounds), or a total amount of 82 pounds mixed seed per acre. Sixteen other different combinations were used in the trial. Another point of interest brought out in two distinct experiments was that the largest amount of seed gave comparatively low results in grain production. A mixture of five pecks of oats and five pecks of barley was surpassed by a mixture of three pecks each by an average annual yield of over 87 pounds per acre of grain. The mixture of one bushel oats and one bushel barley surpassed the mixture of five pecks of each by an annual yield of practically 200 pounds per acre. For this purpose, a very early variety of oats with a six-rowed barley should be used, or a very late barley with an ordinary-maturing variety of oats, so as to secure even ripening.

The tabulated results of a four-years' trial shows that, prior to 1910, the combination of Mandscheuri barley and Daubeney oats gave a greater grain yield per acre than any other mixture. With the results of 1910 included, Mandscheuri barley and Alaska oats, one bushel each, headed the list, with an average yield of 2,551 pounds of grain per acre, by 25 pounds over the other mixture. Of nineteen different combinations, the two referred to are the only ones that gave an average total yield of over 2,500 pounds of grain per acre per year. The mixture of Mandscheuri barley and Banner oats was surpassed by the mixture of Mandscheuri and Daubeney oats by 107 pounds of grain per acre per year. While there appears to be a decided advantage in growing different cereals together, there seems to be no marked advantage from growing different varieties of the same class in combination.

A point of importance to be considered in this connection is the possible effect of this extra five bushels per acre of grain taken from the land for new clover seeding. Will the latter be as good? The clover catch is an essential. Are

the results as favorable when seeded with the mixed grains as with oats or barley separately? What say the experimenters?

A Well-known Cement-block Silo.

Interest in the silo question quickens apace. Cement-block ones are becoming rather numerous. Strength and economy are the two main points concerning which assurance is sought. One of the earlier cement-block silos in Canada was built by R. A. Penhale, of Elgin County, Ont., who, in 1907, built one 16 feet in diameter inside, by 40 feet in height, the estimated capacity being 200 tons of silage. The owner thus described it in "The Farmer's Advocate" in 1908:

"The material used was sixty barrels of cement, fifteen cords of gravel and sand, one thousand feet of reinforcement, and ten bushels of white lime. Three men spent 12½ days making blocks with a concrete-block machine. The masons charged 40 cents per hour, and the helpers 20 cents per hour. The size of the blocks from foundation up to about one-half the height was 8x10x16 inches; balance to the top, 8x8x16 inches. The blocks were made on the ground by the block machine, and were laid up by city masons the same as any cement-block structure, with an iron rod laid in a groove formed in the block to secure same, every third course, the rod making a complete circle or hoop; a three-eighths-inch rod will answer the purpose well. Regarding cost of hollow concrete-block silo, as compared with solid concrete, I am of the opinion that the hollow-block silo will cost a little more. I think it will be just as durable, amply strong, and rather more desirable."

In reply to a recent inquiry as to how this silo was standing the test, Mr. Penhale writes us as follows:

"Our cement silo is standing the test of time satisfactorily. There is not a crack or a check in it as yet. It is certainly all we expected or could desire, and I would, without any hesitancy, recommend the building of a cement-block silo. The cost I would estimate to be in the neighborhood of ten to twenty per cent. more than the slop silo, but for me I think it is more than worth it. Since our silo was built, there have been several built in this section, and they all are built with cement blocks, and are giving good satisfaction. You will note below the detailed cost of material and labor of our silo when built a few years ago. It being an experiment, at that time, it cost more than it should cost to build it to-day. You will also notice that the price of cement was higher than it is at the present time. I would not use so much ¾-inch iron, but would use mostly ½-inch iron, which would reduce cost of iron, and also some labor. I would also reduce cost by not using so many ten-inch blocks. Two feet above the ground would be ample for a 16 x 40-foot silo; for a less size, I would use only eight-inch blocks. Cost of silo 16 x 40 feet:

60 barrels cement, at \$2.10	\$126.00
10 bushels white lime, at 25c.....	2.50
15 cords sand and gravel, at \$3.....	45.00
500 feet ¾-inch iron (round).....	7.72
250 feet 7-16-inch iron (round).....	3.35
250 feet ½-inch iron (round).....	2.55
12½ days' work, 3 men, at \$7.....	85.75
5 days' work, 3 men, scaffolding and plastering, at \$5.00	25.00
2,400 blocks, laying up, at 5c.....	120.00
Total	\$417.87

"We estimate the capacity to be about two hundred tons. I may say that it takes fifteen acres of good corn to fill it. To my mind, it is very important to have a good foundation, and five or ten dollars extra spent in a good foundation is good economy."

"We have a cement floor, and it has proven to be all right. I might add that, before we built cement silo we had wood-stave silos standing on the same place, and, in excavating to the depth of four feet for the foundation, we found that the clay was permeated with very disagreeable stench from the leaching of the old silo, down the full depth we went. How much further it went, we do not know, but it thoroughly convinced me of the advantage of a cement bottom."

Experiments as to the effect of weeding and hoeing on mangels, by University College, Reading, for three years, gave the following results: Singled only, 21 tons per acre; once hoed, 32 tons; twice hoed, 36½ tons; kept clean by hoeing, 36½ tons; kept clean by hand weeding, 37½ tons. In addition to the extra crop, weeds were also prevented from going to seed that would have greatly prejudiced succeeding crops.

Flax growing has fallen off in Ireland because it is not an essential crop in a rotation, and the farmer is influenced by one consideration only, viz., the net return to be secured. When prices fell, he simply stopped growing it.

Traction Engines Upon the Highway.

Editor "The Farmer's Advocate":

In reading your journal, some time ago, I noticed a question to this effect: Why do threshermen not have a dust-collector attached to their machines, thus making the work of threshing more agreeable? The writer also stated that he would be willing to pay an extra fee for operating it.

To the thresherman with enterprise enough to invest his money in an outfit to do custom work, this is a fair proposition, and one likely to be taken advantage of if he desires to keep busy during the season, by securing the greatest number of jobs possible.

Your paper commendably champions the cause of the farmer in getting his work done with dispatch and the least possible labor, providing it does not interfere with the quality of the work done. The demand for labor-saving machinery has brought out in recent years a threshing machine with a self-feeder, straw-cutting attachment, wind-stacker, chaff-blower, dust-collector, high weigher and bagger, or a grain-blower. While this machine weighs nearly as much again, or more, as the old-style carrier machine, it does away with more than half the men formerly employed at the threshing. The objection that a machine up-to-date in all respects costs more, is met with the answer that cast iron and steel is cheaper than elbow-grease. The majority of farmers patronize the new-style machines.

Since steam power is the best for threshing purposes, and, as from twelve to fourteen horse-power engines were used to operate the old-style separators, I think an engine of twenty-four horse-power not too much to do the work as fast or faster than before these machines were used, and have a little reserve power for unfavorable circumstances. A twenty-four horse-power engine, properly proportioned, will weigh about twelve tons, and, on account of its weight, it must propel itself and be able to draw the separator from place to place, using the roads and bridges the same as the travelling public.

But, look here, Mr. Thresherman, if you cross a highway bridge, you are a law-breaker, and liable to be prosecuted. The law requires that no greater weight than eight tons be put upon a bridge at one time. Oh, well, you say, I'll get a twenty-horse-power engine—one that weighs below the limit required. In other words, you will use a horse weighing thirteen hundred pounds to do the work that requires one fifteen or sixteen hundredweight. The engine will have a short life to live, but it will not cost as much. The sooner it is dumped on the scrap-heap, the better for the manufacturer, who will replace it with a new one, and relieve you of your money. Has this anything to do with bringing the threshing business into disrepute, and is it the reason there are as few of millionaire threshermen as of the proverbial hen's teeth?

But the trouble does not end here. The law requires that planks a certain width and thickness be laid the full length of the bridge in the path of the rear wheels. This applies whether the engine weighs eight tons or one. The law does not specify whether the thresherman may carry the plank on his engine or on his back, nor does it forbid him to take it all apart and carry it over piece by piece. I suppose this is left to his option.

Now, what I would like to know is this: If such machinery is required by the farmer, why should the thresherman be treated like a beast of burden by having such laws on the statute books? The only reason that such a lopsided law exists, I suppose, is because it is rarely enforced. If it was, its unreasonableness and impracticability would become apparent. The threshermen of Ontario would do well to take a hint from the Western farmers, who probably think that the way to get legislation in their favor, and get it soon, is to agitate a little. Now, while I do not defend the thresherman's right to make himself noxious by wantonly breaking bridges, yet he should be allowed the same freedom upon the highway as any other traffic. I know that the use of plank does protect the floor of a wooden bridge, but let them be put in place permanently by the pathmasters or overseers, instead of asking traction-engine owners to carry them.

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Thresherman and Farmer.

[Note.—The Ontario law regarding traction engines provides that no traction engine exceeding 20 tons in weight shall be used on the public highways. Where a traction engine not exceeding 8 tons in weight is used for threshing or road construction, the municipality is responsible for the strength of bridges over which it may pass, but the owner of the traction engine is required to protect the floor of bridges and culverts from injury, using suitable plank for this purpose. Where the traction engine exceeds 8 tons in weight, the owner of it must cross the bridge at his own risk, and is responsible for any injury he may do to the bridge. He is not, however, a law-breaker until the traction engine exceeds 20 tons in weight.—W. A. McLean, Provincial Engineer of Highways.]