Filling the Silo at Annandale Farm.

It is well known by farmers that it makes a big difference in the feeding value of a crop how it is saved. Take, for instance, hay. It may be worth double as much well cured as when spoiled by weather. It is even more so in regard to silage. While it is not always possible to make perfect ensilage, owing to weather conditions and to uncertainty of getting machine for filling the silo, the nearer we can come to the ideal, the better will our silage be.

When to cut, would be the first question. If the corn is cut too green and is immature, it will cure with a strong acid flavor, and when fed will be rather laxative, and the feeder will therefore not be able to feed as much in the ration; but where a large quantity of straw is to be fed, this is not a very great drawback, and it would be better cut a little too green, according to my experience, than to run any danger of frost. Corn that has been frozen, while it will make better fodder put into the silo than if handled any other way, will not make perfect ensilage. The degree of offness will, of course, be the damage done by the frost, and how quickly it is tended to afterwards. There is very little of our country where the corn gets too ripe, still, in some places it does, and it does with me. Corn that is too ripe or has been frozen, and gets too dry, develops too much heat in curing, and will make more waste than if green. Corn should be well mixed at all times, the leaves being mixed with the heavier stalks; but this is absolutely necessary where the corn is dry or overripe, as the leaves will form a mold and dry out too much. However, with overripe corn the greatest loss will be that the grain in the feed, which is the most valuable part of it, is not so digestible. Of course, that means a great waste of the most valuable part of the ensilage.

Where we have a large quantity to put in, and our own power to do it, we do not put on such a large staff of help, but take more time to fill the silos, and therefore sow our corn at different intervals, giving us, also, a better chance to cultivate it, and our work does not all come in at the same time. I am able to make about the best ensilage it would be possible to make, as our land is very suitable for corn, and we have our own help and power for putting it in. After considerable of the corn gets ripe enough for roasting, then we expect to start to fill about a week later, or here about the first of September. In filling the silo, it will save considerable labor in putting it in, and make it settle more evenly, to keep changing the blower pipe so that it will not all fall in the one place, but, as much as possible, keep changing it so that every part of the silo will, at some time or other, have the corn drop on it, as it is very much more solid where the corn drops than it can possibly be tramped. Owing to it being almost impossible for everybody to get the machine just at the time he wants it, a good many have their corn put up in large stooks, where it can remain standing for a week or two. Of course, this means a lot more work, as it is just as much work putting it into these stooks as it is putting it on the trucks. I like to have low trucks and a long rack. Then, when putting the corn onto the wagon, if there are only two men to load, both should be on the ground, one loading from the front end, and one from the hind end. They will not then interfere with one another, and can put it on straight, which will make it come off much easier; and the finish of the load is always in the center, so that when it comes to unloading the two men can start in the center and work to the ends. Sometime the driver stands on the wagon and the other man hands it up to him. A little thinking will readily show one that this makes just double the work, as the man who is on the wagon has to handle each bunch of it, and it would be just as easy to take it with a fork off the ground as it would to take it after another man had put it on, and, of course, having every man placing the corn in its proper place on the wagon, saves half the labor and men. A good stout, short-handled fork is the best for loading it on the wagon. It saves the back and hands. We do not have a man in the silo all the time, because our silos are so deep that the corn in dropping would almost pelt a man's head off, but we keep changing, so that the corn drops in different places, and every little while get into the silo and see that the leaves do not all go into one corner. After we get the silos over half full we are more particular about keeping the stuff thoroughly levelled down and mixed, and it would be well to keep the very greenest corn for the very top of the silo, and, if cut very fine, it will make less waste when it comes to uncovering the silo. Also, if water is put over the top of the silo, and if tramped down, in about a week after filling it, there will be less to take off in opening the silo. Some have put a lot of salt over the top of their silo, with good effect. The heat in the silo dries out the top, and the more it dries out, the more waste. While filling the silo takes a good deal of help, still, as I have figured it up, it means really less labor than it would be to care for a corn crop in any other way, and the beauty of the ensilage is that it is just about as good to feed a year or five years after as it is when filled, whilst corn standing outside loses every day after being cut. Whilst corn fodder may make good feed early in the fall, yet it is doubtful if it has very much feeding value after January. I had a good instance of that. Having more corn than we put in the silo, we had large stooks out in the field, and, not needing it for feed, it remained there all winter, and the only way I could get rid of it was to burn it off, and as there were some stumps in that field that we wanted to get out, we carried the stooks of corn onto the stumps. Four men would not carry a stook of corn in the fall as easily as one could in the spring, from which it would be seen how much moisture it had lost, and how indigestible it had become. GEO. RICE.

Winter-crop Variety Tests at Guelph and Throughout Ontario.

In "The Farmer's Advocate" of August 23rd was an article quoting from the 1905 annual report of Prof. C. A. Zavitz, Experimentalist at the Ontario Agricultural College, and giving the varieties of wheat that had yielded best in the experimental plots at the College during the past ten years. Since that issue of "The Farmer's Advocate" appeared we have received the circular of the Ontario Experimental Union, which gives average yields to the end of 1906 and data based upon the past season's work. From the circular we quote as follows:

Owing to the deficient snowfall and the alternate freezing and thawing of the ground during the past winter, most of the autumn-sown crops in the Province suffered considerably. As a consequence, some of the fall wheat was plowed under in the spring, and many of the fields which were left yielded rather uneven crops. Quite a number of the co-operative experimenters reported a total failure with winter vetches and winter wheat, and in several cases even the winter rye was somewhat injured. At the College both wheat and rye came through the winter well, but the subsequent growth of the wheat was not as good as might have been expected, and, on the whole, the yields were somewhat lower than those of last year.

EXPERIMENTS AT THE COLLEGE.

The following table gives the average weight per measured bushel, and the average yield of straw and grain of each variety for ten years:

Variety.	Color of Grain.	Weight per bush. (lbs.).	Straw per acre (tons).	Grain per acre (bush.).
Dawson's Golden Chaff	White	59.7	3.3	54.0
Imperial Amber	Red	60.5	3.8	52.3
Early Genesee Giant	White	59.7	3.5	50.7
Russian Amber	Red	60.7	3.6	50.4
Egyptian Amber	Red	61.2	3.7	49.6
Early Red Clawson	Red	58.9	3.2	49.5
Tasmania Red	Red	61.5	3.3	47.7
Rudy	Red	60.8	3.0	47.1
Tuscan Island	Red	61.0	3.3	47.0
Geneva	Red	62.2	3.3	45.9
Bulgarian	White	60.5	2.9	45.1
Turkey Red	Red	61.1	2.9	44.8
Kentucky Giant	Red	61.0	3.0	44.6
McPherson	Red	62.0	2.9	44.2
Treadwell	White	60.4	2.9	44.2

Among the sixty-one varieties grown this season, the Abundance stood first in yield with 50.4 bushels per acre, and the Prize Taker second with 50.2 bushels. These are both white wheats, very closely resembling the Dawson's Golden Chaff in all respects. The Abundance also gave the highest yield among all the varieties grown in 1905, and is a promising variety, although not of the very best milling quality. It is interesting to note that this year two of the comparatively hard red wheats—Russian Amber and Imperial Amber—have come up to second and third places in yield of grain, with 49.8 and 49.4 bushels per acre, respectively. All four varieties mentioned above were over the standard in weight, the Imperial Amber being the heaviest, and weighing almost 63 lbs. per bushel. The five varieties giving the heaviest weight per measured bushel in 1906 were Northwester, Geneva, McPherson, Economy and Auburn; these, however, were all rather low in yield, with the exception of Auburn, which was fifth in weight per measured bushel and sixth in yield of grain per acre among the sixty-one varieties grown. Generally speaking, the white wheats yield more grain per acre, possess stronger straw, weigh a little less per measured bushel, and are slightly softer in the grain than the red varieties.

STRAINS OF SELECTED SEED.

At the present time efforts are being made to obtain improved strains of some of the best varieties by systematic plant selection, and while the ordinary seed of Dawson's Golden Chaff gave a comparatively lower yield than usual this year, three new strains of this variety, obtained by the above-mentioned method, each gave a much higher yield than any of the varieties in the regular test.

Much work is also being done along the line of cross-breeding, and it is expected that some profitable results will accrue from this work in the near future. During the past year, many hundreds of hybrid plants were grown, and, judging from present indications, some of these are destined to become the progenitors of very valuable new varieties. For this work only the very best of the standard sorts are used as parent stocks. Among these might be mentioned the Dawson's Golden Chaff, Bulgarian, Turkey Red, Imperial Amber, and Tasmania Red.

GOOD SEED IMPORTANT.

The results of twelve separate tests made at the College show an average increase in yield of grain per acre of 6.8 bushels from large as compared with small seed, of 7.8 bushels from plump as compared with shrunken seed, and of 35.6 bushels from sound as compared with broken seed. Seed which was allowed to become very ripe before it was cut produced a greater yield of both grain and straw and a heavier weight of grain per measured bushel than that produced from wheat which was cut at any one of the four earlier stages of maturity. In 1897, and again in 1902, a large amount of the winter wheat in Ontario became sprouted before it was harvested, owing to the wet weather. Carefully-conducted tests showed that an average of only 76 per cent. of the slightly-sprouted and 18 per cent. of the badly-sprouted seed would grow and produce plants. Surely he is the wise farmer who will sow none but large, plump, sound, ripe seed of good vitality.

FORMALIN TO PREVENT SMUT.

In each of seven years experiments have been conducted in treating winter wheat in different ways to prevent the development of stinking smut, and the results have been very satisfactory. In the average of the past three years, untreated seed produced 4.4 per cent. of smutted heads, while seed which was immersed for twenty minutes in a solution made by adding one pint of formalin to forty-two gallons of water, produced a crop which was practically free from smut. Not only did the formalin treatment effectually prevent the development of the smut in the crop, but a considerably larger yield of grain was obtained when the treatment was applied. The average yield of grain for the three years from untreated seed was 38.7 bushels, while the crop grown from seed to which the formalin treatment had been applied yielded 45.6 bushels per acre. This indicates a gain of about seven bushels per acre in favor of the treated seed. Several other methods of treating seed for the prevention of smut were tested, but the formalin method herein described was the cheapest and most practical of all.

THICKNESS OF SEEDING.

Many tests conducted at Guelph indicate the importance of sowing about ninety pounds of winter wheat per acre on an average soil. This amount might be increased for poor land, and decreased for rich soil. If the land is in a good state of cultivation, it matters but little whether the seed is sown broadcast or with a tube drill; but if the land is dry or lumpy, that which is sown with the drill is likely to give the best results. The highest yields per acre have been obtained from sowing between the 26th of August and the 9th of September.

VARIETIES OF RYE.

Common winter rye and Mammoth winter rye have been grown for seven years in succession, the Common giving an average yield of 57.9 bushels, and the Mammoth 59.3 bushels of grain per acre. Among five varieties grown for the past three years, the Mammoth White stood first with an average yield of 66.6, and the Washington second with 61.7 bushels per acre. Winter barley has been grown at the College for several years, and, when it is not winter-killed, gives very good yields. This season it made a poor showing in the spring, but recovered from the effects of the unfavorable winter, and yielded 58.5 bushels per acre. Hairy or winter vetches produced an average yield of 10.2 tons of green crop per acre in the experiments of four years, and 6.7 bushels of