

No Variation in Stored Grain

Experiments Show Farmers may Hold Wheat Without Loss through Shrinkage

In handling grain the question of an increase or decrease in weight after threshing is often before the farmer and the dealer. Many farmers believe that there is a decided loss during storage, and are willing to sell at a lower price at harvest time than later, even though storage cost them nothing.

To secure information along this line, an experiment has been conducted at the Utah Agricultural College Experiment Station. While the results obtained may not hold good for all conditions, they can be used as an indication of what will probably take place under conditions somewhat similar.

No.	Grain	Moisture, 1911	Moisture, 1913	Gain
		Per cent	Per cent	Per cent
1	Wheat	6.51	9.25	2.74
2	Wheat	6.48	9.23	2.75
3	Wheat	6.98	9.30	2.32
4	Wheat	7.33	9.31	1.98
5	Oats	6.25	8.57	2.32
6	Oats	6.12	8.24	2.12
7	Wheat	8.67	9.28	0.61
8	Wheat	7.34	8.99	1.65
9	Wheat	6.72	8.95	2.23

Wheat and oats were used in the experiment. They were taken directly from the threshing machine and placed in sacks, holding a little over two bushels. The bags of grain were stored in the college barn, on a platform, around which air could circulate freely. The experiment was begun on August 17, 1911, and continued for two years. The bags were weighed once a month and the same scales were used throughout. Contrary to expectations, there was a gain in weight instead of a loss. A gradual increase in weight occurred during the fall and winter until a gain of from three to five per cent had been made. A decrease in weight, never amounting to more than two per cent, commenced in spring and continued into the autumn, when the weight began to increase again. During the second winter the grain was even heavier than during the first, while in the second spring there was a falling off again, as in the previous year.

The results of the experiment do not show any consistent difference due to method of harvesting or of agriculture—whether by irrigation or by dry-farming. The stages of maturity and dryness are probably the chief factors in determining changes in weight. In every case there was a gain in weight during the winter, and a loss during the summer, but the grain weighed less at thrashing than at any later period. The above table shows the actual weights at the beginning and at the conclusion of the experiment.—F.C.N.

Cultivation to Kill the Weeds

Extra Work Pays for Itself in Larger and Cleaner Crops

One of the best methods of eradicating weeds—a source of enormous loss to farmers—is as follows: Immediately after the hay or grain harvest, plough the land very shallowly with a gang plough, turning a furrow two or three inches deep. Then put on a heavy land roller which will pack the soil and thereby hasten its decay; next use the disk and follow with the smoothing harrows. Should any weed growth appear, keep the disk and harrows going at short intervals until the soil is well decayed. A cultivator with broad points may then be used. The object is to destroy all weed growth until autumn, when the soil should be ploughed thoroughly and well set up to the winter's frost.

On such land it is not so slow some kind of hoed crop, such as roots, corn or potatoes, that requires constant hoeing and cultivating during the growing season. If this method of cultivation is adhered to closely, it will be found to be one of the best means of eradicating noxious weeds and also of preparing the soil for future crops.

Actual experiments have demonstrated that a much greater yield may be expected from land cultivated in the foregoing manner, as compared with that secured from fields which have been left in soil and ploughed in late autumn. In one instance two four-acre plots were cropped with oats for purposes of comparison, and the plot which had been thoroughly cultivated during the autumn yielded 60 bushels more than was secured from the land not so cultivated. The net increase in revenue, after making due allowance for cost of cultivation, amounted to \$14.00.

A similar experiment was conducted with sugar beets on two plots—one cultivated after harvest, the other spring-ploughed. In this case the difference in yield was even more noticeable than with oats. It was found that the land cultivated occasionally during the autumn produced beets at the rate of 114 tons per acre, while the yield from spring-ploughed land was only 84 tons per acre. Stated in dollars and cents, this difference is very convincing; figured at the prevailing price for beets, it showed a greater revenue from cultivated land of \$16.03 per acre.—J. F.

Notable Progress in Wood Treatment

Increasing Use of Impregnated Ties and Poles in Canada and U. S.

The most notable progress yet recorded in the chemical treatment of timber to prevent decay was made during the last year. In the United States, 93 wood-preserving plants consumed in 1913 over 108,000,000 gallons of creosote oil, 26,000,000 pounds of zinc chloride, and nearly 4,000,000 gallons of other liquid preservatives. This material was used to treat over 153,000,000 cubic feet of timber, or about 23 per cent more than in 1912.

Impregnation of wood with oils and chemicals to increase its resistance to decay and insect attack is an industry which has become important on this continent only in recent years. In Great Britain and most of the European countries practically every wooden cross-tie and telephone or telegraph pole receives preservative treatment. In the United States, of the 135,000,000 cross-ties annually consumed, less than 30 per cent are treated, and the proper treatment of an annual consumption of 4,000,000 poles is scarcely commenced.

In Canada the practice of using preservative treatment for ties is of very recent origin. The first important plant was built by the Dominion Tar & Chemical Company at North Transcona, about five miles east of Winnipeg, Manitoba. This plant is operated under a contract with the Canadian Pacific Railway Co.

In 1910, practically no treated ties were used by Canadian railways, whereas in 1911 about 206,700 ties received chemical treatment before being placed in the roadbed. This number, while forming only 1.4 per cent of the total number of ties used, was nevertheless, an indication of the increase in this particular form of conservation. In 1912, a total of 1,818,189 ties were chemically treated, forming 8.5 per cent of the total number of ties purchased. Steam railways used 1,798,189 of these treated ties and electric roads used 20,000.

The slow growth of the idea of timber preservation has been due to the large supply of cheap and durable timbers and the general disregard shown toward economy in the use of natural resources. These conditions, however, are changing rapidly, and a steady increase in the use of wood preservatives is to be anticipated.

Forest Protection on Lower Ottawa

Large Increase in Area and in Number of Fire Fighters

The Lower Ottawa Forest Protective Association, which was organized last spring, has had a very active season, due to the periods of May, July and August. The association employs 49 permanent rangers, four inspectors and as many temporary labourers as may be required for the control of individual fires. During the dry spell in May, more than 500 extra fire fighters were on duty at one time in the employ of the association. Since the organization of the association the area protected by it has been increased by 2,000 square miles, through the accession of new members. The total area now guarded is 11,812 square miles, or upwards of 7,500,000 acres. The association has recently secured convictions against 40 settlers in the Ste. Agathe, Mont Laurier, and Maniwaki districts for setting fires without permits and it is expected that these convictions will result in greater care with such fires in the future. In all probability, the excellent results secured by the Lower Ottawa and St. Maurice associations will lead to the formation of similar associations in other sections of the country.—C. L.

Use of Spraying to Destroy Dandelions

The Ontario Agricultural College has been conducting investigations for several years with the object of discovering some less laborious method of eradicating dandelions than spudding them out. Very encouraging results have been achieved by spraying with iron sulphate. A 20 per cent solution is used and it has been found that six sprayings during the season will kill over 90 per cent of the weeds. In spraying lawns, the solution may be applied with a hand sprayer or a watering can with a very fine rose, so that all dandelions will be thoroughly drenched. About 48 hours after application, the dandelion leaves will be found to be blackened and burned. These can be raked up and the plot left for about two weeks till new leaves appear, when another spraying may be given. No permanent injury is done to the grass, but white Dutch clover is almost entirely killed. The process has the further merit of being inexpensive.

It should be mentioned that other experimenters, both in the United States and Canada, have not found iron sulphate satisfactory for the destruction of dandelions, but the results obtained at the O. A. C. warrant giving it a trial on badly-infested lawns.

TO NEWSPAPERMEN

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