Winter Wheat for Seed

An interesting experiment in regard to the germination of fall wheats has been conducted by W. C. McKillican, of the Dominion Seed Branch at Calgary. One year's tests indicate that winter wheats should be held one year before being used as seed.

Mr. McKillican reports his tests to THE FARMER'S ADVOCATE as follows :

" In making germination tests of Turkey Red winter wheat I have often observed that the result was disappointing, *i. e.*, wheat that looked sound and good would be slower in germinating than one would expect. The opinion is occasionally met that the crop of winter wheat does not do as well when put in immediately after harvest as when seed a year old is used. To arrive at something definite, the following experiment was conducted. Twenty samples of good-looking sound Turkey Red winter wheat were chosen. These samples were of the crop of 1908, and had been first tested in January, 1909, about four months after being harvested. They were from all parts of the province of Alberta, and most of them were seed fair prize winners, but when tested for germination they gave rather disappointing results. They have been stored for a year, and have now been tested again in January, 1910, about sixteen months after harvest.

" The results as shown in the accompanying table are most striking. Without exception they have given a good test in the second trial. The striking part is the rapidity with which they germinated. In the first test, while a fair percentage ultimately grew, the germination was very slow, as indicated by the four-day test. In the second test, not only was there a greater percentage germination, but practically every live seed started in the first four days. The fact that every sample out of the twenty gave the same result would indicate that there must be some definite law at the back of this; at the same time I should like to see the test repeated another year before coming to any definite conclusions."

Alberta Red wheat. Crop of 1908.	Tested, January, 1909. Percentage germination		Tested, January, 1910. Percentage germination	
Sample No.	in 4 days.	in 10 days.	in 4 days.	in 10 days.
597	32	78	99	99
672	30	79	99	99
683	30	77	97	97
686	59	87	97	98
692	25	81	96	97
695	47	85	92	93
712	31	81	96	97
713	33	77	94	94
715	26	82	97	97
782	25	83	96	96
817	44	86	88	88
822	27	87	94	940
825	23	85	92	93
881	27	94	95	95
889	19	93	100	10
891	19	88	97	97
905	15	84	99	99
947	55	89	99	99
950	16	73	98	98
957	14	69	93	95
Average of 20 samples	29.35	82.9	95.9	96.25

Harrow and Pack

EDITOR FARMER'S ADVOCATE :

I have noticed several letters in regard to using packers, some advocating one way, some another, and some not at all. Allow me to explain my way of packing the soil. I tie a spare horse on the land not hitched, but simply tied to the off horse so that it does not interfere with the other horses. I let this horse drag one section of a harrow. With a sulky plow, the horse walks over and harrows five times every two rounds; with a two-gang plow the horse walks over and harrows three times every two rounds. I find that this packs the soil at the time it is plowed. One stroke of the harrows afterward is all that is needed, and it conserves the moisture. The horse treading on the land is, in my opinion, better than any packer I have seen. I have seen some at work with a harrow fastened to the plow, but though that does some good, it is the horse treading the land which does the most good.

Sask. JOSEPH COPE.

DAIRY

To the Interest of Every Factory

The question of supply of raw material to the cheese factory and creamery is a first consideration; the finished product in paying quantity and of good quality is mainly dependent on a large supply of good milk and cream.

As the supply is also of importance to every director of any dairy company, every factory owner and every maker, such men should see to it that each patron is interested in cow testing. Once a patron begins testing each cow individually he commences to take far more interest in the herd generally and is likely to supply not only more milk and cream but far better quality, and cared for better. In many herds the milk yield has been increased by twenty and even thirty per cent. in three years through a knowledge of each animal's capacity, which led to weeding out the poor cows and feeding the good ones a little better. Is it not to the advantage of every factory to see its patrons prosperous? If farmers supply more milk or cream from a given number of cows, or from a certain number of acres, it means that the factory receives more raw material from the same territory, thereby lessening the cost of hauling and lowering in proportion the expense of making, while a longer factory season is possible as the milking period is extended.

Factory officials are invited to recommend cow testing to all their patrons. If a list of names and addresses be sent to the dairy commissioner, Ottawa, literature on the subject will be mailed direct. C.F.W.

What is a Cow Worth?

The professor of dairying at the Illinois State Experiment Station has been carrying on some inquiries as to what a dairy cow is worth, and has published a bulletin on the question, replete with numerous tables which on analysis are found to contain a good deal of information. In the bulletin some 22 questions are answered, the points covered being the following :

(1) Value of the cow at first freshening. (2) Value of cow for beef at end of life. (3) Difference of milk produced. (5) Pounds of milk produced. (5) Pounds of skim milk, 85% of whole milk. (6) Value of skim milk at 20 cents per 100 pounds. (7) Value of each calf (bull, heifer), average. (8) Value of manure at an average price of $1.50 per ton. (9) Total value of skim milk, calf and manure. (10) Cost of labor. (11) Interest, taxes, insurance and repairs on barn. (12) Service fee. (13) Interest, depreciation on cow. (14) Veterinary service, medicine and spraying materials. (15) Depreciation on dairy utensils. (16) Total expenses of labor, housing, service fee, interest and depreciation on cow and utensils. (17) Does skim milk, calf and manure pay labor, interest and depreciation on cow ? (18) Pounds of butter-fat in 4% milk. (19) Value of butter-fat at 27 cents per pound. (20) Cost of feed per cow. (21) Profit from butter-fat over feed. (22) Total profits per cow.

These different problems are solved thus : (1) For a cow producing 2,000 pounds of milk, $30.00, increasing it with $5 per cow for every 1,000 pounds increased yield up to 6,000 pounds, and $10.00 for every 1,000 pounds increase above that. We thus get $40 for a 4,000-pound cow, and for 6,000 pounds $50, for 10,000 pounds $90, and for 15,000 pounds $140.

The 6,000-pound cow is valued at $50.00 and her feed at $42, an investment of $92. She netted, after all expenses are deducted, $20.46, or about 22%. In the table the 10,000-pound cow is valued at $90, and her feed at $50, in all $140, which netted $64.53, or about 46%.

(2) The value of a cow at end of life is placed at $30 for the $30 cow, down to $25 for the $45 cow (yielding 5,000 pounds of milk). The answers to 3, 4, 5, 6 and 7 depend to a large extent on the individual cows.

(8) Value of manure is placed at from $13.50 up to $20.

(9) The total value of skim milk, calf and manure varies in the table from $19.90 for the 2,000-pound cow to $85.50 for the 15,000-pound cow.

(10) Cost of labor commences at $17 for the 2,000-pound cow, increasing 50 cents for every 1,000 pounds more up to 8,000 pounds, and then $1 up to $25.50 for the 15,000-pound cow.

(11) A barn for 40 cows is valued at $2,000, or $50 per cow, and 5% interest, with taxes, insurance, repairs and depreciation put at 3%, in all 8%.

(12) Bull service $2.

(13) Depreciation is charged at about 4%; total expenses (10) to (14) vary from $25 to $59.52, and seem high. Questions 12 to 19 are effected largely by local conditions, but calf, skim milk and manure as figured here, applied to payment of labor, depreciation, interest, etc., show a loss of $5.40 on the 2,000-pound cow, rising to a profit of $653 on the 10,000-pound cow and $25.98 on the 15,000-pound cow; which does not appear altogether clear.

(20) The cost of feed varies from $34 to $60 and is based on an increase of $2 for every 1,000 pounds of milk which leaves $30 as the maintenance cost of a dry cow.

(21) The profit (or loss) on value of fat with cost of feed deducted varies from $12.20 (loss) for the 80 pound cow, balancing with the 137 pound cow, and rising from 80 cents profit for the 140-pound cow to $58 for the 400-pound, and $102 for the 600-pound cow. The pounds referred to in this case mean butter-fat per year.

(22) The total profit (or loss) for cow shows a loss of $17.80 for the 2,000 pounds milk (80 pounds fat) cow with a profit of $1.01 for the 4,000 pounds milk (160 pounds fat) rising to $64.53 for the 10,000 pounds milk (400 pounds fat) and $127.98 for the 15,000 pounds milk (600 pounds fat) yielding cow.

Phenomenal Dairy Record

A Holstein cow owned by the dairy department of the University of Missouri in one year produced more human food in her milk than is contained in the complete carcasses of four steers weighing 1,250 pounds each. The cow that performed this feat of producing the equivalent of four steers in the year produced 18,405 pounds of milk. Below is given the amount of proteids, fat, sugar, and ash contained in this milk and the amount of the same substances found in an analysis made of the carcass of a fat steer weighing 1,250 pounds.

Proteid	552 lbs.	172 lbs.
Fat	618	333 "
Sugar	920 "	...
Ash	128 "	43 "
Total	2,218 lbs.	548 lbs.

The total amount of dry matter in the milk was 2,218 pounds, all of which is edible and digestible.

The steer, with a live weight of 1,250 pounds, contained 56 per cent. of water in the carcass, leaving a total of 548 pounds of dry matter. In this dry matter of the steer is included hair and hide, bones and tendons, organs of digestion; in fact, the entire animal, a considerable portion of which is not edible. This cow produced proteids sufficient for more than three steers; nearly fat enough for two; ash enough to build the skeleton for three, and in addition, produced 920 pounds of milk sugar worth as much per pound for food as ordinary sugar.

There figures show the remarkable efficiency of the cow as a producer of human food. It is because of this economical use of food the dairy cow and not the steer is kept on high priced lands. When land is cheap and feed abundant the meat producing animals predominate, but when the land becomes high in value and feed expensive the farmer turns to the dairy cow.