

care and attention
sive system of farm-
real tangible success
ars of tedious effort.
ntipathy which the
tock is founded on a
common to the pion-
is is the belief that
ceptional in its com-
ture, which history
lication in all other
on his own farm or
will never become
rudest methods are

which is inevitable,
g almost necessary
agriculture of every
raising is along the
l, barring accidents,
st returns.

ite undoubtedly has
that it is unsuitable
live stock has been
be able to grow as
done in the East and
a is produced more
has been abundant
fields of fodder corn
Other feed crops
and will no doubt
future.

he requisite suitabil-
make the best use of
ndry, with live stock
place of the present
rm of agriculture.
ever, many farmers
ing their operations
ersified agriculture,
sive methods only
he farm be increased
nd maintained on a
men live stock are as
nt as the companion-
ther human friends.
oundings and atmos-
; their thoughts and
their work, acquire
hem to conduct their

it of profit, though
nor importance. It
n dollars and cents,
rudent methods are
s which, though not
y the trained eye be
forms.

A. COOPER.

Fifty Cents per

oline tractor in July
t a cost of \$125.00,
ouble disked about
ven-foot disks, and
ay. The actual ex-
\$100.00.

of owning an outfit
crop as soon as it is
k. In my opinion it
vantage of a farmer,
ing a half-section or
ese outfits.

e is required for a
run both engine and
wages of an engineer,
raw team. I have
oing from 1,000 to
200 bushels oats per

M. W. RANDALL.

on Experimental

notes on the season's
grain crops on the
i have been prepared
Murray :
g pretty well closed
Experimental Farm
vest, brief considera-
cured may be of in-
usual in several
was very cold and

respects, in that the spring was very cold and very little until the 10th of May, and the late summer and fall months were very dry. The late start in the spring no doubt had its disadvantages, but since the weather was so unusually favorable after growth started, crops of all kinds seemed to be but little behind their usual stage of development by the middle of June. After this date in some parts of Manitoba, lack of rain began to be felt, but in the Brandon district, as in some others, there was ample until the middle of August. During August the weather was so extremely dry and excessively warm, that grain ripened too quickly and yields were less than they would have been under less trying conditions.

WHEAT VARIETIES

We had this year only fifteen varieties of wheat under test, and of these there are only a few of general interest. The highest yielder was a bearded variety called Pringle's Champlain, closely resembling Preston and suitable for the same conditions. The number of days from planting to ripening, and the yield per acre of several of the most important varieties follows:

Variety.	No. of days maturing.	Yield per acre Bush.	Lbs.
Pringle's Champlain.	100	50	10
Preston	100	48	30
Riga	98	45	50
White Fife	106	44	20
Marquis	99	43	20
Red Fife	104	40	10
Chelsea	96	37	10

Of the varieties here mentioned, Riga, Marquis and Chelsea are probably least known. Riga is a very early wheat that usually yields less than it did this year and is suitable for sowing only where better varieties are likely to be frozen. Chelsea is a wheat of fairly good quality, stiff straw, early and with a longer, thinner kernel than Red Fife. Marquis is a bald red wheat closely resembling Red Fife in appearance, but last year was nine days earlier and this year was five days earlier. It is a wheat of good milling quality, and from limited trials has an unusually good record.

In the field lots of wheat we had this year six varieties. Since these fields were not all under uniform conditions the yields are not strictly comparable. The highest yield was from four acres of Marquis, where over 200 bushels was harvested; a similar field of Chelsea yielded about 37 bushels per acre. Practically all of the crop on summer-fallowed land was lodged, and was not only more difficult to harvest but was also a poorer sample than it would have been had the crop been lighter. The finest piece of wheat on the farm was grown on corn stubble, six acres yielding 238 bushels. The corn land is not plowed or cultivated after the corn crop is removed, but in the spring is harrowed once or twice, and the grain sown without distributing the stubble. When the grain crop comes off the stubble has practically all rotted away. A good grain crop on corn stubble treated in this way is dependent upon having applied manure to the corn crop and cultivating the corn during the growing season to clean the land.

TESTS WITH OATS

Twenty-five varieties of oats grown this year varied in yield from 119 bushels 2 pounds per acre, to 66 bushels, 16 pounds per acre. The highest yielder this year was Improved American and the lowest Storm King. The five highest yielding varieties at this farm for a number of years past are:

	Bushels.	Lbs.
Improved American.	123	29
Banner.	122	3
White Giant	118	15
Danish Island.	117	15
Golden Beauty.	116	18

None of these are early varieties and the last named is a very late sort. Daubeney is a good early oat that has been grown here for several years. It is not as heavy a yielder as the varieties above mentioned, but is well adapted to sowing very late in the season in a mixture with barley, or in a district where late varieties do not mature. Orloff, another early variety tried this year for the first time, gave very satisfactory results.

SOIL PACKERS WITH OATS

In order to gather some information regarding the use of soil packers, two different makes have been used under different conditions during

the past year. Among other trials, a piece of land that was in millet in 1908 was divided into six equal parts, spring plowed and packed in different ways, and one part being left as a check. Following are the results:

Preparation of Land.	Yield per acre. Bushels.	Lbs.
Surface after sowing.	111	26
Surface, once, before sowing.	106	16
Sub-surface, twice, before sowing.	104	4
Sub-surface, once, before sowing.	100	20
Not packed.	90	

This land was a heavy clay loam situated in the river valley, and is quite retentive of moisture. The rainfall was ample for growing purposes until early in August. It is unfair to draw conclusions from the results of one trial, but incomplete as they are, they do not lack interest.

BARLEY RESULTS

The field crops of barley are all of six-rowed varieties, Mensury and Odessa, but a number of two-rowed sorts are tried also in smaller lots. Canadian Thorpe is at the head of the list of the two-rowed kinds this year, but Swedish Chevalier has given a higher average yield. Mensury among the six-rowed varieties continues to give a good account of itself. The average yield of this variety is 61 bushels 22 pounds, and that of Odessa 63 bushels 40 pounds. Mensury is rather earlier and has a somewhat stiffer straw than Odessa. We have had a new variety, O. A. C. No. 21, under trial two years, and it has given very good results. In 1908 it was the only variety we had under trial that was not lodged, and yielded 56 bushels per acre. This year its stiff straw was not so apparent, as many varieties were not lodged, but it headed the list in yield at the rate of 73 bushels 36 pounds per acre. This variety is a selection by Prof. Zavitz, of Guelph, from Mandscheuri barley, and has given excellent results in Ontario and elsewhere.

SOIL PACKERS WITH BARLEY

The packing experiment conducted with oats was repeated under the same conditions with barley with the following results:

Preparation of land.	Yield per acre. Bushels.	Lbs.
Surface after sowing.	67	44
Surface, once, before sowing.	62	14
Surface, twice, before sowing.	59	8
Sub-surface, once, before sowing.	56	12
Sub-surface, twice, before sowing.	59	28
Not packed.	54	38

DAIRY

Interest in Figures

Farmers, do you keep records? It is doubtful if there is any one thing that will add more to the interest of farm labor, or make its usefulness more apparent in shorter time than one simple method of figuring. For instance, supposing that mixed farming is followed, an answer is desired to the query: Which pays best, sheep, poultry, cows, steers or grain? It may be found after a year's record that the farm is best adapted for dairying. Then will naturally follow the investigation, which cow pays best? This phase of the question has not yet appealed to all owners of dairy herds, but is in truth at the very foundation of profitable dairying.

Every farmer is interested in cutting out all unprofitable features of his business; he wants to produce plenty of good milk at the least cost, and to this end dairy records are indispensable. Why? Simply because they enable the watchful owner to detect those cows that give the most milk and fat in proportion to the feed consumed. Which cows will respond to a little extra grain? Which cow can I least afford to sell? Are any in my herd not paying? Will it pay me to get a good pure-bred sire? The dairyman needs to know such points definitely, hence he must keep records of feed and milk. Forms are supplied free on application to the Dairy Commissioner, Ottawa.

Defects of Farm Butter-Making

After making a special study of farm butter-making the dairy department of the New Hampshire Experiment Station prepared a lengthy bulletin, No. 141, pointing out conditions found to exist in that State and discussing important factors in such way as to correct some of the most common, faulty practices. The general conclusions arrived at were:

1. A large quantity of butter is still made on New Hampshire farms, principally due to: (1) poor transportation facilities, making it difficult to ship milk; (2) a widely scattered population, making creameries difficult to operate; (3) the small dairy herds kept; and (4) a special demand for good dairy butter at high prices.

2. The demand in nearly all localities is greater than the supply.

3. The price obtained for butter varies from 20 to 40 cents per pound, with an average price for the state of 28.5 cents.

4. The cost of equipment varies from \$15 to \$600, the most common cost varying from \$90 to \$150.

5. A good deal of the farm butter made, although often selling for a high price, is of low grade, especially lacking in uniformity and keeping quality. The principal reasons being:

a. Lack of equipment, especially in the way of suitable building or specially equipped rooms. Only eight per cent. of the farms visited had a special room or building used exclusively for the dairy work.

b. Lack of cleanliness in the stables and during milking. In a number of cases people did not realize that the care and cleanliness exercised in the stable and during milking is fully as essential to the production of good butter as the care and cleanliness exercised in the manufacture of the butter.

c. Insufficient control of temperature. Only 33.3 per cent. of the buttermakers made provision for ice, 4.1 per cent. had running spring water, while the rest had no means of regulating the temperature of the cream during storing and ripening, nor the temperature of the wash water. Altogether too little use was made of the thermometer.

d. Cream too old and too sour. Reports received from buttermakers show that 25.8 churned once, 58.4 twice, 11.2 per cent. three times, and 4.6 per cent. either four or six times a week. It is exceedingly difficult to make good butter when churning is done only once a week, as the cream gets too old and often too sour before churning. It is recommended to churn at least twice a week, and even then it is necessary to be able to control the temperatures of the cream either by using ice or cold spring water in order to make good butter.

e. Too high churning temperature. The churning temperature being too high is often responsible for the dull appearance, poor body and poor keeping quality of the butter, and also for an excessive loss in the buttermilk. Losses in buttermilk varied from .05 to 1.5 per cent.

f. Overchurning and overworking. By churning the butter into large lumps, a great deal of buttermilk is incorporated, causing a rapid deterioration of the butter. Overworking, although not as commonly practiced, tends to give the butter a dead, worn appearance and a poor body. In no case should the hands touch the butter during working and packing.

6. The overrun (pounds of finished butter in excess of pounds of butterfat) varied from 4.7 per cent. to 19 per cent. with an average of 13.4, which is 3 per cent. below the estimated amount of 16.4 per cent., or 1 1/4 pounds of butter from each pound of butterfat.

7. The most common defects in farm butter are (1) rancidity, due to the cream being too old or sour, too high ripening temperature, or the butter not being sufficiently protected from heat and light and (2) poor flavors, absorbed by the cream, during storing and ripening, and by the butter when kept near strong smelling food stuffs, (3) mottles, as a result of too much buttermilk being incorporated, the action of the casing on the salt producing the uneven color.