

In regard to the account, we did not keep expenses exactly, but have close knowledge of our feeding, and I have taken pains to put the doubt against the cows, instead of in their favor. Hay in this county (Albert) last winter went begging at the price I have charged, with the possible exception of choice timothy, and a lot of ours is ox-eyes and wire-grass. The one-quarter acre corn was a very poor crop, less than ten per cent. germinating. Our pasture costs us practically nothing, but we share it with the young cattle of the whole parish.

There is a discrepancy of somewhere near 200 pounds between butter churned and what the amount of fat indicated, which is largely explained by milk and cream used in family, whole milk fed to calves, some little sold and given to neighbors, etc. Also, we missed two or three tests in the press of the summer's work, when the milk was not so good as in fall and winter. We aim to test in middle of each month, sampling night and morning mess. It is too much muss and fuss taking composite sample continually.

HILLGROVE FARM—J. H. COLPITTS & SON.

June 1st, 1908, to May 31st, 1909.

Cow.	Age.	Total		Per	Lbs.
		Lbs.	Cent.	Butter-fat.	
No. 1.....	4 yrs.	6,178.5	5.65		349
No. 2.....	6 yrs.	5,311.4	5.98		318
No. 3.....	8 yrs.	8,298.2	3.74		310
No. 4.....	2 yrs.	6,027.1	4.5		271
No. 5.....	6 yrs.	7,425.8	4.7		349
No. 6.....	3 yrs.	6,583.1	5.12		337
No. 7.....	2 yrs.	5,128.7	5.7		292
Total		44,955.8			2,226

BUTTER CHURNED.

June, 1908	290½ lbs.
July	255½ lbs.
August	250 lbs.
September	228 lbs.
October	185 lbs.
November	130½ lbs.
December	102½ lbs.
January, 1909	71½ lbs.
February	134 lbs.
March	232½ lbs.
April	234½ lbs.
May	293½ lbs.
Total	2,407½ lbs.

EXPENSE ACCOUNT.

Dr.		
15 tons of hay		\$ 90.00
5 tons grain fed		150.00
1 acre peas and oats		20.00
¼ acre corn		5.00
165 barrels turnips		50.00
Pasture, turnip-tops, etc.		20.00
Total		\$335.00

Cr.		
Butter		\$550.00
Milk and cream used in house		22.00
Whole milk fed to calves		4.00
Skin milk and buttermilk at 20c. cwt.		80.00
Total		\$656.00
Expenditure		\$335.00

Profit balance

Average price of butter through year, a small fraction under 23 cents.

No account taken of colostrum, or any milk not fit to manufacture.

We keep a few pigs, and they yield us a small profit. We keep a few sheep, and they pay their way. We keep a few hens, and, by very careful handling of the figures, we can make the accounts balance. But the cows pay all their expenses, find grease for all creaking axles, and keep the pot boiling. Long live the cow!

We highly prize "The Farmer's Advocate." It is excellent in all its departments; not one but is read with interest, pleasure and profit. I often feel a wish to take a hand in the discussions which from time to time arise, but the days are full of work, and the nights bring weariness. I was especially pleased with the editorial answer to a "Moderate Man," in the local option discussion. It is a matter for hearty congratulation to the farmers of Canada, that at the head of their greatest journal are men of such sentiments and principles. This county de-legalized the traffic sixty years ago. The Scott Act has been the law for more than half that time. It is sufficient tribute to its working that, in all that time, no one has even tried to start a petition for its repeal. I heartily agree with your article on agricultural education, in the issue of June 24th. I earnestly hope our Government will not waste money on any such lines as marked out by your New Brunswick correspondent.

Albert Co., N. B. J. H. COLPITTS

GARDEN & ORCHARD

Bordeaux Mixture for Potato Blight.

Nearly every potato-grower now has to spray to kill bugs, but few adopt any precautions to guard against the attacks of blight and that form of rot which is associated with and developed from the same spores as the late blight; consequently, blight exacts heavy toll from our potato fields, not only reducing the quality and yield by causing premature dying of the tops, but endangering heavy loss from rotting of the tubers, depending considerably upon the season. There are two forms of blight which attack potatoes, known as the early and the late blight, though the so-called early blight which usually makes its appearance early in July may appear late as well as early. It appears in spots having concentric rings irregularly over the leaf. The late blight is not so prevalent as the early blight, but spreads much more rapidly, and the spores produced by it, finding their way to the tubers in the hill, infect them, causing them to rot. In Ontario and Quebec the late blight usually appears between the middle of July and the first of August, though sometimes later.

Both forms of blight are spread by spores. Neither can be cured, but both may be prevented from doing any noticeable injury by keeping the vines coated from the middle of July on with a simple spray, called Bordeaux mixture. This destroys the spores of the blight, falling upon the leaves before they can gain entrance to the tissues of the leaf. With the first, or first and second sprayings, some poison, such as Paris green or arsenate of lead, may be combined with Bordeaux to kill the potato bug, and the less conspicuous which does considerable damage in hot weather by eating small holes through the leaves. The Bordeaux will cause the poison to adhere better than it otherwise would do, thus increasing its value as an insecticide. At the same time, the lime in the Bordeaux lessens the danger of injury to the leaves by an excess of soluble arsenious acid, which occurs most abundantly in the poorer samples of Paris green.

For potato-spraying, Bordeaux mixture may and should be made with a larger amount of bluestone and lime than for spraying fruit trees. Likewise, the amount of poison used should be greater.

For potato spraying, when insects as well as blight are being combated, the following formula is recommended:

Copper sulphate (bluestone)	6 lbs.
Lime	5 lbs.
Paris green	8 ozs.
Water, one barrel	40 gals.

Arsenate of lead, at the rate of 3 pounds to the barrel, may be used instead of Paris green. At the quantity required it comes a little higher, but adheres better (at least when each is used alone), and may be applied in almost any strength, either with or without lime, without danger of injuring the foliage. It comes in the form of a paste, which should be worked up into a thin, milky consistency with water before being applied. If Paris green is used it should be reduced to a thin paste with water before being poured into the barrel.

Once more we reprint directions for preparing Bordeaux mixture. Follow them carefully if results are expected:

Dissolve the copper sulphate (by suspending it in a wooden or earthen vessel, containing 4 or 5 gallons of water). Slake the lime in another vessel. If the lime, when slaked, is lumpy or granular, it should be strained through coarse sacking or a fine sieve. Pour the copper-sulphate solution into a barrel, or it may be dissolved in this in the first place; half fill the barrel with water; dilute the slaked lime to half a barrel of water, and pour into the diluted copper-sulphate solution, then stir thoroughly. It is then ready for use. (Never mix concentrated milk of lime and copper solution.)

Stock solutions of copper sulphate and of milk of lime may be prepared, and kept in separate covered barrels throughout the spraying season, but Bordeaux mixture deteriorates with age, and should be used as soon as made. The quantities of copper sulphate, lime and water should be carefully noted.

The cost of spraying potatoes is not large. With a modern spray pump, having potato-spraying attachment, a large area can be covered in a day. With proper appliances the total cost for the four sprayings usually necessary would range from four to six, or, perhaps, seven dollars per acre, including wages for two men and a horse. At least one of these four sprayings is necessary for bugs, and the extra cost of material for the Bordeaux mixture would be slight. The average of three years' experiments at Ottawa resulted in a gain of 94½ bushels per acre from spraying for blight. At 40 cents a bushel this would represent \$37.80, or at a net profit of \$32.28 per acre. Ac-

cording to this the benefit from one acre in an average year would more than buy a spray pump. Co-operative experiments by farmers in New York State have been quite as convincing.

Blight is not equally troublesome every year, but is usually far more prevalent than most of us have any idea of. It would richly pay Canadian potato-growers to adopt spraying for blight as a settled policy. Try it this year.

Orchard Cover Crops.

It is now about time to sow a winter cover crop on the orchard which has been given clean cultivation up to date, as most orchards should receive, but too few do. The objects of a cover crop are:

1. To secure a growth to hold the snow and provide a protection for the roots of the trees during winter.

2. To check the late growth of wood and induce the earlier maturity of that which has been produced.

3. To take up soluble fertility in the late part of the season that would otherwise leach or wash away. This being converted into plant tissue, along with the nitrogen which a leguminous cover crop will obtain from the atmosphere, forms a material to be plowed down the next spring and converted into humus and plant food. Sowing leguminous cover crops is a cheap way of enriching an orchard.

4. Land on which a cover crop has been sown will dry out more quickly in spring, owing to transpiration of moisture by the leaves of the cover crop. It may then be plowed more early, which is often a decided advantage.

About the middle to the twentieth of July is the best season to sow an orchard cover crop, taking advantage of a time when the soil is moist and in fine tilth. A great variety of crops may be chosen, and the same one should not be used each year. Preference should, as a rule, be given, however, to crops which survive the winter, and especially to the legumes, as these gather nitrogen from the air. Hairy vetch, alfalfa, red or mammoth clover, rape, rye, oats and crimson clover are among the best, mentioned in order of merit.

Hairy vetch or sand vetch, sown at the rate of 35 pounds seed per acre, forms a very close mat over the ground. It is a nitrogen-gatherer, lies close to the ground, causing little inconvenience to pickers, stands the winter well, and furnishes a fine growth to plow under in early spring. Alfalfa is one of the best leguminous cover crops for well-drained soil, especially soil well supplied with lime. Twenty-five pounds of seed per acre, sown in July, will give a good growth the first season, and on suitable soil will stand the winter well. It is very important that it be plowed up in spring and not allowed to grow, else it will injure the trees by robbing them of plant food and moisture. Merely as a cover crop it will not do them any harm in this way. It, too, is a nitrogen gatherer, as is clover.

Red or mammoth clover, at the rate of twenty pounds per acre, is also excellent. It makes a fair growth, is low-growing, and winters well on drained soil. Rape makes a heavy growth of stiff stems, which, although most of them kill in winter, stand up enough to hold the snows. It is inconvenient in fruiting orchards, as it remains wet most of the day, making picking unpleasant.

Rye is a favorite crop with many growers. It is hardy, gives a fair growth, and furnishes a top on soil that is unsuitable for the growth of clover. It is not a nitrogen-gatherer, and does not leave the soil in such friable condition as do the legumes.

Oats have been highly recommended by the Chief of the Fruit Division, Ottawa, but except in orchards making excessive wood growth, the legumes are preferable because of the enrichment which they add to the soil.

Crimson clover has been favored by some, but does not make as good a growth as the other clovers, and does not stand the winter so well, which is a serious disadvantage.

Clean Cultivation with Cover Crop.

In Bulletin 314 of the New York Experiment Station, a fundamental orchard problem is attacked—the proper management of orchard soil. A careful perusal of the data presented should convince every orchardist that, unless his conditions are very peculiar, he should regularly cultivate the soil beneath his trees, supplying humus by means of late summer cover crops. A five-years' comparison of tillage and sod mulch proved tillage superior in every point but one. The apples from trees in sod were slightly brighter-colored, but were inferior in quantity, size and quality.

Shade trees in different parts of Manitoba are being defoliated by canker worms.