

picked. The year following I gathered two bushels, the next year seven, and the following twenty bushels. I then began exhibiting my fruit at the exhibitions, where I carried off prizes. There are several varieties, but mine is the Cherry Bell, which takes well in the English market. The land for planting cranberries should be worked up and sanded, the sand to be from three to six inches deep, then irrigating is important, in fact, is essential, to cranberry growing. The land should always be kept damp. Before the frost comes the patch should be flooded, and kept so until the first of May. They do not thrive well when exposed to the winter's frost. If a long spell of dry weather takes place in the summer irrigating should be repeated. When you get your land in this shape you are in a position to do something that will yield you an immense profit. J. J. White, a United States man, raised 15,000 bushels the last year, which, at \$2 per bushel, netted him \$30,000. Two others had grown 20,000 and 25,000 bushels respectively. If we were to put all our waste swamp to cranberry growing it would be a great source of wealth to the province. Swamps are not the only place to grow them, they could be grown equally successful in the valleys.

I realized \$300 net for what I grew on one acre last year. I would like to know if there is anything else you could put an acre that would bring the same returns.

To a question, sanding will correct all weeds. As to prices, I realized 10s. to 13s. for mine in the English market, while others only received 9s. to 11s. I ship in boxes, and the expense amounts to about 7c. per box. It costs 70c. per box for freight around by Montreal, but should be very materially reduced now, as we have direct steam communication. I have now 15 acres under cultivation, and all my neighbors have taken up the cultivation, although they laughed at me when I started to cultivate mine. I can recommend the cultivation of cranberries as a profitable business from the experience I have had.

## The Composition and Use of Cattle Foods

By W. H. Jordan, Director N.Y. State Experiment Station

(Continued from March 23th.)

### THE ACTUAL COMBINING OF AN ECONOMICAL RATION.

A ration, as generally understood, is the total quantity of a mixture of foods which is to be fed to an animal in one day. In order that such ration may be economical it is necessary that the foods be so combined as to secure for a given quantity of food a maximum nutritive effect and the foods must be so selected with reference to market prices as to purchase the proper combinations at the least cost. In other words, we need to secure the maximum efficiency for the least money. Some times these two factors conflict. The prices of commercial feeds may be such as to render it relatively expensive to combine the most efficient ration. A ration of less than maximum efficiency might, under some circumstances, be more economical, either because the home supply of foods makes it undesirable to purchase others or because of the high price of a certain class of foods.

The most efficient rations are those which are secured by combining two classes of foods, the carbohydrate class and the protein class. The carbohydrate class consists chiefly of those foods produced on the farm, such as the hays, straws, and the cereal grains. The protein foods are as a rule those found in the markets, such as the oil meals, gluten feeds and meals, brewery residues, and bran and middlings from the various cereals, such as rye and wheat.

Farmers should aim to produce all the carbohydrate foods they need, and they should select from commercial foods those which, after considering composition and cost, will most cheaply supplement the home supply, manurial value being given due consideration. One ration may be

as efficient as another and yet cost much less. Here are two rations which illustrate this fact:

No. 1.	No. 2.
30 lbs. silage,	30 lbs. silage,
10 lbs. hay,	10 lbs. hay,
4 lbs. ground oats,	4 lbs. wheat middlings,
4 lbs. linseed meal,	2 lbs. dried malt sprouts,
	2 lbs. high grade gluten meal.

There is little doubt but that for most purposes ration No. 2 is as efficient and desirable as ration No. 1, and at the present time it can be supplied for nearly three cents less. During some portions of the year three cents is the price of nearly two quarts of milk, and, with a herd of twenty cows, quite a saving would be effected by using ration No. 2. Farmers should study the composition and ruling prices of commercial feeds.

*Rations for specific purposes.*—Inquiries are often made for a ration that will either produce milk rich in fat, or that will produce a large quantity of milk without regard to quality. No one is wise enough at present to combine mixtures having these different effects. The evidence of all previous practice and experimental work is, that the quality of a cow's product is chiefly due to her individual or breed characteristics. So far, no way has been discovered by which it is possible to produce marked and persistent variations in the food. A dairyman must feed his animals to increase the quantity of milk if he wishes to increase the quantity of butter or cheese.

*The quantity of the ration.*—This should be adapted to the capacity of the animal. Many cows cannot be made to produce enough to pay for heavy feeding. The writer believes that there has been a tendency in some quarters to feed beyond the point of economy and of health.

A properly combined ration of 30 lbs. of the best silage, 10 lbs. of hay and 8 lbs. of grain is as large as most cows will consume with maximum profit. A small minority may utilize more with increased profit, but many cows could be more economically fed with less.

(PER DAY AND PER 1,000 LBS. LIVE WEIGHT.)

	Total organic substance.	Nutritive (digestible) substances.			Total nutritive substances.	Nutritive ratio.
		Crude protein.	Carbohydrates.	Ether extract.		
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	
Steers at rest in stall.....	17.5	0.7	8.0	0.15	8.85	1:1.2
Milch cows.....	24.0	2.5	12.5	0.40	15.40	1:5.4
Horses moderately worked..	21.0	1.6	10.0	0.50	12.10	1:7.0
Horses heavily worked.....	23.0	2.5	12.1	0.70	15.30	1:5.5
Fattening steers, 1st period..	27.0	2.5	15.0	0.50	18.00	1:6.5
“ 2d period..	26.0	3.0	14.8	0.70	18.50	1:5.5
“ 3d period..	25.0	2.7	14.8	0.60	18.10	1:6.0
Fattening swine, 1st period..	36.0	5.0	27.5		32.50	1:5.5
“ 2d period..	31.0	4.0	24.0		38.00	1:6.0
“ 3d period..	23.5	2.7	17.5		20.20	1:6.5
Growing Cattle.						
Average live weight						
Age, months. per head.						
2-3 165 lbs.	22.0	4.0	13.8	2.0	19.8	1:4.7
3-6 330 lbs.	23.1	3.2	13.5	1.0	17.7	1:5.0
6-12 550 lbs.	24.0	2.5	13.5	0.6	16.6	1:6.0
12-18 770 lbs.	24.0	2.0	13.0	0.4	15.4	1:7.0
18-24 940 lbs.	24.0	1.6	12.0	0.3	13.9	1:8.0

## Very Much Pleased With It

CAMLACHIE, March 27th, 1899.

DEAR SIR,—Find enclosed \$1 for this year's subscription for FARMING. This is the third year that I have taken it and must say that I am very much pleased with it.

Yours truly,  
J. W. SYMINGTON.