

factory results, making the crop appear more uniform and the yield as good on the hills as in the hollows. The objection raised by your critical correspondent that, in case the field was seeded to clover, the harrowing would destroy the clover, has little point, when we reflect that the condition of soil that prevents the grain from forcing its way up will have the same effect on the clover, which, from its very nature, is more likely to be strangled in its birth by a hard crust on the surface than is the grain, and I have seen just as good a crop of clover on those hills that had been harrowed as on the lower ground that was not harrowed. In one case a high portion in a field sown to peas had become packed and looked bare, as compared with the rest of the field. One would naturally think that if harrowing would be fatal to any crop it would to peas, but I rashly ventured in where your correspondent, I presume, would fear to tread, harrowed this portion with the same heavy harrows both ways, and in a few days the crop here was catching up to that on the rest of the field, and it panned out satisfactorily.

If there is any sense in the theory of creating a dust mulch by surface cultivation for the conservation of moisture, why should it not apply to grain crops as well as to garden, root and corn culture? If freedom from binding and the access of air favors the growth of the latter, why not the former? And if weeds are destroyed in their incipient stage by cultivation in one case, why not in others? The only objection of any weight urged by your correspondent against harrowing grain is that of the labor involved in reopening ditches or water-furrows that may be filled in, and even that may, in many cases, be avoided by harrowing lengthwise of the cross furrows which are the mains, but even if they have to be shovelled again it is not a serious matter, as compared with a crippled crop for want of relief from a crusted surface.

I am not advising indiscriminate harrowing. Every farmer should use his own judgment, and act intelligently according to the circumstances, but I feel safe in advising a trial of this practice on a limited scale and where there seems to be most need of it, especially on clay land. And do not wait until the land has become dry and hard before harrowing, for then the harrows may have little effect, owing to the hardness, but harrow as soon as it is seen that the soil has run together, while it is yet moist and will crumble—that is, as soon after the rain, or a rain, as the land will work without sticking. Then you effect the double purpose of relieving the pressure on the plants and of conserving the moisture that will contribute to their healthy growth.

Peel Co., Ont.

S. C. J.

A Bumper Corn Crop.

To the Editor "Farmer's Advocate":

In the Middle West "Corn is King." Corn-growing has become the principal topic for conversation almost everywhere among the farmers. An Institute without a corn talk would not be complete.

While many farmers appreciate and understand the value of a good corn crop in Ontario, there are more who do not. It is with a view of stirring up more interest in this subject that I am now writing. I realize that the best is not being accomplished by our farmers, or anywhere near it.

THE SEED.—In the first place, what constitutes good seed corn? To be good seed corn it should have undoubted vitality, which, when tested under favorable conditions, will not only germinate quickly and grow fast, but which, when put in the soil outside, will grow in the face of difficult conditions. Such corn must be thoroughly dried before hard freezing weather, and when properly dried it will stand a test of 60 below zero without having its vitality destroyed. I know of no better place to dry the seed corn well than in the chamber above the kitchen. I favor growing the seed corn by itself, at least 40 rods from any other corn, on a rich well-cultivated piece of ground. If half an acre, say, were thus planted and special cultivation be given it, the tassels on barren stalks removed, and this planted with selected seed corn to start with, I believe we could greatly improve upon the yields we are now getting from the varieties in common use. In selecting seed corn from any source, I like the idea advanced by a Minnesota farmer, who said "he selected the largest ears, with the deepest kernels, which would ripen before frost came." The ground to be planted should be made rich. I find that clover sod which has previously been top-dressed with a liberal application of stable manure and plowed in autumn, makes a good chance. In the spring, on this seed-bed, thoroughly pulverized and well cultivated, the corn should be planted in hills, so that cultivation may be given both ways.

TIME TO PLANT.—I don't believe in any fixed time, nor do I plant by the moon, but whenever the ground is dry and warm enough to grow the corn. This may be as early as the middle of May, and as late as the 10th of June.

CULTIVATION.—I believe in cultivating be-

fore the corn is up. Whenever the weeds start, that is the time to start the weeder or harrow. I find that it is better to do this work in the afternoon, as the sun kills the weeds much quicker. When the corn is pricking through is a critical time. I don't believe in breaking off those tender shoots, and yet, if the ground had baked after a rain, I would feel like sacrificing some of the corn to let the rest through, by harrowing it. The amount of harrowing given to a corn crop must be determined by the judgment of the operator. He must take into consideration the character of his soil and its humidity. No hard and fast rules can be laid down for the use of the weeder or harrow on corn. The weeder works well in a dry season, but it isn't satisfactory when the ground is wet.

I believe in deep cultivation at first if the soil needs it, but as the corn grows I want the cultivation done shallow enough to prevent any root pruning, and deep and often enough to destroy weeds and keep a good dust-blanket to conserve the soil moisture. I approve of a late cultivation, about the time the corn is silking out, and if any late weeds have come up, I find the knife shares are very useful in disposing of them.

The greatest care should be taken that we have at least three stalks to every hill, and that in cultivating the corn we do not plow any out, or cover it so that it will not grow. I wonder how many have figured on what yield should be obtained in a good corn season with good seed, good land, good cultivation, and, in fact, all the links in the chain good and strong. If a check-row planter were used, they are usually set to plant 3 ft. 8 in. each way. This would give 3,240 hills to the acre. Allowing the crows or something else to take the 40 hills, and supposing we could get three good-sized ears to the hill, averaging 11½ oz. in weight, this would mean about 100 ears would make a bushel of shelled corn. We have 3,200 hills × 3=9,600 ears, and ÷ by 100 ears, = 96 bushels shelled corn per acre. Who gets it? Isn't the average away below 50 bushels? Should it be so? I claim we should aim for better things.

T. G. RAYNOR.

DAIRY

Effect of Cow Food on Dairy Products.

There has been much discussion as to the effect which the fodder fed to cows may have on dairy products, and with a view to settling the question so far as cheese is concerned, the Agricultural Department of the University of Wisconsin has undertaken of late years a series of experiments which have thrown some light upon the question. The experiments were carried on with rape, clover, cabbage and green corn, the most scrupulous care as to cleanliness being observed in milking and handling the milk, so that, as far as possible, extraneous germs which might cause flavors of other kinds might be prevented from entering the milk. During the time of investigation the cows were kept on good pasture during the night, and stabled during the day; given pure water to drink, and fed a little grain twice a day.

EXPERIMENT WITH RAPE.

The rape experimented with was Dwarf Essex, which was sown in drills, three pounds to the acre being used. The first piece was sown early in May, other sowings being made at intervals of a few weeks, so that a supply at various stages of maturity might be available. The rape was cut and fed to the cows while still fresh and green, and experiments were made in feeding it half an hour before and immediately after milking. In every case it was found that the most objectionable flavor was produced when the young rape was given; also that better results were obtained when the rape was fed after milking than before. During the cheese at a low temperature (40 degrees) was also found to produce cheese of a better flavor than that cured at a higher temperature. Upon the whole, however, rape was not recommended highly as fodder. The cows ate it greedily, and the flow of milk was increased, but the cheese had an offensive smell and a somewhat sharp rancid flavor, which "cannot be eliminated by any art known to the cheesemaker at the present time." Ever so limited quantity of rape fed to the cows was found to produce a taint in the milk.

OTHER STRONG FOODS.

Cabbage was also found to be an inferior fodder, the cheese made from the milk of cabbage-fed cows being invariably found to possess a disagreeable flavor, which became worse as the ripening advanced. Milk from cows fed exclusively on green clover, too, produced cheese of an off-flavor, which became sharp and disagreeable as the cheese became old. Green corn, however, was found to give milk of a most excellent quality, the cheese made from it being of fine texture and good flavor at all stages of ripening. "Without exception," the report states, "this cheese was free from offensive odor and taste." Ostensibly then, judging from the result of these experiments, farmers who raise cattle for the sake of dairy products, will make no mistake in making provision for a good corn-field this season.

Answers to Questions for Dairymen.

My favorite breed of dairy cow is the Ayrshire and Ayrshire grades, because they give a large amount of milk, containing a good amount of butter-fat. Their milk is adapted to any line of production—milk and cream for city trade, or for the production of cheese and butter. They beef readily when required, and make a choice quality of meat, with a small per cent. of waste. They are a hardy, thrifty breed, and will produce more profit for amount of feed consumed than any other breed.

I send cream to City of Montreal. Milk and butter record of my herd of 26 cows, from January 1st, 1904, to January 1st, 1905, is as follows:

Reg. No.	Name	Age in years.	Pounds of milk.	Average p.c. of butter-fat.	Estimated lbs. of butter.	Value at 22c. per pound.
11129	Peace	6	7828	4.1	378	\$82.06
6264	Minnie May	12	7955	3.8	352	77.44
13044	Jessie of Kelso	4	7366	4.1	352	77.44
11124	Infelice	6	7292	4.1	348	76.56
11132	Irena	6	7525	4	350	77.00
11118	Delta Maid	6	7954	3.7	338	73.26
8881	Miss Violet	7	7357	3.8	324	71.28
11125	Lady Ethel	6	6756	4.1	322	70.84
	Miss Millie	4	6853	4	320	70.40
11119	Dinah	6	6025	4.3	301	66.22
11402	Ruth of Kelso	5	6295	4	298	65.56
11130	Peggoty	6	6478	3.8	286	62.92
8886	Iona	7	5670	3.9	259	56.98
17611	White Rose	4	5764	3.9	248	54.56
17197	Miss Vernie	3	5773	3.8	249	54.46
17605	Jess	2	5180	4	241	53.02
17602	Constance	3	5208	3.9	236	51.92
	Gipsey	8	8450	4.1	403	88.66
	Flossie	8	8775	3.7	380	83.60
	Spotty	8	7416	4.2	357	77.22
	Carrie	12	6305	4.1	308	67.76
	Maggie	3	6604	3.7	281	61.82
	Topsey	3	6530	3.8	286	61.60
	Ann	8	5204	4.2	254	55.88
	Jenny	10	5220	4.1	248	54.56
	Doll	2	4970	4.1	236	51.92
Average per cow....				6646	3.9	306 \$67.07
Total amount of milk					172,808 lbs.	
Total amount of butter.....					7,928 lbs.	
Value at 22 cents per pound					\$1,743.94	
Value of skim milk, at 15c. per cwt.					222.16	
Returns per cow, including value of skim milk					75.58	
Profit about \$31.58; cost of feed about \$36, and labor, \$8 per cow.						

We weigh every milking with a spring balance scale; take composite samples every four or six weeks, and have them tested at our creamery.

This is very interesting work. By doing this the farmer takes greater interest in his herd, and it is said "interest in our work lightens it." By this system he knows what his herd is doing per week, per month, and per year; and he is able to spot out his unprofitable cows. He can also, if he wishes, keep an approximate estimate of the coarse foods fed—hay, ensilage, straw and pasture—and can keep a close account of the grains fed, and thereby know about the cost of keep, also, of his herd per year.

We select only deep-milking, high-testing females; mate these with a pure-bred sire, from a family with a good milk record; rear only the best heifer calves; see that they are well fed when young with whole milk for two or three weeks, and then skim milk for six months at least. Mate them with a pure-bred sire of the same breed, so that they will drop their calves at from 30 to 36 months of age. Let the first lactation period be not less than ten months, so as to form the habit of long milking. Feed them liberally with foods rich in protein; weigh and test the milk, as to know the value of a cow, her annual yield of milk must be known. Huntingdon Co., Que. W. F. STEPHEN.

The Milking Problem.

Commenting on a recent article by Prof. H. H. Dean, in the "Farmer's Advocate," the American Dairymen says:

"If there is any one thing which would prove a boon to the dairy interest, it is a practical milking machine which would do the work as well as it can be done by hand. Many milking machines have been tried from time to time, but none of them have proved an entire success. Yet the dairymen has not lost heart. He prays for the day when a machine may prove a success, and when he and his family may be relieved from the drudgery and expense of milking. Nor is this the only consideration. It is well known that poor milking ruins many cows—and the number of good milkers is few and far between. If a perfectly satisfactory machine can be invented, which will do the work as well as the best milker, it will mean an added profit to the cow owner."