694

THE FARMER'S ADVOCATE.

done in the past. When you have bought your corn, test it. The simplest and easiest way is to count out one hundred grains (a fair average from the ears). Then take a shallow pan and place in the bottom two thichnesses of flannel. Into this put 100 grains, spread out evenly; then, over this spread a double thickness of flannel. Keep this moist and warm; a temperature of 70 degrees is best. After four or five days, count out the number of sprouted grains, and the balance will give the percentage of non-germinating corn. If the first test is not satisfactory, test I have often found the second test to be again. much better than the first. Another thing of which many are not aware is that, as the season for planting corn draws near, the germinating propensities are much stronger.

In my opinion, there will be a good deal of corn this spring with low and poor germination, owing to the very cool summer and fall of 1907. making the maturing late, and the corn consequently soft and full of moisture. This invariably means uncertain and unsatisfactory germination the following spring. Don't be afraid of paying a good price for first-class corn, and don't fail to test it before planting.

THE DAIRY.

TEST OF A MECHANICAL COW - MILKER.

ment Stations are now testing milking machines.

We ought soon to have sufficient data to be of

service to the practical farmer and dairyman, in

deciding whether or not it will pay to instal a

milking machine for use on the average dairy

lined in this bulletin, No. 85, Pennsylvania Ex-

The objects sought for in the experiments out-

A number of the American Agricultural Experi-

J. S. PEARCE.

about double the amount of time which was spent in previous years was devoted to dairy bacteriology and dairy chemistry. The good results from this method were seen in the good showing of the class in these technical subjects, and reflect credit on the excellent work done by Professors Edwards and Harcourt, and by their assistants, Messrs. Barlow and Fulmer. The class was greatly pleased with their instruction in these two subjects, which have been considered more or less in the nature of "bugbears" by former classes.

Half the time during March was devoted to practical instruction in handling boilers and engines, piping, soldering, etc., under the direction of Mr. Geo. Travis, Tillsonburg.

The second departure from methods followed in former years was in having the examinations distributed throughout the third month, instead of having them all come in three days at the end of the term. This proved to be a wise step, as it gave students an opportunity to prepare properly for the final tests, and was less strain upon men not accustomed to writing on examinations.

The general proficiency lists for the long-course dairy class is as follows, including those taking the full factory course, those taking special work in buttermaking, and those who spent the term at practical work in the farm-dairy branch of the school

PROFICIENCY LIST, DAIRY SCHOOL EXAMINA-TIONS, 1908.

Name. P. O. Address. Max. Marks 1200 Rank.

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815

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753

714

- 1. R. Macdonald, Verschoyle, Ont. 1016 2. W. J. Clark, Harriston, Ont. 948
- 942 3. D. Gunning, Owen Sound, Ont. .
- 4. C. E. Bingleman, Villa Nova, Ont..... 933
- 880 H. O. Bingleman, Rockford, Ont.
- 6. (F. R. Hefler, Exeter, Ont.
- (A. McLaren, Guelph, Ont.
- M. W. Godby, Langton, Ont.
- 9. I. C. Goodhand, Corbett, Ont.
- 10. A. A. Miller, Jarvis, Ont.
- E. N. Gilliat, Guelph, Ont. 11.
- 12. D. M. Oliver, Toronto, Ont.
- J. L. Brown, Oxford Centre, Ont. 13.
- N. Iwalta, Heidelberg, Ont. 14.
- C. C. Curtiss, Addison, Ont. 15.
- 16. W. R. Payne, Strathroy, Ont.
- W. B. Thompson, Hickson, Ont. 17.
- 18. Jas. L. Easton, Hagersville, Ont.
- 19. H. Lockyer, New Durham, Ont.
- 20. B. Beninger, Riversdale, Ont.
- 21. *Thos. Neefe, Condersport, Pa., U.S.A 524 *Failed in cheesemaking and bacteriology.

PROFICIENCY LIST, BUTTER SPECIALISTS, 1908.

- Name. P. O. Address. Max. Marks 1000. Rank.
- 747 1. J. Trueman, Kirkfield, Ont. 712
- May, Heidelberg, Ont. E. 611 3. *R. Keller, Winthrope, Ont.
- 438 4. †N. E. Inglis, Olds, Alta. 414
- 5. ‡H. Spry, Guelph, Ont.
- *Failed in bacteriology.
- †Failed in bacteriology and chemistry. ‡Failed in bacteriology and boilers and engines.

FARM DAIRY.

- Max. Marks 1100 P. O. Address. Name. Rank 1. J. Iwanami, Bronte, Ont. .. 928
 - 870 L. Stewart, Peterborough, Ont. 823
- 3. W. Singleton, Guelph, Ont.

DISCUSSION ON HAND SEPARATORS

This discussion on hand separators took place at the Eastern Dairymen's Convention, at Picton. January, 1908, following an address by J. Stonehouse on "The Creamery Outlook." The address itself was published in "The Farmer's Advocate " of April 2nd.

Mr. Stonehouse.-Results we have obtained in our experiments at the Kingston Dairy School warrant the statement that the percentage of fat in the cream from hand separators can be made to vary 5 to 15 per cent. by varying the speed of the machine, and without changing the cream screw at all.

Q .- What effect would the tightening of the cream screw have?

A .- That means thickening the cream.

Q.-Do we not lose fat in the skim milk by making a rich cream ?

A.-Not if the speed of the machine is high enough. If you are running your machine at too low a speed, you are losing fat, no matter whether you are taking a rich cream or a poor The richness of the cream has but little cream. to do with the loss of fat in the skim milk. The principle factor in the loss of fat in the skim milk is the speed of the machine. Remember this, however, that I am not advocating a higher speed than is indicated on the handle of the machine, but don't get below it. What I want to impress, more particularly, is that, by changing the speed of the machine you alter the richness of the cream skimmed.

Q.-Will we get as good results in separating milk that has been warmed up as by separating directly from the cow? A.-Yes, I think we would, if heated high

enough; old milk requires a higher temperature than fresher milk.

Mr. Glendinning.-What is the best way to heat up milk after it has become cold ?

A.-The best way is to put it in hot water, but the most convenient way is to set it on the stove

Mr. Glendinning -- We have found it satisfactory to take a creamer can and fill it with boiling water, and set it in the reservoir of the separator.

Q.-You spoke of rich cream arriving at your creamery in better condition than poor cream. What is your theory for that ?

A.-On account of there being less milk in the cream.

We know that when we take a rich cream from a separator it has but little milk in it, and it will always keep in good condition longer than a poor cream, because it is the skim milk or serum which goes off in flavor, and not the fat.

Mr. Warden asked a question about not being able to get butter from cream sometimes on the What is the reason ?

A.-There are several causes. As a general thing, the whole trouble is a thin or poor cream, and too low a temperature for that particular cream. There are a good many people yet who think there is a certain churning temperature, regardless of any other condition of the cream. The churning temperature of cream may vary from 48 degrees, up to 70 or 75, and if one has not the proper temperature for this specific cream, he will have trouble. I have never yet seen the cream that would not churn if the temperature was high enough at the start. Trouble may come from one or two cows in the herd which have been milking a long time, and their cream is very difficult to churn. Keeping their cream out, sometimes solves the difficulty.

Second.—Completeness	of	milking.
ThirdYield of milk.		
FourthEffect upon th	he	udder.

First.-Time required for milking.

- Fifth.-General health of cows.
- Sixth.-Flavor of the milk.

periment Station, were :

Middlesex Co., Ont.

farm.

All of the foregoing are practical points for dairymen to consider.

The results of the test are given as follows :

1. It required from two to three times as long to milk a cow with the machine as would be required by a good hand milker, but one operator can handle two or three machines, so he could milk four or more cows with the machine in less time than he could milk the same number by hand.

2. In general, cows were milked cleaner as they became accustomed to the machine, but individuals varied widely in this respect. Two of the cows tested could never be milked with the machine without leaving one or two more pounds of strippings, while the others were often milked as completely as would be done by hand under ordinary circumstances.

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3. No difference in yield of milk was observed that could be attributed to the machine milking, but there was usually a slight drop when changing from one method to the other; always in changing from hand to machine milking.

4. No injury to the udder took place that could with certainty be attributed to the use of the machine.

5. The general health of all the cows remained good during the entire experiment.

6. Wide variations in the flavor and keeping qualities of the milk were observed from different cows, but the quality of the milk from each cow remained practically constant, whether she was milked by hand or machine.

No advice is tendered regarding the wisdom of purchasing milking machines by the average dairyman, but if one reads between the lines, he will conclude that at present the machine is "damned with faint praise." H. H. D.

O. A. C. DAIRY SCHOOL, 1908.

The regular Dairy School long course at the Ontario Agricultural College, opened January 2nd and closed March 26th, 1908. During this time fifty-two students registered, of whom thirty-five wrote on the final examinations. Of these thirty-five, thirty-one succeeded in passing the final tests at the close of the term

Two quite radical changes in the course were carried out during the past session. During the month of January, each alternate day was devoted by the class to laboratory work in the bacteriological laboratory, and each alternate day to practical work in the dairy During February, alternate days were spent by the class in the chemical laboratory. By following this plan

Ellis, Evely 694 J. Finlay, Bluevale, Ont. C. F. Everest, Guelph, Ont. 6. 7. R. Harris, Rockwood, Ont. 604

- G. B. Chase, North Adams, Mass., U.S.A.
- 9. V. Oxley, Thornhill, Ont.

SHORT COURSES.

Two short courses opened on March 30th, and continued for one week. One of these courses was the regular one given each year to the summer instructors before commencing their season's work. It is largely a laboratory course, along with lectures and discussions. The chief lectures this year were given by Dr. J. H. Reed, of the regular College staff, on common diseases of dairy cows and on the question of tuber-There are nine instructors for Western Ontario employed in summer visiting the creameries and, cheeseries of the Province, whose duties are to assist in improving the quality of butter and cheese made in factories, to visit farms and give advice in caring for milk, cream, etc.; also to see that proper sanitary conditions are maintained on the farm, in and around the

A special course of instruction in testing milk and cream was conducted at the same time as for the instructors. Fourteen cheese and butter makers from various parts of the Province availed themselves of the opportunity to attend lectures and get practical help on testing problems. Some eight or ten students who had taken the regular long course remained over for the short courses, making a total of about 80 in attendance during the long and short courses in dairying during the winter. The forenoon of Thursday, April 2nd, was devoted to the judging of experimental lots of cheese and butter made during the term. Mr. Gray. of Thos. Ballantyne & Son, Stratford, and Mr. Frank Herns, London, Chief Dairy Instructor, ably assisted in this work. On the whole, the term has been one of the most successful in years.

Mr. Warden.-A neighbor had trouble in churning, and he stopped milking two cows, and there was no further trouble. These cows had been milking eight or ten months.

Q.-Do you think it makes any difference to feed frozen feed to cows?

 Λ .—I never had any experience with that.

Q.-Will not such feed make the fat harder, and consequently more difficult to churn.

A.-I cannot speak definitely on that point; the two principal fats in milk become hard, es pecially with cows that have been milking a good while, and are being fed on poor feed, and then these fats will not unite together, unless at a high temperature. These two fats have a melting point at 146 degrees, but if we feed a richer and more succulent ration we get a larger proportion of a soft or oily fat in the milk which has a melting point at 40 degrees ; and if we have a goodly proportion of this oily fat, which we get from rich, succulent food, or from fresh cows, we will have but little trouble in churning, as the fats then readily adhere together.

Mr. Elwood.-What effect has acid on the ream ?

A.-With a thin cream, we need to have a certain amount of acid to make it churn readily. but it is not necessary with a rich cream. Our principal object in souring cream is to have a little more distinct flavor in the butter.

Q.-Do you think the keeping quality of butter as good from sweet cream as from sour cream ? A.-I do not think there is much difference, if the quality of the cream is equal.