The COMPOSITION OF CANADIAN CHEDDAR AND PROCESS CHEESE

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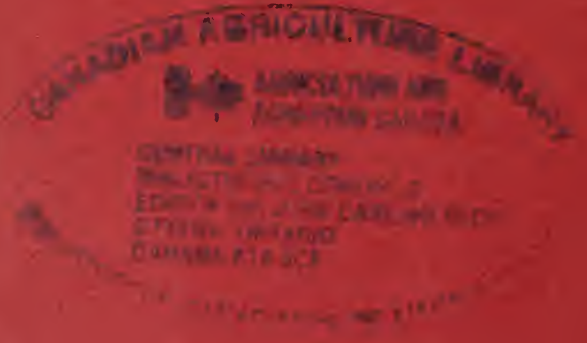

THE COMPOSITION OF CANADIAN CHEDDAR AND PROCESS CHEESE

Introduction

From April to November, 1925 and 1926, an investigation was carried out on the composition of Canadian Cheddar and process cheese. The Cheddar cheese were representative of all commercial grades as well as the various textures found within the grades. The samples were collected by the grading staff at Montreal, with the exception of a few that were sent in by the graders stationed in the Belleville and western Ontario districts.

A total of 444 samples of Cheddar cheese were analyzed for moisture and fat, of which 317 samples were of Ontario cheese representing 239 factories situated in all sections of the province. Analyses for moisture and fat were made of 121 samples of Quebec cheese representative of 106 factories from all sections of the province, while 6 samples of Prince Edward Island cheese were analyzed.

In all, 48 samples of process cheese were collected in all parts of the Dominion by Dairy Branch inspectors, and were representative of the different brands manufactured in Canada. This type of cheese has appeared on the market only in recent years, but already has become an important item in the cheese trade of Canada. In 1925, 32,652,569 pounds of process cheese were manufactured, of which 21,381,532 pounds were exported. It has become popular with both consumer and retailer, due, no doubt, to the mild and uniform quality of flavour, the small convenient packages in which it is marketed, and the ease with which it is handled by retailers.

Review of Previous Investigations

Little published data are to be found on the composition of Canadian Cheddar cheese, and the few results reported, with one exception, were published previous to 1900. As the number of samples was small and the methods of analysis not stated, the results of previous investigators are hardly comparable to those of the present investigation.

Chattaway[1] gave in a report, the composition of one sample of Canadian Cheddar cheese as follows: water, 33.3 per cent; fat, 30.6 per cent; proteids, 27.6 per cent; total ash, 3.6 per cent.

Clark[2] stated that the average composition of 11 samples of Canadian Cheddar cheese was: water, 34.07 per cent; fat, 22.54 per cent; proteids, 40.02 per cent; total ash, 3.45 per cent.

Shuttleworth[3] found the average composition of 135 samples of cured cheese to be: water, 33.51 per cent; fat, 32.97 per cent; protein, 24.94 per cent; total ash, including sugar, 8.58 per cent.

Charron[4] reported on the analyses of 9 samples of Ontario cheese from the Belleville and Brockville districts and 16 samples from various districts in Quebec. The average composition for these cheese were: Ontario cheese—water,

[1] Chattaway, Wm.; Pearmain, T. H.; and Moor, C. G., 1894. On the Composition of Cheese, The Analyst, Vol. 19, p. 145-147.

[2] Clark, R. D. 1889. Composition of Canadian Cheese, New York State Dairy Commissioner, 5th Annual Report, p. 422.

[3] Shuttleworth, A. E. 1894. The Composition of Milk, Cheese and Whey in Relation to One Another. Bull. 96, Ontario Agr. College, Guelph.

[4] Charron, A. T. 1920. The Report of the Minister of Agriculture of Quebec.

35.8 per cent; fat, 36.17 per cent; casein, 25.87 per cent; sugar and ash (undetermined), 2.16 per cent; Quebec cheese—water, 34.54 per cent; fat, 37.38 per cent; casein, 25.30 per cent; sugar and ash (undetermined), 2.78 per cent.

Shutt[1] reported on 13 samples analyzed in 1914 and 1917 as follows: moisture, 35.02 per cent; fat, 32.88 per cent; fat in the water free substance, 50.73 per cent; casein, etc., 32.10 per cent.

The Objects of The Investigation

The investigation was instituted and carried out with the following objects in view:—

1. To make available information regarding the moisture and fat content of different grades and of various textures in Canadian Cheddar cheese.
2. To determine the correlation, if any, between the ratio of the principal constituents of cheese and the variations in texture.
3. To determine the moisture and fat content of process cheese manufactured in Canada.

Methods of Collection and Analysis

The samples were taken by means of a cheese trier, the top inch or so of the plug was broken off and the remainder placed in glass containers which were sealed with paraffin. The samples were forwarded to the Dairy Research Laboratory at the office of the Dairy Commissioner, Ottawa, and placed in a refrigerator until analyzed.

Data accompanied each sample concerning the registration number of the factory, the vat number, the commercial grade, and the grader's remarks on texture. The cheese were probably not more than one month old, as the samples were taken at the time of federal grading.

The methods of analysis used were those outlined by the Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists.[2] For fat determinations, the Schmidt-Bondzynski method was the one adopted and used.

The per cent fat in the water free substance was calculated after the percentages of moisture and fat were determined. The water free substance includes the fat and all other solids which make up the cheese.

For example, a cheese contains 34.0 per cent moisture, 33.0 per cent fat, and 33.0 per cent casein and other solids. The total water free substance equals 66.0 per cent of the cheese. Of this amount, 33.0 per cent is fat, therefore the per cent fat in the water free substance is 50.0 per cent.

The percentage figures under the column "Casein and other solids" were obtained by difference, and include the constituents, milk sugar, mineral ash and salt.

Canadian Standards for Cheese

All cheese manufactured and sold in Canada must conform to certain standards for fat, which are fixed by law under the Dairy Industry Act.[3] In Canada, all cheese that does not contain 45 per cent fat in the water free substance or that is made from partially skimmed milk is legally skim milk cheese, and must be branded and sold as such.

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[1]Shutt, F. T., Division of Chemistry, Dominion Experimental Farms, in correspondence with the authors.

[2]2nd Edition, Methods of Analysis of the Association of Official Agricultural Chemists.

[3]The Dairy Industry Act, 1914, as amended in 1923. Acts, Orders and Regulations No. 13, Dairy and Cold Storage Branch, Ottawa, Canada.

TABLE I.

AVERAGE COMPOSITION OF THE DIFFERENT GRADES OF CANADIAN CHEDDAR CHEESE, 1925–1926

Grade	Number of samples	Per cent Average Composition				Per cent Moisture Range			Per cent Fat Range		
		Moisture	Fat	Fat in water free substance	Casein and other solids	Max.	Min.	Diff.	Max.	Min.	Diff.
Special	13	33·87	34·09	51·54	32·04	37·27	32·42	4·85	36·34	31·95	4·39
First	227	34·48	34·07	51·98	31·45	38·84	30·75	8·09	39·96	30·06	9·90
Second	162	35·29	33·34	51·53	31·39	41·78	28·53	13·25	38·04	29·17	8·87
Third	34	34·33	34·00	51·81	31·67	40·77	25·74	15·03	36·89	29·98	6·91
No grade	8	38·26	31·47	50·93	30·67	42·06	32·75	9·31	36·29	29·41	6·88
Total	444	34·82	33·75	51·77	31·43	42·06	25·74	16·32	39·96	29·17	10·79

Results of Analyses of Cheddar Cheese

The discussion of the results of the analyses of Cheddar cheese is based on the average composition of the cheese. For reference, details of the analyses of individual samples are given in the appendix on page 12.

Table I is a summary of the average composition of the cheese grouped according to commercial grades. The average composition for the different grades did not show much variation except for the nine samples placed in the no grade group. The latter cheese, besides having serious flavour defects, were very weak and moist in texture.

However, second and third grade cheese showed a much wider range in moisture content of individual samples than did special and first grade cheese. This is to be expected, as special or first grade cheese must have no serious defects in either flavour or texture, while second and third grade cheese may vary in texture from very weak, moist and open, to too stiff and dry. Thus in the second and third grade groups, the weak textured cheese offset the dry textured cheese and gave an average composition which approximated that of first grade.

Although there was considerable variation in the moisture and fat content of individual samples of the same grade, as indicated by the moisture and fat range, a study of all the samples of special and first grade cheese showed that the majority of the samples were very uniform in composition. Over 90 per cent of the samples came within a range of two per cent above and two per cent below the average percentage of moisture, and 84 per cent of the samples within the same range for fat.

Table II, given below, illustrates more clearly the uniformity that was evident in the composition of special and first grade cheese.

TABLE II.

The Numbers and Percentages of Samples of Special and First Grade Cheese in Different Moisture and Fat Ranges

Range in per cent.	Moisture		Fat	
	Number of samples	Per cent of samples	Number of samples	Per cent of samples
Under 31·0	2	0·83	7	2·92
31·1 – 32·0	6	2·50	17	7·08
32·1 – 33·0	26	10·83	32	13·34
33·1 – 34·0	56	23·33	62	25·83
34·1 – 35·0	74	30·84	62	25·83
35·1 – 36·0	46	19·17	32	13·34
36·1 – 37·0	20	8·33	21	8·75
37·1 – 38·0	7	2·92	5	2·08
Over 38·0	3	1·25	2	·83
	240	100·00	240	100·00

The above figures show the large percentage of the samples that fall within a range of 32 to 36 per cent for both moisture and fat. Such uniformity was not shown by second and third grade cheese. Of the second grade samples only 55.2 per cent came within a range of two per cent above and two per cent below the average moisture content, and 68.7 per cent fell within a similar range for fat. Third grade cheese had only 48.6 per cent of the samples within the four per cent range for moisture and 65.7 per cent within this range for fat. This is due to the fact that nearly 80 per cent of second grade samples and 70 per cent of third grade samples were faulted on texture.

It must be remembered, however, that second and third grade cheese are not representative of Canadian Cheddar cheese. Approximately 90 per cent of Canadian Cheddar cheese is special and first grade and these cheese are well made and quite uniform in composition.

TABLE III.

AVERAGE COMPOSITION OF DIFFERENT TEXTURES IN EACH GRADE OF CANADIAN CHEDDAR CHEESE, 1925–1926

Special and First Grade

Texture	Number of samples	Per cent Average Composition				Per cent Moisture Range			Per cent Fat Range		
		Moisture	Fat	Fat in water free substance	Casein and other solids	Max.	Min.	Diff.	Max.	Min.	Diff.
Perfect and good	189	34·36	34·17	52·04	31·47	37·28	30·92	6·36	39·32	30·06	9·26
Slightly weak	20	36·32	32·97	51·77	30·71	38·41	34·16	4·25	35·81	30·46	5·35
Firm, or slightly stiff	23	33·77	34·29	51·76	31·94	38·84	30·75	8·09	39·96	31·93	8·03
Second Grade											
Good	31	34·11	34·15	51·83	31·74	39·65	30·91	8·74	36·86	31·15	5·71
Weak	80	37·09	32·88	52·25	30·03	41·78	32·67	9·11	37·61	29·17	8·44
Stiff	35	31·80	34·64	50·78	33·56	36·82	28·53	8·29	38·04	29·19	8·85
Third Grade and No Grade											
Good	10	34·90	33·52	51·49	31·58	37·00	31·94	5·06	35·46	31·97	3·49
Weak	14	37·82	33·32	53·59	28·86	42·06	34·95	7·11	34·95	29·98	4·97
Stiff	7	29·90	34·53	49·21	35·57	31·26	25·74	5·52	36·79	34·21	2·58

Table III illustrates clearly the variations that occur in the composition of cheese of the same grade, but which have different textures. In this table, special and first grades are included in one group, and third and no grades in another.

The majority of special and first grade cheese have good texture. There were, however, some lots of first grade cheese that had slight texture defects, which were reflected in the average composition of the cheese. First grade cheese with slightly weak texture had a higher average moisture content and lower fat and casein content than good textured cheese, while cheese with slightly dry texture had a lower moisture and higher fat and casein content than either of the other groups.

The variations in the average composition of cheese in the same grade, but which have different textures, show up more clearly in the case of second and third grade cheese, as these cheese vary more in texture. Some of the cheese were so faulty in texture that they were classified as second or even third grade on this account.

Good textured cheese in second and third grades had approximately the same average composition as in first grade. Such cheese were placed in lower grades on account of flavour defects, most of them being rancid, not clean or fruity.

Table IV is a summary of the average composition of cheese of different textures according to the remarks of the grader concerning the texture. The average composition of cheese with perfect or good texture was almost identical with that of special and first grade as most of the samples were the same in both groups of Tables I and IV. In cheese that had a weak and moist texture, the moisture content increased, while a lower moisture content was found in cheese with a stiff or dry texture. The average moisture content varied more in the different groups than did the average fat content and the other solid constituents.

A study of the moisture and fat ranges of the different groups shows a considerable variation in the composition of individual samples with the same texture, and in the ratio of the principal constituents of cheese.

This is better illustrated in the comparison of the composition of three samples of cheese as given below.

Sample	Per cent moisture	Per cent fat	Per cent fat in water free substance	Casein and other solids
1	36·78	31·61	50·00	31·61
2	31·72	37·62	55·09	30·66
3	33·96	33·73	51·07	32·31

These three samples were in the same grade, had the same texture and were made about the same time of the year. Such variations in moisture and fat content in different cheese of the same texture, indicate that there was no definite relation between the texture and the ratio of the principal constituents of cheese.

In a general way, however, the texture of the cheese is an indication of the composition. The analyses showed that a weak and pasty texture was associated with high moisture and low casein content. Weak textured cheese also had a lower average fat content than the other groups, but individual samples had a higher percentage of fat than the average for the other groups. Stiff or dry textured cheese had a relatively lower average percentage of moisture and more casein than cheese of good texture. The perfect and good textured cheese had

TABLE IV.

AVERAGE COMPOSITION OF DIFFERENT TEXTURED CANADIAN CHEDDAR CHEESE, 1925–1926.

Texture	Number of samples	Per cent Average Composition				Per cent Moisture Range			Per cent Fat Range		
		Moisture	Fat	Fat in water free substance	Casein and other solids	Max.	Min.	Diff.	Max.	Min.	Diff.
Perfect	42	34·30	33·86	51·55	31·84	37·27	30·92	6·35	36·34	31·57	4·77
Good	160	34·39	34·19	52·10	31·42	37·47	31·64	5·83	39·32	30·06	9·26
Slightly weak	32	36·62	32·90	51·90	30·48	39·34	34·19	5·15	35·71	30·46	5·25
Weak, very weak and pasty	76	37·40	32·87	52·50	29·73	42·06	35·02	7·04	37·61	29·17	8·44
Firm, slightly stiff	23	33·91	33·94	51·34	32·15	38·84	30·37	8·47	39·96	29·19	10·77
Too stiff	42	31·44	34·74	50·65	33·82	36·82	25·74	11·08	38·04	31·60	6·44
Total	375	34·81	33·82	51·89	31·39	42·06	25·74	16·32	39·96	29·17	10·79

the moisture, fat, and casein and other solids in more equal proportions than the other cheese, although the variations were wide in individual samples. However, cheese with perfect or good texture showed the same consistent uniformity as was shown to obtain in special and first grade cheese, 90 per cent of the samples falling within a range of two per cent above and two per cent below the average percentage for moisture, and 85 per cent of the samples within this range for fat.

In Table V is found a comparison of the average composition of first grade cheese from each province for 1925 and 1926. All samples of cheese received during 1926 were from Ontario and Quebec. It is interesting to note that the average composition for the first grade cheese from each province was practically the same in both years.

These analyses also showed that Quebec cheese had a higher average fat content and lower average moisture content than Ontario cheese. In 1925, Quebec cheese were 1.08 per cent lower in moisture and 1.49 per cent higher in fat than Ontario cheese, while in 1926 they were ·78 per cent lower in moisture and 1·83 per cent higher in fat than Ontario cheese.

This fact was borne out by a comparison of the analyses of 24 samples of cheese from each province, which were made the same month of the year, and which had the same texture and grade. These samples were collected in September, 1926.

A Comparison of the Average Composition of First Grade Good Textured Cheese from Ontario and Quebec, 1926

Province	Number of samples	Per cent moisture	Per cent fat	Per cent fat in water free substance	Casein and other solids
Quebec	24	34·01	36·01	54·56	29·98
Ontario	24	34·23	34·21	52·01	31·56

The Quebec cheese showed a higher average fat content of 1.80 per cent and lower average moisture content of .22 per cent than the Ontario cheese.

Table VI was compiled to show the average composition of first grade cheese from the different districts in the provinces of Ontario and Quebec.

TABLE VI.

Average Composition of First Grade Cheese by Districts

District	Number of samples	Per cent moisture	Per cent fat	Per cent fat in water free substance	Casein and other solids
Quebec					
South Shore	33	33·82	35·63	53·83	30·55
North Shore	14	33·94	35·64	53·98	30·42
Lake St. John	14	33·71	34·37	51·86	31·92
	61	33·82	35·34	53·41	30·84
Ontario					
Western	33	34·73	33·21	50·89	32·06
Central	31	34·43	33·47	51·03	32·10
Eastern	112	34·73	33·78	51·67	31·49
	176	34·67	33·62	51·41	31·71

These figures show very little difference in the average composition of first grade cheese from different districts in each province. In Quebec, practically the only difference was in the average fat content of the cheese from the Lake St. John district which was 1.27 per cent below the average for the other two

TABLE V.

Average Composition of First Grade Cheddar Cheese from Each Province

1925

Province	Number of samples	Per cent Average Composition				Per cent Moisture Range			Per cent Fat Range		
		Moisture	Fat	Fat in water free substance	Casein and other solids	Max.	Min.	Diff.	Max.	Min.	Diff.
Ontario	61	34·67	33·75	51·67	31·58	38·84	30·92	7·92	39·32	30·06	9·26
Quebec	16	33·59	35·24	53·07	31·17	35·63	30·75	4·88	39·96	33·07	6·89
Prince Edward Island	3	33·65	33·43	50·38	32·92	34·37	32·76	1·61	34·12	32·83	1·29
1926											
Ontario	115	34·67	33·55	51·28	31·78	38·41	31·75	6·66	36·92	30·46	6·46
Quebec	45	33·91	35·38	53·53	30·71	36·88	31·85	5·03	37·79	31·64	6·15

districts. In Ontario, the cheese from Eastern Ontario showed a slightly higher fat content than cheese from the Central Ontario district, which were, in turn, slightly higher in average fat content than cheese from Western Ontario. In moisture content, the average percentage was the same for Eastern and Western Ontario, with a slightly lower average percentage for cheese from the Central district.

Analyses of Canadian Process Cheese

Process cheese is manufactured from well matured Cheddar cheese. It is made by mixing and blending, with the aid of heat, cheese of one or more lots of the same or different quality, flavour or make, and of the same or different milk fat and moisture content. The heating and processing, with the aid of chemical salts as emulsifying agents, produce a homogeneous mass that can be readily moulded into various shapes, sizes and weights.

The following table gives in detail the result of analyses of 48 samples of process cheese, representative of the different brands manufactured by eight Canadian firms.

TABLE VII.
Analyses of Canadian Process Cheese

Collection No.	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance
6458	Sept. 16, 1925	37·58	29·16	46·71
6459	" 16, 1925	41·48	29·25	49·98
6780	" 18, 1925	37·04	29·08	46·19
6781	" 18, 1925	39·91	27·41	45·61
6782	" 18, 1925	40·00	27·19	45·32
6462	" 17, 1925	38·49	28·62	46·53
6463	" 17, 1925	37·35	29·55	47·17
6464	" 17, 1925	38·96	29·82	48·85
6465	" 17, 1925	40·78	30·39	51·32
6466	" 17, 1925	42·31	28·36	49·16
6467	" 17, 1925	42·19	29·04	50·23
6468	" 17, 1925	41·83	27·57	47·40
6469	" 17, 1925	43·44	24·87	43·97
6470	" 17, 1925	42·86	26·05	45·59
6471	" 17, 1925	41·97	26·63	45·89
6472	" 17, 1925	37·32	27·30	43·55
6473	" 17, 1925	38·61	26·16	42·61
6827	Oct. 8, 1925	38·32	30·82	49·97
6826	" 8, 1925	39·67	29·51	48·91
4195	" 10, 1925	37·91	30·15	48·56
4196	" 10, 1925	38·35	30·95	50·20
4193	" 10, 1925	39·88	27·43	45·62
4194	" 10, 1925	39·45	28·33	46·79
6796	" 13, 1925	33·24	32·80	49·13
6335	" 10, 1925	37·34	28·50	45·48
6009	" 20, 1925	41·11	28·05	47·63
6010	" 20, 1925	37·77	30·41	48·87
6011	" 20, 1925	39·00	30·27	49·62
6012	" 20, 1925	37·12	31·57	50·21
4865	April 15, 1926	38·33	30·62	49·65
4866	" 15, 1926	40·21	27·39	45·81
4867	" 15, 1926	37·97	29·87	48·14
6922	" 24, 1926	36·71	31·81	50·26
6923	" 24, 1926	35·95	31·19	48·69
4873	" 30, 1926	38·32	27·80	45·07
4874	" 30, 1926	37·59	28·16	45·12
1	May 7, 1926	39·20	28·34	46·61
3	" 7, 1926	39·51	27·07	44·75
4	" 7, 1926	37·91	28·04	45·16
5	" 7, 1926	37·42	27,65	44·18
6	" 7, 1926	38·07	28·00	45·21
.....	" 10, 1926	43·48	26·65	47·51
6928	" 25, 1926	36·93	30·22	47·75
6929	" 25, 1926	38·26	29·44	47·68
.....	June 14, 1926	40·02	29·96	49·95
.....	" 15, 1926	40·59	28·67	48·26
6968	Oct. 2, 1926	36·58	30·01	47·32
6974	" 16, 1926	38·84	29·93	48·93
Totals and averages, 48	.....	39·02	28·84	47·35

There was considerable variation in the composition of different samples of process cheese. The maximum moisture content was 43.48 per cent, with a minimum of 33.24 per cent, giving a range of 10.24 per cent. The maximum fat content was 32.80 per cent, with a minimum of 24.87 per cent, a range of 7.93 per cent. The samples of process cheese analyzed showed a higher average per cent moisture content and lower average fat content than was found in Cheddar cheese. The average per cent fat in the water free substance was also lower than found in Cheddar cheese.

Summary

1. A total of 444 samples of Cheddar cheese of all grades and different textures were analyzed for fat and moisture.
2. The average composition of the 444 samples was as follows: moisture, 34.82 per cent; fat, 33.75 per cent; fat in the water free substance, 51.77 per cent; casein and other solids, 31.43 per cent.
3. A total of 227 analyses of first grade Cheddar cheese gave the following average composition: moisture, 34.48 per cent; fat, 34.07 per cent; fat in water free substance, 51.98 per cent; casein and other solids, 31.45 per cent.
4. Considerable variation occurred in the composition of individual samples of first grade Cheddar cheese, as shown by the moisture and fat ranges: moisture range, 8.09 per cent with a maximum of 38.84 per cent and a minimum of 30.75 per cent; fat range, 9.90 per cent with a maximum of 39.96 per cent and a minimum of 30.06 per cent.
5. Much uniformity was found in special and first grade Cheddar cheese, as 90.4 per cent of these cheese fell within a range of 2 per cent above and 2 per cent below the average moisture content, and 83 8 per cent within the same fat range.
6. There was no definite relation between the texture and the ratio of the principal constituents of Cheddar cheese. Different cheese of the same texture showed considerable variation in the moisture and fat content. A higher fat content than the average is usually accompanied by lower moisture content, and vice versa.
7. Quebec Cheddar cheese showed a higher average percentage of fat and a lower average percentage of moisture than Ontario Cheddar cheese.
8. First grade Cheddar cheese from the different provinces showed only slight variations in the average composition from one year to another.
9. First grade Cheddar cheese from different districts of the same province had approximately the same average composition.
10. The average percentage of fat in the water free substance was 51.77, which is 6.7 per cent higher than specified in the legal standard for Canadian cheese.
11. The 48 samples of process cheese had the following average composition: moisture, 39.02 per cent; fat, 28.84 per cent; fat in water free substance, 47.35 per cent.
12. Process cheese had a higher average moisture content and lower average fat content than Cheddar cheese.

APPENDIX

Details of the Analyses of Canadian Cheddar Cheese

ONTARIO

Collection No.	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
6310	June 20, 1925	33·16	35·86	53·65	2nd	Mealy.
6314	July 10, 1925	32·43	33·12	49·01	1st	Firm.
6313	" 10, 1925	35·68	32·09	49·89	1st	Perfect.
6267	" 17, 1925	31·37	32·52	47·38	2nd	Corky.
6312	" 3, 1925	35·69	30·67	47·69	1st	Sl. weak.
6202	" 17, 1925	37·00	32·33	51·32	3rd	Off. flavour.
6308	June 12, 1925	35·95	29·19	45·57	2nd	Firm, sl. fruity.
6253	July 3, 1925	34·12	30·69	46·58	1st	Good.
6262	" 9, 1925	34·24	31·70	48·21	1st	Good.
6250	" 3, 1925	36·95	33·18	52·62	1st	Sl. weak.
6210	May 28, 1925	34·28	39·32	59·83	1st	Good.
6319	July 31, 1925	33·69	33·29	50·20	1st	Perfect.
6307	June 12, 1925	34·39	31·53	48·06	2nd	Firm.
6239	" 18, 1925	30·37	35·38	50·81	2nd	Coarse, lean.
6320	July 31, 1925	31·61	33·86	49·51	1st	Firm.
6321	Aug. 8, 1925	33·44	34·15	51·31	1st	Perfect.
6290	" 7, 1925	35·39	34·36	53·18	1st	Good.
6291	" 7, 1925	33·75	36·50	55·09	1st	Sl. coarse.
6295	" 7, 1925	34·31	33·63	51·19	2nd	Acidy, not clean.
6296	" 7, 1925	34·76	35·02	53·67	1st	Good.
6208	May 28, 1925	37·16	33·17	52·78	1st	
6228	June 11, 1925	35·83	31·95	49·79	Special	Good.
6303	May 29, 1925	36·34	33·00	51·84	2nd	Quite weak.
6305	June 6, 1925	39·65	33·19	55·00	2nd	Well, made, sl. rancid.
6215	May 28, 1925	35·63	33·28	51·70	3rd	Good, rancid.
6211	" 28, 1925	33·95	34·42	52·11	1st	Good.
6221	June 1925	34·04	34·89	52·89	1st	Good.
6219	" 1925	33·78	35·75	53·99	1st	Good.
6226	" 11, 1925	34·63	31·21	47·74	1st	Good.
6218	" 1925	34·04	33·71	51·11	1st	Good.
6227	" 11, 1925	35·36	31·01	47·97	No grade	Crumbly, very acidy.
6222	" 1925	35·61	34·13	53·01	1st	Sl. weak.
6403	Aug. 14, 1925	33·04	35·76	53·40	2nd	Coarse, rancid.
6300	" 14, 1925	33·69	34·13	51·47	2nd	Sl. gassy.
6401	" 14, 1925	34·16	34·84	52·92	1st	Greasy.
6402	" 14, 1925	35·69	33·69	52·38	3rd	Rancid.
6323	" 14, 1925	33·39	35·68	53·57	1st	Perfect.
6324	" 14, 1925	34·32	34·70	52·83	2nd	Mealy, weak.
6207	May 1925	35·61	36·04	55·97	2nd	Weak, open.
6209	" 1925	35·14	34·64	53·41	1st	
6306	June 6, 1925	34·10	33·29	50·51	1st	Perfect.
6212	May 28, 1925	33·07	35·64	53·25	1st	Good.
6301	" 22, 1925	34·07	33·49	50·80	1st	Perfect.
6304	" 29, 1925	30·92	33·70	48·78	1st	Perfect.
6220	" 1925	35·10	33·19	51·14	1st	Good.
6201	" 1925	37·37	31·05	49·58	2nd	Weak, not clean.
6203	" 1925	38·08	34·52	55·75	2nd	Not clean.
6231	June 11, 1925	33·20	35·68	53·41	1st	Firm.
6302	May 22, 1925	34·49	33·87	51·70	1st	Quite firm.
6230	June 11, 1925	36·27	32·70	51·31	1st	Good.
6216	May 28, 1925	36·02	34·02	53·17	1st	Good.
6413	Aug. 21, 1925	35·45	35·71	55·32	2nd	Fair, sl. off flavour.
6410	" 21, 1925	36·59	32·86	51·82	2nd	Coarse, sl. acid.
6407	" 21, 1925	34·92	34·52	53·04	1st	Sl. weak, and open.
6408	" 21, 1925	37·82	36·29	58·36	No grade	Weak, gassy, not clean.
6325	" 28, 1925	35·10	36·13	55·74	2nd	Weak, mealy.
6326	" 28, 1925	33·32	37·14	55·69	1st	Firm.
6414	" 28, 1925	34·44	34·28	52·28	3rd	Not clean.
6420	" 28, 1925	35·07	31·15	47·97	2nd	Acidy, not clean.
6421	" 28, 1925	32·73	34·90	51·88	2nd	Acidy, not clean.
6327	Sept. 5, 1925	36·20	32·57	51·05	2nd	Weak, pasty.
6328	" 5, 1925	34·38	31·93	48·66	1st	Firm.
6422	" 4, 1925	31·94	34·76	51·07	3rd	Rancid.
6423	" 4, 1925	41·73	32·50	55·77	No grade	Very gassy.

Details of the Analyses of Canadian Cheddar Cheese—*Continued*

ONTARIO—*Continued*

Collection No.	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
6426	Sept. 4, 1925	33·87	35·35	53·45	2nd	Good, fruity.
6427	" 4, 1925	34·91	31·97	49·12	3rd	Rancid.
6429	" 4, 1925	34·24	33·40	50·79	2nd	Sl. rancid.
6432	" 11, 1925	33·59	32·67	49·19	2nd	Fruity.
6433	" 11, 1925	34·83	33·43	51·29	2nd	Acidy.
6435	" 11, 1925	33·52	35·36	53·19	1st	Firm and meaty.
6436	" 11, 1925	33·06	35·23	52·63	2nd	Not clean.
6437	" 11, 1925	34·56	33·88	51·77	3rd	Off flavour.
6449	" 16, 1925	36·42	33·16	52·15	3rd	Very weak.
6450	" 16, 1925	33·61	33·36	50·25	Special	Perfect.
6451	" 16, 1925	36·58	31·17	49·15	2nd	Weak, moist.
6452	" 16, 1925	34·01	33·21	50·33	1st	Perfect.
6329	" 19, 1925	37·71	29·90	48·00	2nd	Acidy, mealy.
6330	" 19, 1925	34·81	32·68	50·13	1st	Good.
6453	" 22, 1925	34·93	31·13	47·84	2nd	Too moist.
6454	" 22, 1925	34·82	32·64	50·08	2nd	Weak, moist.
6455	" 22, 1925	41·35	29·17	49·74	2nd	Very weak..
6456	" 22, 1925	34·49	32·57	49·72	Special	Perfect.
6331	" 26, 1925	38·84	32·49	53·12	1st	Firm.
6332	" 26, 1925	34·53	34·32	52·42	1st	Firm.
6477	" 28, 1925	31·63	34·03	49·77	2nd	Too dry, lumpy.
6478	" 28, 1925	35·18	32·47	50·09	2nd	Dry, acidy.
6482	" 30, 1925	36·07	33·74	52·78	2nd	Pasty, sl. acid.
6483	" 30, 1925	33·53	33·77	50·80	1st	Perfect.
6333	Oct. 3, 1925	35·95	33·25	51·91	1st	Sl. weak.
6334	" 3, 1925	34·79	32·44	49·75	1st	Firm.
6486	" 5, 1925	37·27	33·47	53·35	Special	Perfect.
6488	" 7, 1925	36·98	29·41	46·67	Cull	Very acidy.
6489	" 7, 1925	40·56	31·19	52·47	"	Too moist.
6492	" 7, 1925	29·91	34·21	48·81	3rd	Coarse, stiff, dry.
6336	" 10, 1925	36·19	33·10	51·87	3rd	Very weak, pasty.
6337	" 17, 1925	36·33	32·55	51·12	1st	Sl. weak.
6338	" 17, 1925	34·77	32·89	50·42	1st	Perfect.
6497	" 23, 1925	37·44	31·52	50·38	2nd	Pasty, too moist.
6498	" 23, 1925	35·73	34·73	54·04	1st	Good.
6499	" 23, 1925	33·52	34·03	51·19	1st	Perfect.
7001	" 27, 1925	34·42	36·99	56·40	2nd	Pasty, too moist.
7003	" 27, 1925	34·25	34·92	53·11	1st	Perfect.
7005	" 28, 1925	35·06	33·96	52·29	1st	Perfect.
7006	" 28, 1925	37·94	32·18	51·85	2nd	Weak, sl. pasty.
7007	" 28, 1925	34·26	34·84	52·99	1st	Almost perfect.
7011	Nov. 3, 1925	36·82	35·02	55·43	3rd	Moist, not clean.
7012	" 4, 1925	34·89	32·54	49·97	1st	Perfect.
7013	" 4, 1925	37·28	30·06	47·92	1st	Almost perfect.
7014	" 4, 1925	35·67	33·66	52·32	3rd	Good, rancid.
7015	" 4, 1925	39·82	30·07	49·96	2nd	Pasty, too moist.
7016	" 6, 1925	36·95	29·19	46·29	2nd	Rubbery, turnipy.
7017	" 6, 1925	37·19	30·24	48·14	2nd	Rubbery, turnipy.
7020	" 10, 1925	34·55	34·59	52·85	1st	Perfect.
7023	" 10, 1925	35·27	33·86	52·31	1st	Perfect.
7024	" 11, 1925	36·69	31·77	50·18	2nd	Pasty, too moist.
7025	" 11, 1925	36·62	34·93	55·11	2nd	Pasty, too moist.
7026	" 11, 1925	36·69	35·70	56·39	2nd	Pasty.
7018	" 10, 1925	35·29	34·20	52·85	1st	Perfect.
7019	" 10, 1925	34·46	35·50	54·16	1st	Perfect.
7028	" 16, 1925	37·92	33·06	53·25	2nd	Pasty, too moist.
7029	" 16, 1925	36·67	31·76	50·15	1st	Perfect.
7030	" 17, 1925	36·82	31·35	49·62	2nd	Lumpy.
7031	" 17, 1925	38·57	31·54	51·34	2nd	Pasty, moist.
7034	" 18, 1925	39·71	30·25	50·17	2nd	Pasty, too moist.
7043	April 13, 1926	33·66	36·16	54·51	1st	Good.
7044	" 13, 1926	33·80	34·36	51·90	1st	Firm.
7045	" 13, 1926	38·04	32·52	52·48	1st	Sl. weak.
7046	" 13, 1926	32·86	35·43	52·77	1st	Good.
7047	" 20, 1926	36·18	34·22	53·62	1st	Perfect.
7048	" 20, 1926	37·14	31·94	50·81	1st	Good.
7049	" 20, 1926	37·67	33·19	53·25	1st	Sl. weak.
7050	" 21, 1926	40·89	29·60	50·08	2nd	Weak.
7052	" 26, 1926	38·24	31·58	51·13	2nd	Weak.

Details of the Analyses of Canadian Cheddar Cheese—*Continued*

ONTARIO—*Continued*

Collection No.	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
7053	April 26, 1926	38·76	32·13	52·46	2nd	Weak.
7054	" 27, 1926	38·21	31·56	51·08	2nd	Weak.
7055	" 27, 1926	36·59	33·59	52·97	1st	Good.
7056	" 28, 1926	37·42	33·49	53·51	2nd	Weak.
7057	" 28, 1926	36·45	33·33	52·45	2nd	Weak.
7058	" 29, 1926	36·74	32·14	50·80	1st	Good.
7059	" 29, 1926	36·14	31·24	48·92	1st	Good.
7060	May 3, 1926	35·24	34·74	53·64	1st	Perfect.
7061	" 4, 1926	34·60	34·47	52·70	1st	Good.
7062	" 4, 1926	39·59	31·22	51·68	2nd	Weak, sl. open.
7063	" 4, 1926	38·41	30·46	49·45	1st	Sl. weak.
7064	" 5, 1926	39·00	32·81	53·79	2nd	Weak.
7065	" 5, 1926	41·78	30·76	52·83	2nd	Weak.
7066	" 6, 1926	34·95	33·52	51·53	1st	Sl. stiff.
7067	" 6, 1926	38·19	32·03	51·82	2nd	Weak.
7068	" 6, 1926	31·26	35·10	51·06	3rd	Too stiff.
7070	" 7, 1926	38·39	33·16	53·82	3rd	Very weak.
7072	" 11, 1926	39·26	32·20	53·01	2nd	Weak.
31–26	" 12, 1926	38·31	31·56	51·16	2nd	Weak.
32–26	" 12, 1926	37·29	31·32	49·94	2nd	Sl. weak.
7073	" 12, 1926	38·14	32·68	52·82	2nd	Sl. weak.
7074	" 12, 1926	38·72	31·86	51·99	2nd	Sl. weak.
7075	" 12, 1926	37·46	32·39	51·79	2nd	Sl. weak.
7076	" 13, 1926	39·30	30·50	50·24	2nd	Weak.
7077	" 17, 1926	39·85	29·62	49·24	2nd	Weak.
7078	" 17, 1926	36·45	32·25	50·74	2nd	Sl. weak.
7079	" 18, 1926	37·88	30·59	49·24	2nd	Weak.
7080	" 18, 1926	36·48	32·95	51·87	2nd	Sl. weak.
7082	" 19, 1926	34·95	34·76	53·43	1st	Good.
7083	" 19, 1926	35·69	33·44	51·99	1st	Good.
7084	" 19, 1926	39·34	31·48	51·89	2nd	Sl. weak.
7085	" 19, 1926	35·05	33·63	51·78	1st	Perfect.
7086	" 19, 1926	40·67	30·32	51·10	2nd	Weak.
7087	" 25, 1926	33·52	34·26	51·54	1st	Perfect.
7088	" 25, 1926	34·41	34·56	52·69	1st	Perfect.
7089	" 25, 1926	35·03	35·12	54·05	2nd	Sl. weak.
7090	" 26, 1926	37·31	33·51	53·45	2nd	Weak.
7091	" 26, 1926	33·95	33·45	50·64	1st	Good.
7092	" 26, 1926	39·97	30·24	50·37	2nd	Weak.
7093	" 26, 1926	32·71	34·79	51·70	1st	Good.
7094	" 26, 1926	34·50	34·55	52·75	1st	Good.
7095	" 31, 1926	35·82	32·24	50·23	1st	Good.
7096	" 31, 1926	33·14	35·21	52·66	1st	Good.
7098	June 1, 1926	38·88	32·80	53·66	2nd	Weak.
7099	" 1, 1926	37·68	33·84	54·30	3rd	Weak.
7100	" 1, 1926	34·65	35·49	54·31	1st	Good.
7902	" 2, 1926	36·69	32·59	51·47	1st	Good.
7903	" 2, 1926	29·88	36·02	51·37	3rd	Too stiff.
7905	" 7, 1926	36·23	30·95	48·53	1st	Good.
7906	" 11, 1926	34·29	32·29	49·14	1st	Perfect.
7907	" 11, 1926	33·20	35·83	53·63	1st	Good.
7909	" 11, 1926	33·64	34·33	51·73	2nd	Good.
7910	" 11, 1926	33·58	32·02	48·21	1st	Too green.
7911	" 11, 1926	34·61	34·67	53·02	2nd	Perfect.
7912	" 11, 1926	36·27	32·83	51·51	2nd	Weak, open.
7913	" 11, 1926	36·48	33·25	52·35	1st	Sl. weak.
7914	" 11, 1926	34·77	34·27	52·54	1st	Good.
7918	" 15, 1926	34·09	31·93	48·44	2nd	Good.
7919	" 15, 1926	29·65	35·89	51·02	2nd	Too stiff.
7920	" 15, 1926	35·00	34·20	52·61	1st	Good.
7923	" 16, 1926	35·53	31·68	49·14	1st	Good.
7924	" 16, 1926	34·05	34·78	52·73	1st	Good.
7925	" 16, 1926	29·63	36·33	51·62	2nd	Too stiff.
7926	" 16, 1926	37·73	30·65	49·22	2nd	Weak.
7927	" 16, 1926	33·03	34·91	52·12	1st	Too green.
7928	" 16, 1926	34·23	33·61	51·10	1st	Too green.
7929	" 16, 1926	32·52	33·79	50·08	2nd	Too stiff.
7930	" 22, 1926	35·67	34·12	53·04	2nd	Weak, open.
7934	" 23, 1926	35·45	31·91	49·43	2nd	Fair.

Details of the Analyses of Canadian Cheddar Cheese—*Continued*

ONTARIO—*Continued*

Collection No.	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
7935	June 23, 1926	35·09	31·71	48·85	2nd	Too green.
7936	" 23, 1926	34·64	32·24	49·32	1st	Good.
7939	" 23, 1926	37·98	30·99	49·97	1st	Sl. weak.
7941	" 23, 1926	35·29	33·17	51·26	1st	Too green.
7942	" 23, 1926	33·71	33·17	50·03	1st	Too green.
7943	" 23, 1926	30·87	33·05	47·81	2nd	Too stiff.
7944	" 23, 1926	34·33	32·49	49·47	1st	Good.
7945	" 29, 1926	34·15	32·64	49·57	1st	Good.
7946	" 29, 1926	36·82	31·96	50·58	2nd	Weak.
7947	July 2, 1926	33·46	33·24	49·95	1st	Good.
7953	" 6, 1926	35·11	31·61	48·71	2nd	Fair, sl. acid.
7954	" 6, 1926	36·06	29·31	45·84	2nd	Fair, sl. acid.
7955	" 6, 1926	36·72	30·39	48·02	2nd	Fair, sl. acid.
7956	" 6, 1926	36·05	30·43	47·58	2nd	Fair, sl. acid.
7957	" 6, 1926	35·42	31·21	48·33	2nd	Fair, sl. acid.
7963	" 7, 1926	35·39	32·67	50·56	1st	Good.
7964	" 7, 1926	32·45	32·43	48·01	2nd	Dry and stiff.
7961	" 7, 1926	29·86	36·05	51·39	3rd	Stiff, rancid.
7972	" 14, 1926	33·33	33·38	50·07	2nd	Stiff.
7973	" 14, 1926	31·91	33·26	48·85	2nd	Stiff.
7974	" 14, 1926	35·08	31·62	48·70	1st	Good.
7975	" 14, 1926	35·06	32·51	50·06	1st	Good.
7978	" 20, 1926	32·67	32·28	47·94	2nd	Too stiff.
7979	" 20, 1926	37·28	31·89	50·84	2nd	Sl. weak.
7980	" 20, 1926	33·29	33·04	49·53	1st	Good.
7981	" 21, 1926	35·12	32·19	49·61	1st	Good.
7982	" 21, 1926	34·79	32·66	50·08	1st	Good.
7983	" 22, 1926	38·65	31·41	51·19	2nd	Weak.
7986	" 27, 1926	33·78	31·62	47·75	2nd	Stiff.
7987	" 27, 1926	31·71	34·32	50·25	2nd	Too stiff.
7988	" 28, 1926	34·76	33·90	51·96	1st	Perfect.
7989	" 28, 1926	36·13	33·44	52·35	2nd	Weak.
7990	Aug. 3, 1926	34·13	33·63	51·05	1st	Good.
7991	" 3, 1926	35·58	31·34	48·65	1st	Good.
7992	" 3, 1926	34·45	32·89	50·17	2nd	Good.
7993	" 3, 1926	33·68	34·03	51·31	1st	Good.
7994	" 3, 1926	34·51	33·02	50·42	3rd	Good.
7995	" 3, 1926	34·14	34·81	52·85	1st	Good.
7996	" 9, 1926	30·86	34·87	50·43	2nd	Too stiff.
7997	" 12, 1926	37·66	33·05	53·01	2nd	Weak.
7998	" 12, 1926	33·23	34·79	52·10	1st	Good.
7999	" 16, 1926	33·57	35·46	53·38	1st	Good.
8101	" 16, 1926	30·07	34·57	49·43	3rd	Too stiff.
8104	" 17, 1926	28·21	36·06	50·23	3rd	Too stiff.
8105	" 18, 1926	36·28	33·76	52·98	2nd	Weak.
8107	" 24, 1926	36·22	33·20	52·05	1st	Fair.
8108	" 24, 1926	34·25	33·33	50·69	1st	Good.
8109	" 24, 1926	31·33	35·27	51·36	2nd	Too stiff.
8110	" 25, 1926	32·40	35·70	52·81	1st	Good.
8111	" 25, 1926	31·75	35·07	51·38	1st	Fair.
8112	" 25, 1926	32·45	35·61	52·72	1st	Fair.
8113	" 27, 1926	33·71	33·51	50·55	2nd	Good.
8114	" 27, 1926	34·91	33·82	51·96	1st	Good.
8115	" 27, 1926	33·79	33·62	50·77	1st	Good.
8118	Sept. 2, 1926	35·31	30·68	47·42	1st	Good.
8119	" 2, 1926	31·88	32·97	48·40	1st	Good.
8120	" 2, 1926	32·74	35·11	52·20	1st	Good.
8121	" 7, 1926	35·99	33·48	52·30	1st	Good.
8122	" 7, 1926	34·75	33·68	51·62	1st	Good.
8123	" 8, 1926	35·00	32·74	50·37	1st	Good.
8124	" 10, 1926	34·19	35·13	53·38	1st	Sl. weak.
8128	" 17, 1926	36·78	31·61	50·00	1st	Good.
8129	" 17, 1926	35·57	31·81	49·37	1st	Good.
8130	" 17, 1926	33·39	34·07	51·15	1st	Stiff.
8131	" 17, 1926	37·34	34·45	54·98	2nd	Weak.
8156	" 28, 1926	33·55	34·60	52·07	1st	Good.
8157	" 28, 1926	33·91	34·12	51·62	1st	Good.
8158	" 28, 1926	33·85	34·81	52·62	1st	Good.
8159	" 28, 1926	34·50	33·99	51·89	1st	Good.

Details of the Analyses of Canadian Cheddar Cheese—*Continued*

ONTARIO—*Concluded*

Collection	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
8160	Sept. 28, 1926	34·03	35·16	53·29	1st	Good.
8161	" 28, 1926	32·49	36·92	54·68	1st	Good.
8162	" 28, 1926	35·33	34·25	52·96	1st	Good.
8163	" 28, 1926	35·46	33·05	51·21	1st	Good.
8164	" 28, 1926	34·03	34·84	52·81	1st	Good.
8165	" 28, 1926	34·48	34·39	52·49	1st	Good.
8166	" 28, 1926	34·55	32·85	50·19	1st	Good.
8167	" 28, 1926	34·62	33·88	51·82	1st	Good.
8168	" 28, 1926	33·16	35·73	53·45	1st	Good.
8169	" 28, 1926	34·14	32·90	49·95	1st	Good.
8170	" 28, 1926	32·61	34·62	51·37	1st	Good.
8171	" 28, 1926	35·65	33·81	52·54	1st	Good.
8172	" 29, 1926	34·95	34·49	53·02	1st	Good.
8173	" 29, 1926	34·83	33·29	51·08	1st	Good.
8174	" 29, 1926	34·47	32·92	50·24	1st	Good.
8175	" 29, 1926	34·79	34·14	52·35	1st	Good.
8176	" 29, 1926	33·96	33·73	51·07	1st	Good.
8177	" 29, 1926	35·79	33·19	51·69	1st	Good.
8178	" 29, 1926	32·83	34·60	51·51	1st	Good.
8179	" 29, 1926	33·46	34·91	52·46	1st	Good.
8180	Oct. 11, 1926	35·35	35·23	54·49	2nd	Weak.
8181	" 11, 1926	32·06	36·00	52·99	2nd	Too stiff.
8182	" 21, 1926	35·01	34·22	52·65	1st	Good.
8183	" 21, 1926	33·46	33·87	50·90	1st	Good.
241–26	" 27, 1926	32·58	34·92	51·79	1st	Good.
242–26	" 27, 1926	35·99	31·77	49·63	1st	Sl. weak.
243–26	" 27, 1926	35·02	34·42	52·97	2nd	Weak, not clean.
244–26	" 27, 1926	35·46	33·01	51·15	2nd	Weak, pasty.
245–26	" 27, 1926	37·47	31·38	50·18	2nd	Good, turnipy.
246–26	" 27, 1926	36·58	31·77	50·09	1st	Sl. weak.
247–26	" 27, 1926	32·22	34·17	50·41	1st	Too stiff.
248–26	" 27, 1926	35·87	34·66	54·05	2nd	Weak, pasty.
6342	Nov. 1, 1926	37·09	32·75	52·06	1st	Sl. weak.
6341	" 1, 1926	34·39	33·42	50·94	1st	Good.
6340	" 1, 1926	35·74	32·73	50·93	1st	Firm.
6339	" 1, 1926	36·59	31·57	49·79	1st	Perfect.
253–26	" 9, 1926	37·00	32·62	51·78	2nd	Weak.
254–26	" 9, 1926	35·05	32·22	49·61	2nd	Weak.
6343	" 5, 1926	33·56	32·33	48·66	1st	Firm.
6344	" 5· 1926	36·64	31·75	50·11	1st	Sl. weak.
6345	" 5, 1926	35·35	33·35	51·58	1st	Perfect.
6346	" 3, 1926	35·94	33·64	52·51	1st	Sl. weak.
6347	" 3, 1926	34·29	34·61	52·67	1st	Firm.
6348	" 5, 1926	34·66	33·38	51·09	1st	Sl. stiff.
6349	" 5, 1926	35·33	32·94	50·93	1st	Good.
6350	" 3, 1926	34·33	33·57	51·12	2nd	Sl. weak, off flavour.

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6235	June 18, 1925	34·06	33·76	51·19	1st	Good.
6287	July 29, 1925	30·75	39·96	57·70	1st	Coarse.
6271	" 17, 1925	35·71	32·30	50·24	3rd	Gassy, not clean.
6247	June 26, 1925	36·26	32·73	51·35	2nd	Good, fruity.
6217	May 29, 1925	38·65	32·25	52·57	2nd	Weak, fruity.
6292	Aug. 7, 1925	33·51	36·86	55·44	2nd	Gassy, fruity.
6293	" 7, 1925	42·06	30·53	52·69	No grade	Very weak, gassy.
6294	" 7, 1925	32·75	35·25	52·48	"	Very gassy.
6204	May 1925	35·63	35·83	55·66	1st	
6223	June 1925	36·94	34·66	54·96	3rd	Weak, open, not clean.
6233	" 11, 1925	34·73	35·78	54·82	2nd	Acidy.
6232	" 11, 1925	33·45	33·69	50·62	2nd	Good, fruity.
6405	Aug. 14, 1925	34·76	33·17	50·84	2nd	Fruity, sl. gassy.
6298	" 14, 1925	33·38	35·09	52·67	1st	Good.
6299	" 14, 1925	34·47	36·45	55·62	3rd	Acidy, gassy.
6205	.....	33·11	34·11	50·99	1st	
6206	.....	33·55	36·09	54·31	1st	

Details of the Analyses of Canadian Cheddar Cheese—*Continued*

QUEBEC—*Continued*

Collection No.	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
6224	May 29, 1925	36·38	35·41	55·66	3rd	Sl. weak, very fruity.
6213	" 28, 1925	35·54	35·54	55·13	1st	Good.
6229	June 11, 1925	35·03	35·81	55·12	1st	Sl. heated.
6412	Aug. 21, 1925	34·29	36·26	55·18	2nd	Sl. acidy, not clean.
6411	" 21, 1925	32·46	36·67	54·29	2nd	Sl. gassy, not clean.
6409	" 21, 1925	34·38	35·46	54·03	3rd	
6415	" 28, 1925	34·95	34·77	53·45	No grade	Weak, sour, gassy.
6416	" 28, 1925	33·58	33·39	50·27	2nd	Gassy, not clean.
6418	" 28, 1925	32·44	33·89	50·16	2nd	Sl. gas, not clean.
6419	" 28, 1925	33·57	35·87	53·99	2nd	Sl. gassy.
6424	Sept. 4, 1925	30·91	36·45	52·76	2nd	Sl. gas.
6428	" 4, 1925	32·54	33·54	49·72	1st	Good.
6425	" 4, 1925	34·12	31·58	47·93	3rd	Acidy, not clean.
6430	" 11, 1925	34·08	34·06	51·67	2nd	Sl. acid, not clean.
6431	" 11, 1925	34·00	33·91	51·38	1st	Good.
6434	" 11, 1925	37·48	29·98	47·95	3rd	Open, very fruity.
6438	Sept. 15, 1925	25·74	36·79	49·54	3rd	Too dry, lumpy.
6439	" 15, 1925	35·83	32·94	51·33	2nd	Too moist, not clean.
6440	" 15, 1925	32·42	34·46	50·99	Special	Perfect.
6441	" 15, 1925	34·54	34·00	51·94	2nd	Weak, too moist.
6448	" 16, 1925	33·52	33·07	49·74	Special	Perfect.
6460	" 16, 1925	33·72	33·43	50·44	Special	Perfect.
6461	" 16, 1925	35·25	34·68	53·56	2nd	Too moist.
6457	" 23, 1925	40·77	32·11	54·21	3rd	Very weak, moist.
6474	" 23, 1925	29·00	37·15	52·32	2nd	Too stiff, dry.
6475	" 23, 1925	32·67	35·57	52·83	2nd	Weak, pasty.
6476	" 23, 1925	34·41	34·69	52·89	2nd	Too moist.
6479	" 29, 1925	29·22	35·08	49·56	2nd	Stiff, lumpy.
6480	" 29, 1925	33·34	35·44	53·16	Special	Perfect..
6484	" 30, 1925	34·44	34·97	53·34	2nd	Weak, pasty.
6485	Oct. 5, 1925	31·07	36·99	53·66	2nd	Dry, lumpy.
6487	" 6, 1925	33·53	34·92	52·53	2nd	Too stiff.
6490	" 7, 1925	33·81	37·61	56·82	2nd	Weak, moist.
6491	" 7, 1925	35·34	36·72	56·79	2nd	Weak, moist.
6493	" 23, 1925	29·53	35·12	49·84	2nd	Too stiff.
6494	" 23, 1925	35·60	34·74	53·94	2nd	Pasty, too moist.
6495	" 23, 1925	34·07	36·94	56·03	1st	Good.
6496	" 23, 1925	32·85	36·83	54·84	1st	Good.
6500	" 27, 1925	32·51	36·88	54·64	3rd	Lumpy, rancid.
7002	" 27, 1925	33·92	36·89	55·82	3rd	Sl. lumpy, rancid.
7004	" 28, 1925	30·46	37·09	53·33	2nd	Too stiff.
7008	Nov. 2, 1925	39·83	33·03	54·89	2nd	Pasty, too moist.
7009	" 2, 1925	33·96	36·34	55·03	3rd	Sl. lumpy, rancid.
7010	" 2, 1925	32·32	37·39	55·24	2nd	Coarse, lumpy.
7021	Nov. 10, 1925	35·67	35·08	54·53	2nd	Pasty, too moist.
7022	" 10, 1925	30·84	38·04	55·00	2nd	Lumpy.
7027	" 16, 1925	28·53	37·09	51·89	2nd	Dry, lumpy.
7051	April 22, 1926	35·61	34·31	53·28	1st	Perfect.
7069	May 7, 1926	33·93	31·60	47·83	2nd	Stiff.
7071	" 11, 1926	33·15	34·98	52·33	2nd	Stiff, rubbery.
7097	" 31, 1926	36·33	33·38	52·42	2nd	Weak.
7904	June 7, 1926	31·85	35·83	52·57	1st	Stiff.
7908	" 11, 1926	33·50	35·34	53·14	2nd	Fair.
7915	" 15, 1926	34·52	34·59	52·82	1st	Good.
7916	" 15, 1926	35·04	34·16	52·59	2nd	Sl. weak.
7917	" 15, 1926	33·56	35·26	53·07	Special	Good.
7921	" 15, 1926	31·89	36·48	53·56	2nd	Too stiff, lumpy.
7922	" 16, 1926	31·85	35·65	52·31	2nd	Too stiff.
7931	" 22, 1926	35·54	34·65	53·75	1st	Good.
7932	" 22, 1926	32·56	36·29	53·81	1st	Good.
7933	" 23, 1926	32·19	35·47	52·30	1st	Good.
7937	" 23, 1926	32·89	34·16	50·90	2nd	Too stiff, dry.
7938	" 23, 1926	36·88	33·24	52·66	1st	Sl. weak.
7940	" 23, 1926	34·23	33·83	51·44	2nd	Good.
7960	July 7, 1926	37·10	33·29	52·92	3rd	Sl. weak, rancid.
7962	" 7, 1926	34·72	33·19	50·84	3rd	Good, rancid.
7976	" 15, 1926	32·62	36·04	53·49	Special	Perfect.
7977	" 15, 1926	33·50	33·05	49·69	Special	Perfect.

Details of the Analyses of Canadian Cheddar Cheese—*Concluded*

QUEBEC—*Concluded*

Collection	Date	Per cent moisture	Per cent fat	Per cent fat in water free substance	Grade	Texture Remarks
7984	July 22, 1926	33·64	33·52	50·51	1st	Good.
7985	" 27, 1926	33·05	34·69	51·81	Special	Perfect.
8102	Aug. 17, 1926	32·72	34·02	50·56	1st	Perfect.
8103	" 17, 1926	33·38	36·34	54·55	Special	Perfect.
8106	" 24, 1926	32·95	36·11	53·85	1st	Good.
8116	" 31, 1926	33·29	33·61	50·38	1st	Good.
8117	Sept. 14, 1926	33·89	31·61	47·81	1st	Good.
8125	" 14, 1926	34·55	35·30	53·93	1st	Good.
8126	" 14, 1926	32·83	36·57	54·44	1st	Good.
8127	" 14, 1926	39·02	33·86	55·52	2nd	Weak.
8132	" 27, 1926	34·16	34·91	53·02	1st	Good.
8133	" 27, 1926	32·31	37·34	55·16	1st	Good.
8134	" 27, 1926	34·37	35·47	54·04	1st	Good.
8135	" 27, 1926	32·61	37·26	55·29	1st	Good.
8136	" 27, 1926	31·72	37·62	55·09	1st	Good.
8137	" 27, 1926	34·73	34·28	52·52	1st	Good.
8138	" 27, 1926	33·61	36·14	54·43	1st	Good.
8139	" 27, 1926	35·85	36·30	56·59	1st	Good.
8140	" 27, 1926	35·25	34·84	53·80	1st	Good.
8141	" 27, 1926	34·54	34·63	52·90	1st	Good.
8142	" 27, 1926	31·64	36·43	53·29	1st	Good.
8143	" 27, 1926	32·91	36·58	54·52	1st	Good.
8144	" 27, 1926	35·08	36·17	55·71	1st	Good.
8145	" 27, 1926	33·29	36·69	54·99	1st	Good.
8146	" 27, 1926	36·48	35·16	55·35	1st	Good.
8147	" 27, 1926	36·57	36·27	57·18	1st	Good.
8148	" 27, 1926	34·54	36·62	55·94	1st	Good.
8149	" 27, 1926	32·39	37·79	55·89	1st	Good.
8150	" 28, 1926	33·36	36·95	55·44	1st	Good.
8151	" 28, 1926	32·97	36·51	54·46	1st	Good.
8152	" 28, 1926	33·94	35·79	54·18	1st	Good.
8153	" 28, 1926	34·06	34·87	52·88	1st	Good.
8154	" 28, 1926	34·59	35·48	54·24	1st	Good.
8155	" 28, 1926	35·76	33·67	52·41	1st	Good.
8184	Oct. 21, 1926	34·74	33·78	51·76	1st	Good.
8185	" 21, 1926	35·19	34·19	52·75	1st	Good.

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6297	Aug. 7, 1925	32·76	32·83	48·83	1st	Firm.
6404	" 14, 1925	33·81	34·12	51·55	1st	Firm.
6406	" 21, 1925	33·23	36·14	54·13	2nd	Sl. fruity.
6417	" 28, 1925	32·90	34·12	50·85	2nd	Gassy, not clean.
7032	Nov. 17, 1925	34·37	33·33	50·78	1st	Firm, almost perfect.
7033	" 18, 1925	32·21	34·01	50·17	2nd	Stiff.

PUBLICATIONS ON DAIRYING

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