## WHY

 AND HOW TO USE MILK

DAIRY AND COLD STORAGE BRANCH

Publishid by authority of the Hon. JAMES G. GARDINER, Minister of.Agriculture Ottawa, Canada
"The strength of a nation depends on the health and strength of its individual members. It matters not how wealthy a nation may become, how large its cities, how vast its armies and navies, if the health of its people is on the decline, it will rapidly perish and decay."-Benj. Disraeli, Former Prime Minister of England.

THIS is a message to you, Canadian women, for on you rests the responsibility of providing young Canadians with suitable food for health, and for mental and physical growth. The well-being of your family depends, in large measure, on the food which you give them to eat, and upon the welfare of your family depends the future welfare of the nation.

Study your foods, and be able to make a wise choice in quality and quantity. There are many under-nourished children in Canada, but under-nourishment is not always the result of too little food, very often it is because of unsuitable food.

Milk and dairy products are pre-eminent among the foods which nature provides. They are available in every part of Canada at comparatively low cost. They are nutritious, economical, easy to prepare, and can be served in an endless variety of ways. Give them a bigger place in the day's menus. This little book may help you. It is given to you in the hope that your family will benefit in better health, greater efficiency and the saving of money.

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## DAIRY PRODUCTS

Whole Milk<br>Skim-milk<br>Buttermilk<br>Condensed Milk<br>Evaporated Milk<br>Powdered Milk<br>Cheese<br>Butter<br>Ice Cream

How much of your expenditure for food buys dairy products? Dr. Sherman, Columbia University, says the following is a wise division of each $\$ 10$ spent:-
Milk and its products (Butter, Ice Cream and Cheese) . \$ 440Vegetables and Fruits.
Bread and Cereals ..... 130
Meat and Fish ..... 120
Eggs ..... 060
Miscellaneous ..... 050
Sugar. ..... 030
Total ..... $\$ 1000$
TABLE OF WEIGHTS AND MEASURES

|  | teaspoons. . . . . . . .. .. .. .. 1 ta |
| :---: | :---: |
| 6 | tablespoons. . . . . .. . . . . . . 1 cup |
| 2 | cups. . . . . . . . . . . . . . . . . 1 pint |
| 4 | cups.. .. .. .. .. .. .. .. .. .. 1 quart |
| 2 | cups butter... . . . .. . . . . . . . 1 pound |
| 2 | cups granulated sugar.. .. .. .. 1 pound |
| $2{ }^{2}$ | cups brown sugar.. .. .. .. .. 1 pound |
|  | cups flour.. .. . . . .. .. .. .. 1 pound |
|  | medium sized eggs.. .. .. .. .. 1 pound |1. 70

## ABBREVIATIONS



All measurements in these recipes are level.

## THE VALUE OF MILK

MILK and its products are indispensable to the growth of the child and to the health of the adult. For these, there is no substitute. For the infant, milk is a perfect food; for the growing child, milk and the products of the dairy are essential foods; and for adults, they are the most important foods.

Food is not merely "something to chew." It must furnish material for the growth and repair of the body, material for body heat and energy and material for use by the body as regulating substances. Milk fulfils all these requirements. It contains protein from which the body builds new cells and repairs worn-out tissues. It contains fat and sugar, which serve as a source of heat and energy for muscular activity, and it contains mineral matter which has a regulatory effect and which enters into the composition of the body, especially the bones and teeth.

Not only does milk supply these demands, but it contains also the essential food factors, or vitamines.-Fat-soluble A, Water-soluble B, Fat-soluble E, and Water-soluble G, without which normal growth is impossible and without which the health of the adult cannot be maintained.

On account of the amount of water in milk, it is often thought expensive by many who do not know its real food value. This is chiefly because it is in liquid form, and because it is often used as a beverage. Milk, however, has not as high a percentage of water as strawberries, turnips, tomatoes, oysters, and many other foods in solid form. About four-fifths of the human body is made up of water. Although milk contains such a high percentage of water, it is still an indispensable food, because its solids have all the food essentials which entitle milk and milk products to the main place in the diet of the young and of the old.

THIN
1 tbsp. butter
1 tbsp. flour
$\frac{1}{4}$ tsp. salt
Pepper
1 c. milk

CREAM SAUCE

## MEDIUM

2 tbsp. butter
2 tbsp. flour
$\frac{1}{4} \mathrm{tsp}$. salt
Pepper
1 c. milk

THICK
3 tbsp. butter
3 or 4 tbsp. flour
$\frac{1}{4}$ tsp. salt Pepper
1 c. milk

## METHODS OF MAKING

## Method No. 1:

Melt butter, stir in flour and seasonings until smooth. Stir in the milk gradually and cook, stirring constantly, until it thickens.

Method No. 2:
Mix the flour smoothly with a little cold milk. Heat the rest of the milk in a double boiler. Add the flour and stir constantly until the mixture thickens. Add the butter and seasonings.

Less butter will be required if Method No. 2 is followed.
Thin cream sauce is the basis for cream soups and is used for milk toast.
Medium cream sauce is used for creamed vegetables, fish, meat, etc.
Thick cream sauce is the foundation for croquettes and soufflés.

## CHEESE SAUCE

Make a medium cream sauce and to this add one-third cup of grated cheese. Reheat slowly until the cheese is melted. Serve at once with toast, macaroni, or poached eggs.

## EGG SAUCE

Make a medium cream sauce and add one finely chopped, hard boiled egg. Serve with fish.

## ParsLey SaUCE

Make a medium cream sauce and to this add 3 tablespoons of finely chopped parsley.

## BREAD SAUCE

1 c. milk
${ }^{\frac{3}{4}}$ c. stale bread crumbs
2 or 3 slices onion
$\frac{1}{2}$ tsp. salt

Pepper
4 Pepper corns
1 tbsp. butter

Scald the milk with the onion and pepper corns about five minutes. Remove pepper corns and onion and add the butter, bread crumbs, salt and pepper. Cook a few minutes longer and serve hot with boiled or roast fowl.

## PROTEIN IN MILK

FROM the food which we eat, the body must obtain material for the formation of new cells and repair of the worn-out tissues. This is supplied by protein. But all proteins are not alike in quality and it is, therefore, important to know the kind, as well as the amount, contained in our foods.

Proteins are not simple substances, but are made up of chemical units called amino acids, which in turn differ in physiological value. These amino acids, eighteen in number, have been compared to the letters of the alphabet, for as in words, letters appear in different combinations, so the amino acids occur in proteins, and the value of the protein depends on the amino acids contained in it.

Experiments by investigators in the science of nutrition show that when cereal grains are the only source of protein in the diet of growing animals, only about 30 per cent of the protein is used as building material by the body, but when the protein is supplied by milk alone, 65 per cent of the protein is utilized. Furthermore, when these two foods are used together, the milk proteins supplement those of the cereals, so that not only are the milk proteins utilized as before, but a much larger percentage of the cereal proteins. The deficiencies of other foods are counterbalanced by milk in the diet. When we serve milk with cereal, with bread, or other foods made from grains, we are not only using the nutrients in milk, but are conserving for body uses much other protein which otherwise would be wasted.

Casein and lactalbumin are the two proteins in whole milk and they are also found in skim-milk, buttermilk and cheese. The mother who gives her children plenty of milk either alone or in combination with other foods is supplying the best quality of building material for a sound and healthy body.

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## CREAM SOUPS

The basis of cream soups is a thin cream sauce, flavoured with vegetable pulp.

Part of the liquid may be vegetable water instead of all milk.
The vegetables may be freshly cooked, or any cold leftovers may be used. The vegetables should be pressed through a sieve or mashed evenly. Combinations of two or three vegetables may be used if the flavours blend.

Cream of potato soup does not require as much flour on account of the large amount of starch in the vegetable.

Special directions are necessary for cream of tomato soup on account of the acidity of the tomato.

## CREAM OF VEGETABLE SOUP

```
4 tbsp. flour
2 to 4 tbsp. butter
4 c. milk
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$\frac{1}{2}$ tsp. salt
Pepper
1 c. vegetable pulp

Make a cream sauce of the first five ingredients, using Method No. 1 or No. 2. Into this, stir the vegetable pulp. Reheat if necessary. Serve hot.

## POTATO SOUP

3 potatoes
$1 \frac{1}{2}$ tsp. salt
1 qt. milk
3 tbsp. butter
2 tbsp. flour
$\frac{1}{4}$ tsp. celery salt
$\frac{1}{8}$ tsp. pepper
Few grains cayenne
1 tbsp. chopped parsley

Cook potatoes in boiling salted water. When soft, drain and rub through a sieve. Scald the milk with the onion. Remove the onion and add milk slowly to the potato pulp. Mix the flour to a smooth paste with a little cold milk and stir this gradually into the hot mixture. Cook a few minutes, stirring constantly. Add butter and seasonings. Sprinkle with finely chopped parsley, if desired.

## SALMON SOUP

```
1 qt. milk
1 small can or \(\frac{1}{2}\) large can salmon
2 tbsp. butter
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4 tbsp. flour
1 tsp. salt Pepper

Make a cream sauce using Method No. 2. Drain the oil from the salmon, mash evenly and add to the sauce. Serve hot.

## MINERAL MATTER IN MILK

WE could not dispense with mineral matter in our food any more than we could dispense with the protein which is so important as body building material. Mineral salts, or ash, of food, acts as body regulating substances. They also enter into the composition of the cells and are the chief constituents of certain parts of the body such as bones, teeth, etc. It is not possible to have a strong body without a strong firm skeleton any more than it would be possible to build a good house, without a satisfactory frame work.

Chief of all the mineral materials for this purpose is calcium or lime and the ordinary mixed diet is very often deficient in this substance. Milk is richest of all common foods in lime and this factor alone would make it one of the most necessary foods in the child's diet.

When the body is growing, the bones are being built longer and thicker and stronger and the amount of lime required is in proportion greater than when the body has attained full growth. Fruit and vegetables, particularly green vegetables, also contain lime, but the chief source is milk and its products with the exception of butter, which has no lime. Lime is essential for strong bones and good hard teeth.

Phosphorus is also present in milk. This mineral enters into all the cells of the body and is another substance in which a mixed diet is often deficient. The amount of dairy products which will supply lime in necessary quantities will also supply sufficient phosphorus for body needs.

Milk does not contain much iron, but the amount present is readily absorbed and thoroughly utilized. The lime which is present in milk is believed to increase the body's ability to use iron.
"By far the most practical means of insuring abundance of calcium in the diet is to use milk freely as a food."-Dr. Sherman, Columbia University.

## CREAM OF TOMATO SOUP

> 2 c. tomatoes
> 2 slices onion
> 2 tsp. sugar
> 1 qt. milk

4 tbsp. flour
4 tbsp. butter

Cook tomatoes, sugar and onion together for 15 minutes. Melt the butter
1 tsp. salt
Pepper and stir in the flour until smooth. Stir in the milk and seasonings and cook, stirring constantly, until thick. Press tomatoes through a sieve and stir slowly into the sauce. Serve at once.

1 qt. milk
2 or 3 slices onion
2 tbsp. butter
2 tbsp. flour

CHEESE SOUP
Yolks of 2 eggs
$\frac{1}{2}$ c. grated cheese
1 tsp. salt
Scald the milk with the onion. Melt the butter in the top part of a double boiler and stir in the flour until smooth. Stir into this the heated milk and seasonings and cook in a double boiler, stirring constantly, until thick. Into this stir the beaten egg yolks. Cook one minute and add the grated cheese. Beat with a Dover egg-beater and serve at once.

Egg yolks may be omitted, but make a richer, more delicious soup.

## CORN SOUP

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1 can corn
1 pt. boiling water
1 pt. milk
1 slice onion
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${ }_{2}^{2}$ tbsp. butter
2 tbsp. flour
1 tsp. salt
Pepper

Simmer water, corn and onion for 20 minutes. Press through a sieve. Make a cream sauce of the remaining ingredients. Add the vegetable pulp, reheat if necessary and serve hot. One tablespoonful chopped parsley may be added.

## CROUTONS (To serve with soup)

Cut stale bread into about one-third inch cubes. Put in a pan in the oven until slightly browned, or fry in deep fat.

## CHEESE CRACKERS

Butter crackers sparingly and spread evenly with grated cheese. Place in a hot oven until the cheese is melted.

## CARBOHYDRATES IN MILK

THE function of carbohydrates in food is to furnish heat and energy for the body to do its work. Starch and sugar belong to this class and in milk the carbohydrate is in the form of lactose or milk sugar. This, when separated from milk, can be bought on the market in the form of white powder resembling confectioner's sugar. In composition, it is somewhat similar to cane sugar, but is much less sweet and does not dissolve so readily.

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Milk sugar is thought by many to have a special physiological value and, for this reason, is very often used for modifying cow's milk for artificially fed babies.

"The cheapest, safest and best food for children is good clean milk."-Dr. Helen MacMurchy, Former Chief, Division. of Child Welfare, Department of Health, Ottawa.

## CORN CHOWDER

1 can corn
4 c. potatoes cut in small cubes
2 tbsp. bacon fat or pork dripping
1 slice onion

1 tsp. salt Pepper
4 c. scalded milk
3 tbsp. butter

Parboil potatoes five minutes in boiling water. Cook the onion and fat togt aier for five minutes, stirring frequently. Drain potatoes and add to the onion and fat. Stir in two cups of boiling water and cook all together until the potatoes are soft. Add the corn. Stir in the milk and butter. Season and serve hot.

## FISH CHOWDER

$\frac{1}{2} \mathrm{lb}$. salt fish (cod or haddock)
1 qt. milk
3 potatoes cut in small cubes

2 tbsp. chopped onion
2 tbsp. bacon fat or butter Pepper

Cut the fish into small pieces. Soak in cold water about two hours and drain. Cook the onion and fat together a few minutes, stirring frequently. Add potatoes, fish and about two cups water. Cook until potatoes are soft, then add the milk. Season with pepper and serve hot.

One pound of fresh fish may be used instead of salt fish. It is not necessary to soak fresh fish before cooking.

## VEGETABLE CHOWDER

4 potatoes
3 medium sized carrots
3 small onions
2 c. tomatoes (canned)

2 tbsp. butter
3 tbsp. flour
2 c. milk
2 tsp. salt

Cut potatoes and carrots into small cubes and cook carefully, in sufficient boiling water to cover, for 20 minutes. Chop the onion finely and cook with the butter about five minutes. Mix the flour to a smooth paste with a little cold milk. Add the onions and tomatoes to the cooked vegetables. Heat and stir into this the heated milk and seasonings. Stir in the flour and cook a few minutes longer. Serve hot.

## OYSTER STEW

1 c. oysters
2 c. milk
1 tbsp. butter
$\frac{1}{2}$ tsp. salt
Pepper
3 tbsp. biscuit crumbs

Strain the oysters over a bowl. Pick over and rinse with cold water. Add the crumbs and oyster liquid to the milk and heat in a double boiler. Add the butter, seasonings and oysters and cook until the oysters are plump and the edges begin to curl. Serve at once.

## VITAMINES IN MILK

WITHIN the last few years, investigators in nutrition have proven the presence in certain foods of essential factors which are indispensable to growth and to health. These are called vitamines and, although as yet not a great deal is known of them, some food experiments have shown that there are at least six kinds, all of which are present in milk.

Fat-soluble A: Without this factor in the diet of children, normal growth and development of the body or of the mental powers is impossible. It is closely associated with the fats in certain foods and is also found in the leaves of green vegetables, in egg fat, and in the embryo of most seeds. Whole milk, cream and butter are rich in this vitamine, and even skimmilk contains a certain amount. This vital element is not contained in vegetable fats or lard. A small amount is found in beef suet.

Water-soluble B: This second vitamine is found in milk. Eggs, fruit, whole grains, vegetables, and the green leaves of plants also contain it. The cow which feeds almost altogether on green feed concentrates in her milk the surplus from the leaves not required for her own maintenance. The milk whcih she produces contains much Water-soluble B vitamine.

Fat-soluble E: This vitamine is associated with normal reproduction. It is widely distributed among foods, grains (especially the germ), vegetables, meat, whole milk, and butter being its best sources.

Water-soluble $G$ : Vitamine G is a factor in the prevention of pellagra, and is also important for normal nutrition, growth and health. Milk, eggs, green vegetables, meat (especially glandular organs) and yeast all supply this vitamine.

Water-soluble C and Fat-soluble D: Both these vitamines are necessary for the normal development of bones and teeth. Neither is abundant in milk, although both may be present in appreciable amounts, the latter being found in the butter-fat. Butter, cream, whole milk, egg yolk and liver are practically all the natural foods containing vitamine D .
"If the true nutritive value of milk and its various products were fully realized, they would be more appreciated and much more freely used."-Prof. R. Harcourt, O.A.C., Guelph, Ont.

## MILK TOAST

1 c. milk
1 tbsp. flour
1 tbsp. butter
Few grains of salt

Melt the butter. Stir in the flour until smooth and frothy. Stir in the milk and cook, stirring constantly, until thickened. Pour over squares of dry toast. Let stand a minute or two and serve hot.

## JUNKET

| 1 Junket tablet | 1 tbsp. cold water |
| :--- | :--- |
| 1 qt. milk | 4 tbsp. sugar |$\quad$ Flavouring

Dissolve the junket thoroughly in the cold water. Heat the milk until only lukewarm. Add the sugar and, when dissolved, stir quickly into this the dissolved junket tablet and flavouring. Pour into a glass dish and let stand in a warm place until set. Chill and serve. If the milk becomes too hot, let stand until lukewarm before adding the dissolved tablet.

## IVORY JELLY

| 1 tbsp. granulated gelatine | Vanilla |
| :--- | :--- |
| 11. | c. rich milk |
| $2 \frac{1}{2}$ tbsp. sugar | Few grains of salt |

Soak the gelatine in three tablespoons of the cold milk. Heat the rest of the milk. Add the sugar, salt and soaked gelatine. Strain. When cool, add the flavouring and pour into a cold, wet mould. Chill and serve with cream or fruit juice.

## COCOANUT BLANG MANGE


$4 \begin{aligned} & \text { thsp, sugar } \\ & \text { Salt }\end{aligned}$ Salt. sugar $\frac{1}{3}$ tsp. vanilla $\frac{1}{4} \mathrm{c}$. shredded cocoanut

Mix the corn starch, sugar and salt in a double boiler with enough cold milk to make a smooth paste. Stir into this the scalded milk and cook, stirring constantly, until it thickens. Let cook slowly for 15 minutes, stirring frequently. Remove from the fire, add vanilla and cocoanut. Pour into a cold, wet mould and chill thoroughly.

To this recipe may be added, if desired, the yolk of one egg, or one whole egg. The egg white may be beaten until stiff and folded into the mixture when it has finished cooking. If an egg is used, a little less corn starch will be required.

## MILK WITH CEREAL

Milk may be added to any cereal when it is being cooked.
Put the cereal to cook in about half the amount of boiling saited water usually used. Stir over the fire a few minutes, then place in a double boiler. Add enough skim-milk or whole milk to make up the other half of the liquid. Cook slowly and, when done, serve with milk. This makes a very palatable and nutritious cereal. Rice, oatmeal, rolled oats, corn meal, cream of wheat, etc., are delicious cooked in this way.

## DIGESTIBILITY OF MILK

MILK is food in liquid form. As soon, however, as it reaches the stomach it is separated into curds and whey. The curd is chiefly the protein part of the milk and this is acted upon by the digestive juices and broken down into suitable form for absorption by the body. About 80 per cent of the protein in milk is casein, which is one of the most easily digested of any forms of protein. Lactalbumin, the other main protein in milk, is found in the whey and is believed by*Dr. Graham Lusk, of Cornell University, to be "as perfect a material for use in the service of growth as any protein known."

The ease with which fats are digested depends largely upon whether they melt at a high or low temperature. Butter fat requires but little heat to keep it in liquid form and partly for this reason is one of the most easily digested fats. It is then easy to understand why, apart from its special nutritive qualities, it is of particular value for invalids and children.

Milk is more easily digested when taken in combination with other foods, except in the diet of babies. It is better to sip milk slowly rather than to take large amounts at once, as this will prevent the formation of hard curds in the stomach.

The physiological value of any food does not depend entirely on its composition, but rather on the amount of material contained which can be digested and converted into an avialable form for assimilation.

All, or nearly all, the solids in milk are digested. There is no waste.

## BAKED CUSTARD

| 2 c. milk | $\frac{1}{4}$ tsp. salt |
| :--- | :--- |
| 2 or 3 eggs | Flavouring |
| $\frac{1}{4}$ c. sugar |  |

Beat the eggs slightly and add the sugar and salt. Stir in the heated milk slowly. Strain into a buttered mould or into small buttered cups. Add flavouring. Place the moulds in a pan of hot water, allowing the water in the outer dish to come almost to the top of the mould. Place in a moderate oven and bake until firm. This may be determined by running a silver knife through the custard; if the knife comes out clean, the custard is set. Remove at once.

The water in the pan should not be allowed to reach boiling temperature, or the custard will curdle.

For cup custards, one egg to one cup of milk is sufficient. A larger custard requires more eggs.

This custard may be covered and cooked in a steamer over boiling water instead of baked in the oven.

FLAVOURING FOR CUSTARDS (To one cup milk)

Few gratings of nutmeg
Few drops vanilla
1 tbsp. cocoa
1 c. milk
$1 \frac{1}{2}$ tbsp. sugar
Salt
Scald the milk in a double boiler. Beat the egg slightly and add the sugar and salt. Stir the hot milk into the beaten egg. Return to the double boiler and cook, stirring constantly, until the mixture is thick enough to form a coating on a cold spoon. Remove at once and strain into a cold dish. When cold, add the flavouring.

If custard sauce has become slightly curdled, it may be remedied by beating vigorously with a Dover egg-beater.

## CUSTARD PIE



Grated rind of lemon
2 tbsp. strong coffee infusion
1 tbsp. caramel

## CUSTARD SAUCE

1 egg
Flavouring

Mix the ingredients as for baked custard. Fill an uncooked pie shell with the mixture and bake in a slow oven.

## CARE OF MILK IN THE HOME

THE consumer has a right to demand clean milk. Dirty milk is not only disgusting, but sometimes dangerous. Very often, however, milk which has been carefully handled by the producer is spoiled by careless treatment in the home. "Cleanliness" should be the watchword of every person who has to do with milk, on the farm, in the dairy, during transportation, or in the home.

When we consider some of the characteristics of milk, we cannot but realize the importance of proper care in handling it. Bacteria grow readily in milk and pasteurization is the method commonly adopted for the destruction of disease germs which may find entry into it. In many cities, pasteurization is compulsory, but if milk has not been pasteurized at the dairy, it can easily be done in the home.

Because the growth of bacteria is more rapid in a warm temperature, milk should be kept as cool as possible. Below 50 degrees F. growth is retarded. In the home, a refrigerator is the most convenient way of keeping milk, but if a refrigerator is not used, it is a good plan to wrap the bottle in a wet cloth and stand it in a dish of cold water by an open window. The evaporation of the water will keep the milk cool.

Milk should not be exposed to dirty or dusty air. In cities, the best way to buy milk is in bottles. If these are delivered early in the morning, a small covered box to hold the bottles will protect them from the sunlight and from prowling cats and dogs.

Milk absorbs flavours easily and should not be placed near foods with a pronounced odour, such as onions, cabbage, fish, etc.

If a refrigerator is used, the milk should be placed on the lower shelf and should always be kept closely covered. After the cap has been taken off the bottle, a satisfactory cover is an inverted tumbler. It is better to keep milk in the bottle, pouring out only enough for immediate use. If any of this amount remains, it should not be poured back into the bottle, as it will be of a higher temperature. As soon as the milk bottle is emptied, it should be rinsed in clear cold water, then washed and thoroughly scalded. All utensils, such as milk pails, separator, milk bottles, towels, etc., which are used in caring for milk should be kept scrupulously clean. Daily exposure to strong sunlight will aid in keeping them sweet and wholesome.

## BARLEY PUDDING



Wash the barley. Add the milk, salt and sugar and cook in a double boiler until the barley is tender. If desired, the pudding may be turned into a buttered baking dish and placed in the oven during the last half of the time required for cooking.

## RICE PUDDING

> 6 tbsp. rice
> 2 eggs
$\frac{1}{4}$ tsp. salt
Flavouring

Wash rice and put with the milk in the top part of a double boiler. Cook until soft. Beat the eggs and add the sugar. Stir into this the hot milk and return to the double boiler. Stir constantly until it thickens. Remove from the fire and add flavouring. The egg whites may be beaten until stiff and folded into the mixture when it has finished cooking.

The eggs may be omitted. If eggs are not used, eight tablespoons of rice will be required.

## TAPIOCA CREAM

$\frac{1}{4}$
2
c. tapioca
2 c. milk

Salt
1 tsp. vanilla

Soak the tapioca in lukewarm water about one hour. Scald the milk. Into this, add the strained tapioca and cook in a double boiler until the tapioca is clear and transparent. Beat the yolks of the eggs. Add the sugar and salt, and into this stir the milk and tapioca. Return to the double boiler and stir until it thickens. Remove, add flavouring and into this fold the stiffly beaten egg whites. Serve cold.

## SPANISH CREAM

| 2 tbsp. granulated gelatine | $\frac{1}{3}$ c. sugar |
| :--- | :---: |
| 3 c. milk | Salt |
| Whites of 3 eggs | 1 tsp. vanilla |
| Yolks of 3 eggs |  |

Soak the gelatine in the cold milk in the top part of a double boiler, then put over the heat until the gelatine is thoroughly dissolved. Beat the egg yolks, add the sugar and into this stir the scalded milk. Return to the double boiler and cook, stirring constantly, until thickened. Strain and set aside to cool. When the mixture begins to thicken slightly, fold in the stiffly beaten whites of the eggs and turn into a cold wet mould. Chill and serve with cream.

If small moulds are desired, one tablespoonful gelatine will be sufficient.

## CREAM

THE fat of milk is spoken of as butter fat, because it is from this that butter is made. Commercially, the fat is the most important constituent of milk and, although in whole milk the average is only between 3 and 4 per cent of the total, market milk is judged by the depth of the cream line or the amount of butter fat which it contains.

"The Healthy Child is the Cream Line of a Nation."

The fat is in the form of small globules and when milk is perfectly fresh, the globules are distributed evenly throughout it. If milk stands for some time, these globules, being lighter than water, rise to the top and form cream. The fat globules are not always the same size, and are smaller in goat's milk than in cow's milk. Because of this, the cream rises very slowly in goat's milk.

Cream is not pure fat, but really whole milk with a very large percentage of fat. It contains some water, some protein, some mineral matter and most of the Fat-soluble A vitamine. Valuable as are the other constituents, it is the vitamine contained which places butter fat mile high above any other fats used as food, particularly in the diet of the growing boy or girl.

Give your child butter fat in whole milk, in cream and in butter.

## WHIPPED CREAM

Cream for whipping should contain about 30 per cent butter fat. It is better between 12 and 24 hours old and will whip more easily if chilled to below 40 degrees F .

If the cream is too thin to whip, a small amount of sour cream, or about one-half teaspoon lemon juice to one cup of cream will help to remedy it. Cream should double its bulk when whipped.

Both pasteurized and unpasteurized cream will whip. It may be flavoured with vanilla and powdered sugar.

## DEVONSHIRE CREAM

Pour whole milk into a large pan and allow to stand until the cream has risen to the top. Scald the milk without disturbing the cream. Remove from the fire, and when cold the cream may be taken off in a thick clotted condition. It has a delicious nutty flavour. This is very popular in England.

## SOUR CREAM SALAD DRESSING

Beat one cup sour cream until stiff. Add lemon or pineapple juice for flavouring.

This is delicious served with fruit salad and may also be served with green vegetable salads.

$$
\begin{array}{lll} 
& \text { SALAD DRESSING } & \text { Yolks of } 2 \text { eggs } \\
1^{\frac{1}{2}} \text { tsp. salt } & \text { tsp. mustard } & \frac{1}{4} \text { c. vinegar or lemon juice } \\
1 \frac{1}{2} \text { tbsp. sugar } & 1 \text { tbsp. butter } \\
2 \text { tbsp. flour } & \frac{3}{4} \text { c. milk }
\end{array}
$$

Mix the dry ingredients and add the slightly beaten egg yolks. Stir in the milk and cook, stirring constantly, until thick. Add the butter and stir in the vinegar or lemon juice very slowly. Strain and cool.

1. One whole egg may be used instead of two egg yolks.
2. The egg white may be beaten until stiff and folded into the dressing when cool.
3. If desired, the dressing may be thinned with cream.

## LEMON BUTTER BALLS

Mix one-half cup butter until soft and creamy and gradually add lemon juice to flavour. Form into round balls. If desired, roll in finely chopped
parsley. Serve with fish or broiled steak.

## BUTTER

THERE is no real substitute for butter. Butter is made from cream and is 80 per cent fat - not merely fat, but fat which contains the necessary factor, Fat-soluble A. No other fat, with the exception of cod liver oil and, to some extent, beef suet, supplies this growth essential. For this reason, no other fat can take the place of butter.

Dr. E. V. McCollum by experimentally feeding animals of the same species and of the same age purified diets which differed only in the form of fat given, found that "growth could be secured only when the fat in the mixture was butter fat, whereas no growth could be secured when the butter fat was replaced by lard, olive oil or other vegetable fat."

If other fats are used in place of butter for the children, more milk and cream in their diet is essential.

As a source of energy, one pound of butter is equal to $4 \frac{1}{2}$ pounds beefsteak or 38 eggs, and although other fats sold as butter substitutes are equal in energy producing value, no substance which does not contain the vital growth element can substitute butter fat in the child's diet.
"There is no substitute for butter fat."-Dr. Sherman, Columbia University.

## SKIM-MILK

ALL the "good" of the milk is not taken off with the cream-far from it. Cream is whole milk with a high percentage of fat. Skim-milk is whole milk with most of the fat removed. It contains all the other constituents of milk-protein, milk sugar, mineral matter, Water-soluble B and G and even a little Fat-soluble A. It will build bone, blood and muscle as surely as will whole milk and is one of the cheapest sources of protein available.

Protein foods are, as a rule, expensive, one exception being skim-milk and its products, such as cottage cheese. One and a half quarts of skim-milk will supply as much protein as one-half pound of lean beef-compare the cost of these two articles.

Skim-milk will at lowest cost also supply lime so necessary for the formation of bone and teeth. The farmer is well aware of the worth of skim-milk and buttermilk in the feeding of young animals and this is pointed out by Prof. Harcourt as one great testimony to their nutritive value.

It is not so delicious in flavour as whole milk, but it can be used in combination with other food materials in puddings, in cakes, in sauces, soups, etc. A little extra butter can be added to a recipe if desired.

Skim-milk cannot altogether take the place of whole milk in the diet on account of the lack of sufficient Fat-soluble A, but remember that it is good food. Do not waste it.

## COTTAGE CHEESE

2 qt. sour milk
1 tsp. salt

Pepper
3 tbsp. cream

Pour the milk into the top part of a double boiler and let stand in hot water until it separates into curds and whey. Strain through a double cheese cloth over a dish. Put the curd into a bowl, mix well and add the seasonings and cream. Cool and serve on lettuce leaves.

One and one-half tablespoon of butter may be used instead of cream.
The cheese may be formed into small round balls and rolled in finely chopped parsley. These make an attractive salad alone or in combination with vegetables or fruits.

If cheese is preferred with sweets such as fruit juice or jam, the pepper may be omitted and less salt used.

Cottage cheese with the addition of chopped nuts or chopped olives, makes a good filling for sandwiches.

## TOMATO AND COTTAGE CHEESE SALAD

Select medium sized ripe tomatoes. Peel and remove some of the pulp. Sprinkle with salt and fill with seasoned cottage cheese. Serve on crisp lettuce leaves with salad dressing.

## PINEAPPLE AND COTTAGE CHEESE SALAD

Place slices of pineapple on lettuce leaves. Place a ball or small mould of cottage cheese in the centre and garnish with chopped nuts or olives. This is delicious served with sour cream salad dressing.

## LEMON WHEY

Add the juice of one lemon and five tablespoons of sugar to the whey which drains off the curd when making cottage cheese from one quart of milk. Strain and serve hot or cold.

SPOON BREAD

| 2 c. corn meal | 1 tbsp. butter |
| :--- | :--- |
| $\frac{1}{2}$ tsp. salt | 1 egg |
| 1 c. sour milk or buttermilk | $\frac{1}{2}$ tap. soda |

Mix the corn meal, salt and butter with enough warm water to make a smooth paste. Add the beaten egg and sour milk and soda. Beat until smooth. Pour into a hot well buttered pan and bake quickly in a hot oven. Serve hot with butter.

## SOUR MILK

DO not throw away sour milk. All milk will sour naturally after a certain time. This is not a sign that milk is spoiled. The souring is due to harmless bacteria which act on the milk sugar, producing lactic acid. The acid acts on the protein and the milk gradually separates into curds and whey. The food value of milk is not destroyed because it has soured. It is a cheap and important source of protein and can be used to make many delicious dishes, such as cottage cheese, one pound of which contains as much protein as one pound of meat. Who does not like sour milk biscuits and griddle cakes?

## BUTTERMILK

BUTTERMILK is the curdled milk which remains when butter is churned from cream. It can also be made from skim-milk by allowing it to sour naturally at ordinary room temperature until it curdles, then shaking vigorously until the curd is broken up. Cooling immediately will prevent further fermentation and the development of objectionable flavours. A little cream may be added before serving if desired and the flavour will be very similar to old-fashioned buttermilk. Practically all commercial buttermilk is prepared from skim-milk and, chemically, there is no difference between this buttermilk and that which comes from a churn. From a dietetic standpoint, it is of equal importance.

The food value of buttermilk is about the same as that of skim-milk or sour milk and, like skim-milk, it is a particularly cheap source of protein. It is easily digested and is often prescribed by doctors for babies with weak digestion and for older people as a beverage in certain disorders. The delicious flavour of buttermilk is far famed.

[^2]
## SOUR MILK BISCUIT

2 c. flour
2 tbsp. butter
$\frac{1}{2}$ tsp. soda
$\frac{1}{2}$ tsp. salt
1 tsp. sugar
Sour milk to moisten (about $\frac{3}{4}$ cup)

Sift the dry ingredients. Cut in the butter evenly. Add the milk to make a stiff dough. Roll and bake in a hot oven about 15 minutes.

The dough should be handled as quickly as possible and mixed only enough to blend the ingredients.

## SOUR MILK GINGER BREAD

1 c. molasses
1 c. sour milk
$2 \frac{1}{3}$ c. flour

2 tsp. ginger
$1 \frac{3}{4}$ tsp. soda
Mix soda with sour milk and molasses. Sift the dry ingredients and combine the two mixtures. Add the melted butter. Beat. Pour into a greased tin and bake in a moderate oven about 25 minutes.

## SOFT GINGER BREAD

| 4 tbsp. butter | 2 tsp. cocoa | 1 tsp. ginger |
| :--- | :--- | :--- | :--- |
| $\frac{1}{2}$ c. sugar | $1 \frac{1}{2}$ c. sour milk | $\frac{1}{4}$ tsp. cinnamon |
| 1 egg | $1 \frac{3}{4}$ c. flour | $\frac{1}{4}$ tsp. salt |
| $\frac{1}{2}$ c. molasses | $\frac{3}{4}$ tsp. soda | 1 tsp. allspice |

Cream the butter. Add the sugar, beaten egg, molasses and milk. Sift together the dry ingredients and combine mixtures. Beat and bake in a moderate oven about 30 minutes.

## SOUR MILK GRIDDLE CAKES

| $2 \frac{1}{2}$ c. flour | $1 \frac{1}{4}$ tsp. soda |
| :--- | :--- |
| $2^{\frac{1}{2}}$ t.sp. salt | 1 egg $^{\text {c. sour milk }}$ |
| 2 | tbsp. melted butter |

Mix and sift the dry ingredients. Add the sour milk, melted butter and well beaten egg. Beat thoroughly and drop by spoonfuls on a hot greased girdle. When well puffed and cooked on the edges, turn carefully and cook on the other side.

Never turn a griddle cake twice or it will be heavy.

## WAFFLES

| c. milk |  | Salt |
| :---: | :---: | :---: |
| 1 c. sour milk or buttermilk |  | 1 egg yolk |
| $1 \frac{3}{4}$ c. flour |  | 1 egg white |
| $2 \frac{1}{3} \frac{1}{3}$ tsp. baking powder |  | 2 tbsp. melted butter |

Sift together the flour, baking powder, salt and soda. Combine sweet and sour milk. Add the unbeaten egg yolk and the sifted dry ingredients, then add the melted butter and beat thoroughly. Fold in the stiffly beaten egg white and cook on a hot greased waffle iron. Serve with lemon syrup or maple syrup.

## MILK POWDER

NEARLY all milk powders are made from skim-milk, although recently some whole milk is also being used for their manufacture. All, or almost all, of the water is removed, leaving only the milk solids. It is convenient and, in the case of skim-milk powder, keeps in good condition for a long time.

Powders made from whole milk do not keep well, as it is difficult to prevent the butter fat from becoming rancid. If used while fresh, they can be diluted to very closely resemble original milk.

## CONDENSED MILK

CONDENSED milk is whole milk from which much of the water has been evaporated and to which a certain amount of sugar has been added.
It is a convenient product, especially useful where fresh milk is not available. It is not bulky, can be easily carried and has excellent keeping qualities, partly due to the extra sugar added.

Condensed milk can be bought in cans of various sizes and can be used, after dilution with water, in much the same way as whole milk. The high percentage of sugar makes it unsuitable as a permanent diet for babies.

## EVAPORATED MILK

EVAPORATED milk is whole milk, less about one-half of the water and without the addition of extra sugar. It will keep indefinitely while unopened, but when exposed to the air should be treated as fresh milk.

If these are the only forms of milk given to children for any length of time, it is important to add fresh fruit juice to the diet, as these contain the Watersoluble C which is probably destroyed in the process of evaporating water from milk in the manufacture of milk powder, condensed and evaporated milk.

## PASTEURIZED MILK

THE object in pasteurizing milk is to destroy disease germs which may get into the milk either from a diseased cow or in some other way. The germs of tuberculosis, diptheria and other diseases are rendered harmless by proper and thorough pasteurization. Milk which has been pasteurized should not be kept longer than 24 hours before being used. In many cities, compulsory pasteurization is in force as a safeguard of the public health.

Milk can quite easily be pasteurized at home if it has not already been done at the dairy. No elaborate or expensive equipment is necessary. If milk is bought in bottles, pour out a little and replace the caps. Make a hole in the paper cap of one bottle and through this insert a small glass dairy thermometer. Set the bottles on a clean folded towel in a tin pail and around this pour warm water until it reaches nearly as high as the top of the bottles. (If the bottles are placed directly on the bottom of the pail, or if very hot water is poured around them, there is danger of the glass breaking.) Place the pail over a fire and heat until the thermometer in the bottle registers 145 degrees F. Remove from the fire and let the bottles stand in the water for 30 minutes, reheating if necessary to keep the temperature at 145 degrees F . After 30 minutes pour in cold water to replace the hot water around the bottles and cool the milk as quickly as possible to 50 degrees F. Keep as cold as possible until used.

If there is no thermometer at hand, milk may be pasteurized in the same way by heating the water around the bottles until a little below boiling point. Let stand in this water for 30 minutes and replace by cold water as rapidly as possible.

On the farm where milk is not bottled, it can be pasteurized in glass jars. The jars should first be thoroughly washed and sterilized. An ice box is best for keeping milk.

## CHEESE

> "From the standpoint of the housekeeper, cheese is of importance because of its high nutritive value, particularly its high percentage of protein or muscle-forming materials, because of the ease with which it can be kept and prepared for the table, and because of its appetizing flavour and of the great variety of ways in which it can be served."-Dr. C.F. Langworthy, United States Department of Agriculture.

For information regarding the food value of cheese and recipes for using it, refer to Bulletin "Why and How to Use Cheese," published by the Dairy and Cold Storage Branch, Department of Agriculture, Ottawa.

"There'll be no leavins, Doggie, this is ice cream."

## ICE CREAM

HAVE you thought of ice cream as merely a luxury? It is a real food. Besides containing all the nourishment of milk and cream, from which it is made, it is one of the most delicious desserts and a general favourite with young and old. It is of special value in the sick room, because it tempts the appetite of the invalid and provides nourishment in a form that is easily digested. Do not forget the food value of ice cream. Serve it often. The children love it, and they, as well as the rest of your family, will benefit.

Ice cream is on sale in most places, but if not available, it can be made at home without much trouble and with very little expense.

## SOME HINTS FOR MAKING ICE CREAM

1. The can and dasher of the freezer should be scalded and cooled before pouring in the mixture to be frozen.
2. The freezer crank should be turned steadily and evenly.
3. Salt and ice are required for freezing. Snow may be used instead of ice and, if not readily acted on by the salt, can be remedied by pouring in one cup of cold water.
4. About one-sixth as much salt as ice, by measure, is best for making smooth grained ice cream.
5. The mixture increases in bulk during freezing and, for this reason, the can should never be more than three-quarters full.

## MILK SHERBET

1 qt. milk
Juice of 3 lemons
$1 \frac{1}{2}$ c. sugar
Mix sugar and lemon juice and stir in the milk gradually. (The mixture will have a curdled appearance, but this will disappear in the freezing.) Pour into the freezer can, pack and turn until it freezes.

VANILLA ICE CREAM, No. 1
1 qt. cream
1 tbsp. vanilla
$\frac{2}{3}$ e. sugar
Add sugar and vanilla to cream. Freeze and serve. When the mixture is partly frozen, crushed fruit may be added, such as strawberries, peaches, bananas, or shredded pineapple.

VANILLA ICE CREAM, No. 2

3 c. scalded milk
1 egg
1 tbsp. flour

1 c. sugar
3 c. thin cream
1 tbsp. vanilla

Mix the flour and sugar together, add the slightly beaten egg and stir in the milk gradually. Cook over hot water about 15 minutes, strain and cool. Add the cream and flavouring. Freeze and serve.

## GINGER ICE CREAM

To vanilla ice cream No. 2, add one-half cup finely chopped Canton ginger and three tablespoons ginger syrup, when the mixture is partly frozen.

ORANGE ICE CREAM

2 c. cream
2 c. orange juice
Stir the orange juice and cream together. Add sugar and freeze.

## BUTTERMILK ICE CREAM

1 qt. buttermilk
$1 \frac{1}{2}$ c. sugar
1 egg
$\frac{3}{4}$ c. orange or other fruit juice
$\frac{1}{4}$ c. lemon juice

Beat the egg thoroughly, then beat in the sugar and buttermilk until the sugar is dissolved. When the mixture is partly frozen, add the fruit juice and finish freezing. Repack and let stand one hour to mellow.

## MILK FOR INVALIDS

PROPER diet is very important for healthy persons and it is doubly so in case of sickness and during convalescence. The amount of food and the form in which it is supplied play a large part in the recovery of the patient.

Milk is of inestimable value in the sick room and as a rule is the main source of nourishment. It is always, or nearly always, procurable. It is inexpensive, nutritious, easily digested and the variety of ways in which it can be served prevent the patient becoming tired of it.

When liquid diet alone is allowed, milk is the chief food served either in its natural state or in the form of thin gruels, thin soups, egg nogs, junket, jelly and ice cream. The last three forms very often appeal strongly to the capricious appetite of an invalid, particularly if the patient is a child. Buttermilk, Koumiss and Peptonized Milk are sometimes of special value in certain cases.

If a more varied diet is permissible, other foods may be added, but milk should always hold the chief place. The cure of tuberculosis and many other diseases depends in large measure on a generous supply of pure, rich milk and eggs.

With the exception of cheese, milk and milk products are the most important foods in the invalid's diet.

When preparing food for an invalid, remember that good food properly and attractively served aids immeasurably the progress toward renewed health.
"The well-known dietary rule of a quart of milk a day for every child, already amply justified by practical results, has received additional support from several angles through the recent advances in our knowledge of the chemistry of nutrition."-Dr. Sherman, Columbia University.

## KOUMISS

| 1 qt. milk | 1 tbsp. lukewarm water |
| :--- | :--- |
| $\frac{1}{3}$ yeast cake | $1 \frac{1}{2}$ tbsp. sugar |

Dissolve yeast cake in the lukewarm water. Heat the milk until lukewarm. Add the sugar and the yeast cake. Fill thick glass bottles within about two inches of the top. Cork tightly and tie down the cork with strong twine. Shake thoroughly and let stand inverted for about six hours at a temperature of 80 degrees F. Chill thoroughly. Serve the following day.

## PEPTONIZED MILK

1 pt . fresh milk
1 tube Fairchild's peptonizing powder
$\frac{1}{2}$ c. cold water
Put the powder and water into a sterilized bottle. Shake thoroughly and add the milk. Shake and place the bottle in water about 115 degrees F. Let stand 10 minutes, then place the bottle immediately on ice, or heat to boiling point. Either immediate and thorough chilling, or heating to boiling temperature will check further digestion of the milk. Keep in a cold place until used.

If allowed to stand longer than 10 minutes before being chilled or heated to boiling point, the milk will have a bitter taste.

## ALBUMENIZED MILK

$$
\frac{1}{2} \text { c. milk }
$$

1 or 2 egg whites
Add the egg whites to the milk and beat very slowly with a Dover eggbeater. Strain and flavour if desired. Serve cold.

EGG NOG
1 egg
$\frac{2}{3}$ c. milk
2 tsp. sugar

Beat the egg slightly and to this add the salt, sugar and flavouring. Stir in the milk. Strain and chill. The egg may be separated and the white beaten until stiff. Part of this may be folded into the egg and milk mixture and the remaining part piled lightly on the top. It may be sprinkled with a grating of nutmeg.

## OATMEAL GRUEL

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\frac{1}{2}}\mathrm{ c. coarse oatmeal
\frac{1}{2}}\mathrm{ c. oatmeal
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Flavouring
Few grains salt

## MILK FOR BABIES

E
VERY baby must have milk. It is the only food for the first nine months of life and after that age should be the chief food during childhood.
Not only does milk sustain the life of the baby, but it promotes rapid growth. It is known that mother's milk is a perfect food, but sometimes for various reasons this must be substituted by other milk. Because cows are the most common of any milk producing animal, their milk is most used. But cow's milk differs somewhat from mother's milk. It must be modified to resemble it as closely as possible. Cow's milk contains less sugar and about three times as much protein. The deficiency in sugar can be made up by the simple addition of milk sugar or cane sugar. Diluting the milk will more nearly approximate the proportion of protein. A doctor will explain how this should be done.

Mother's milk is best, but remember that babies must have milk, the purest, the cleanest and best available. The child is a most precious possession.


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PRINTER TO THE KING'S MOST EXCELLENT MAJESTY


[^0]:    "Milk!-the all-inclusive food and the cheapest-for growing children an essential."-J. A. Amyot, M.D., Former Deputy Minister, Department of Health, Ottawa.

[^1]:    "Milk and the leaves of plants are to be regarded as protective foods and should never be omitted from the diet. Milk is a better protective food than are the leaves, when used in appropriate amounts."-Dr. E. V. McCollum, Professor of Biochemistry, Johns Hopkins University.

[^2]:    "Milk is without doubt our most important foodstuff, because the composition of milk is such that when used in combination with other foodstuffs of either animal or vegetable origin, it corrects their dietary deficiencies."-Dr. E. V. McCollum.
    "Farmers who sell all or nearly all their milk and cream to other people, and let their own children go without, are wronging their children and depriving them of their indispensable food-the only food they can thrive and grow strong on."-Dr. Helen MacMurchy, Former Chief, Child Welfare Division, Department of Health, Ottawa.

