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EXTENSION DIVISION  
IN COOPERATION WITH  
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W. D. BENTLEY, DIRECTOR OF EXTENSION AND STATE AGENT

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LESSON XII

**MILK**

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1—REFERENCES

Farmers' Bulletin 363, "Use of Milk as Food", United States Department of Agriculture, Washington, D. C.

Farmers' Bulletin 413, "Care of Milk, and Its Use in the Home", United States Department of Agriculture, Washington, D. C.

Farmers' Bulletin 490, "Bacteria in Milk", United States Department of Agriculture, Washington, D. C.

Farmers' Bulletin 603, "Clean Milk, Production and Handling", United States Department of Agriculture, Washington, D. C.

2—DIETETICS

Milk on an average is about as much fat as protein and as carbohydrates. Milk is a valuable supplement to other foods like cereals, potatoes and other vegetables. It is a complete food, since it contains all of the food principles, and therefore builds and repairs tissues and gives heat and energy to the body. It is a perfect food for the young child because it contains the food principles in the right proportion. The large amount of water is useful to the young child in building and filling out tissues. It is not an ideal food for the adult, however, for it contains too much water and not enough carbohydrate. The carbohydrate is in the form of sugar, so it is digestible without being cooked. The principal mineral of milk is calcium (or lime). This is the mineral which the young child needs for building bones and teeth, and more of it is found in milk than in any other food.

The protein of milk is affected by heat just like any other protein food. It is made hard and tough when cooked at a high temperature. When milk is boiled the calcium (or lime) falls to the bottom of the vessel and the child loses this essential of his food. This mineral also aids in the digestion of other foods. Uncooked milk is most readily digested by most persons. Milk should be sipped if the greatest benefit is to be derived from it.

Since milk is a protein food, it is a meat substitute. When milk is taken in a large quantity, meat should not be eaten at that meal, or, on the other hand, if either meat or eggs have been eaten in a reasonable amount, milk should be used sparingly.

### 3—COMPOSITION

	Water	Protein	Fat	Carbohydrate	Ash
Whole milk .....	87.07	3.3	4.0	5.0	.7
Skim milk .....	90.00	3.4	.3	5.1	.7

Milk varies in composition. Some is poorer and some richer in fat. The above is the analysis of average good cow's milk.

### 4—PREPARATION AND CARE

See that all receptacles for milk are clean.

1. Rinse out with cool or lukewarm water.
2. Wash thoroughly in hot water to which some cleaning preparation, such as washing soda, has been added. Use a clean cloth or stiff brush.
3. Rinse with clean, hot water.
4. Sterilize them in boiling water.
5. Keep them in a clean place in pure air away from flies, out in the sunshine if possible.
6. Rinse again in clean water before using.

Keep milk as cool as possible. Keep it away from odors. Do not allow it to stand around on dining or kitchen tables uncovered.

Keep flies away from milk. Use only clean milk—dirty milk is dangerous.

Milk is a carrier of such diseases as diphtheria, scarlet and typhoid fever. In times of disease, epidemics, or when there is suspicion that milk is not pure, milk should be pasteurized to kill dangerous germs.

Pasteurization is explained in Farmers' Bulletin No. 413.

It is a dangerous practice to blow cream to one side or try with the breath to blow specks from the milk. This makes milk poisonous for food purposes.

Do not keep milk in a room where there is a sick person. It would be best to keep the milk in a box outside.

See that the cows' udders are washed before the cows are milked. Milk is an ideal substance for the growth of bacteria. Heating milk to boiling kills germs, but lessens the ease with which the milk is digested.

Cook foods containing milk in a double boiler, since milk should never reach the boiling point. If starch and milk are cooked together, as in white sauce, cornstarch pudding, etc., cook in a double boiler, but cook for a long time—from fifteen to thirty minutes, depending upon amount of starch used.

If you do not have a double boiler, improvise one. Cook the milk by putting it in a vessel and placing it in a larger one containing boiling water. The small vessel should be placed on something to keep it from resting on the bottom of the larger vessel. Two caseknives may be used, or a baking powder can lid will do. The boiling water should come half way up the side of the smaller vessel.

### 5—AIM OF THIS LESSON

1. To teach value of milk as a human food.
2. To teach the right method of cooking milk.

### 6—RECIPES

#### 1. Blanc Mange

2 tbs corn starch	1 c milk
½ t flavoring—chocolate may be added	2 to 4 tbs sugar

Heat the milk in double boiler. Add sugar and cornstarch, which has been mixed in a little cold milk. Stir, then let cook slowly in a double boiler until done—thirty to forty-five minutes.

#### 2. Junket

¼ rennet tablet—small kind for making desserts flavoring	1 pint of milk 1 tbs sugar
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Dissolve the tablet in 1 tablespoon of water—not hot. Warm the milk to 90° in temperature. Stir in sugar and tablet and flavoring. Pour on dish or dishes to mold. Let stand in a cold place until set firm. Serve with cream and sugar or whipped cream, or chocolate or caramel sauce.

#### 3. Custard

1 c milk	1 egg
flavoring	2 tbs sugar

Method.—Put milk to scald in double boiler. Dissolve sugar in milk. Beat eggs slightly and add to milk when lukewarm, beating constantly until the mixture forms a coating on the spoon. Remove instantly from hot water and flavor. Strain and cool. Should there be signs of curdling, beat briskly with an eggbeater.

#### 4. Cocoa

1 level teaspoon cocoa	¼ c water
1 ts sugar	

Cook the cocoa, sugar and water together, allowing them to boil five minutes, then add ¾ cup of cold milk. Heat until hot, then serve. Do not boil after the milk is added.

## SUGGESTIONS FOR TEACHERS

Materials.—Milk and skimmilk.

What makes milk sour?

Compare clabbered milk with sweet milk.

What part clabbers, the cream or skimmilk?

What must the bacteria act on, the fat or protein, to make milk clabber?

Spelling.

Give new words used in this lesson.

English.—Little Miss Muffit—with her curd and whey.

Arithmetic.—Which is the cheaper, protein food, skimimilk or whole milk, if whole milk is 10 cents a quart and skimmilk 5 cents per quart? What do you pay the extra 5 cents for, protein or fat?