1929

The Value of Milk

Elizabeth Armstrong
Iowa State College

Follow this and additional works at: http://lib.dr.iastate.edu/homemaker

Part of the Home Economics Commons

Recommended Citation
Armstrong, Elizabeth (1929) "The Value of Milk," The Iowa Homemaker: Vol. 9 : No. 6 , Article 6.
Available at: http://lib.dr.iastate.edu/homemaker/vol9/iss6/6

This Article is brought to you for free and open access by the Student Publications at Iowa State University Digital Repository. It has been accepted for inclusion in The Iowa Homemaker by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
The Value of Milk

by Elizabeth Armstrong

"The cow is the foster mother of the human race. From the day of the ancient Hindoo to this time have the thoughts of men turned to this kindly and beneficent creature as one of the chief sustaining forces of human life."—W. D. Hoard.

Milk is increasingly recognized as an important factor in the diet of children and adults. In the past, milk was considered a mere incidental in the diet, desirable if it could be easily and cheaply obtained. Today it is classed as a necessity and old slip-shod methods of caring for the milk are rapidly being supplanted by new, sanitary and scientific methods. A study of the composition of milk certainly bears out the statement that milk is almost a complete food.

The composition of milk:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>87.2%</td>
</tr>
<tr>
<td>Casein</td>
<td>2.9%</td>
</tr>
<tr>
<td>Albumen</td>
<td>0.6%</td>
</tr>
<tr>
<td>Milk sugar</td>
<td>4.9%</td>
</tr>
<tr>
<td>Butter-fat</td>
<td>3.8%</td>
</tr>
<tr>
<td>Ash</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

100.0%

The casein and albumen compose the protein of milk. They contain nitrogen and are essential to building and replacing of body tissue. Milk sugar and fat are the sources of energy. They give us the power to do work and enjoy play. The ash or mineral content consists of calcium, magnesium, potassium, sodium, phosphorus, sulphur and iron. These substances are used by the body to build bone, teeth, blood and tissue, and to aid in carrying on all body processes. The outstanding nutritional deficiency of milk is its low iron content, thus making it necessary to supplement milk with iron-rich foods.

Prior to 1913 vitamins were unheard of, but recent experimentation has shown these complex factors to be necessary for normal animal life. Milk and dairy products are among the richest sources of vitamin A, while D is contained in small but appreciable amounts.

Total deficiency of vitamin A results in an eye disease known as xerophthalmia. Partial deficiency, which is of greater concern in human nutrition, is manifest by loss of weight and a general run down condition, often terminating in an infection of the respiratory tract, the sinuses and the ear. Vitamin A is limited in its distribution in nature and milk is recognized as the best source. When vitamin D is lacking in the diet of children they are apt to be stunted in growth and are often the victims of rickets, a disease portrayed by poor bone development. The chief source of vitamin D is cod liver oil, but it is found in the butter-fat of milk. Both of these vitamins are found in the fat of milk and thus cream and butter will be richer, while skim milk and its products will be relatively poorer. Milk is, in addition, a good source of the pellagra preventative factor, vitamin B, but the amount will vary with the type of feed, the season and the condition of the dairy cow. Likewise, the antiscorbutic content of milk, vitamin C, will vary greatly, but is never high.

By careless handling, milk can become one of man's worst enemies. If we examine milk under the microscope we will find it is full of thousands of microorganisms, called bacteria. Some of these organisms are harmless, even beneficial as the lactic acid bacteria which sour milk and aid in flavoring cheeses. Others are undesirable, they cause putrefaction of milk and still others cause disease among milk consumers. There are two ways to combat these organisms. One is cleanliness and careful handling of milk from the cow to the table, thus keeping the bacterial count down to the minimum. The other is pasteurization. Pasteurization is by far the safest. The milk is heated to 145 degrees F. for thirty minutes and cooled quickly to 50 degrees F. and bottled immediately. This process kills disease bacteria without injuring the milk. There is one caution to be observed if using pasteurized milk, as lactic acid bacteria cause milk to sour before it spoils. If all these bacteria are killed by over-heating the milk, in the process of pasteurization, there is danger of the milk putrefying without warming and causing illness when consumed. But proper pasteurization is the most scientific way we have of securing healthful milk and of combating epidemics caused by milk contaminated with pathogenic bacteria.

The purchase of milk is a good investment. When we purchase milk, we are purchasing health. We are investing in pink cheeks for the baby and vitality for the father and mother. One quart of milk is equivalent in food value to three-fourths of a pound of meat or eight eggs, and contains in addition the invaluable vitamin A. When we are about to make so important a purchase, it is necessary that we should have some idea of what constitutes good value in milk. We have a right to expect our milk to be fresh, clean and rich in food value.

Milk varies in composition with different breeds of cattle. In general, we find that milk which is high in butter-fat has a slightly higher percentage of other nutrients than milk which is low in butter-fat. We can never judge the quality of milk by the color, for color varies with breeds and with the feed of cattle. If, however, milk is a bluish hue, we can be sure it is not rich. Milk is required by law to have 30 percent butter-fat and 11.5 percent total solids.

The greatest aid to the milk purchaser is government regulation regarding the care, sale and composition of milk. It protects the public against unscrupulous milk dealers and against itself. Certified milk is the highest grade from the viewpoint of bacterial count. The milk comes from healthy cows kept in clean surroundings, is drawn and bottled under the supervision of properly trained inspectors.

(Continued on page 7)
model of Breton's "Song of the Lark." Members of the club painted their own background for this "living picture."

"I get up early to tune in on the radio on some of the selections we study in our music memory work," reports Margaret. "I bought my clarinet with 4-H premium money, and I joined the high school band and orchestra. I appreciate music because 4-H work has taught me how."

**Going Visiting**

"I search the newspapers for items telling what other clubs in the state are doing, and then I wish that I might visit one or all of these places," says Dorothy Ridenour, of Delaware County, whose two-year club record represented her county in the state contest.

All of the large family of Iowa, active and college 4-H girls can hardly visit each other, but we can exchange our 4-H plans on this page of the IOWA HOME-MAKER. Your ideas, questions and plans will be welcomed on our page, where we can really "go visiting" in a 4-H way.

---

**The Value of Milk**

(Continued from page 4)

The nutritive composition is known and the date of bottling stamped on the cover. All these things are under the supervision of the Medical Milk Commission and as a result of these precautions, a very low bacterial count, less than 10,000 per cubic centimeter, is one of the important features of certified milk.

There are also various local regulations affecting the milk industry. In Iowa we find a state law specifying that milk which is pasteurized be heated to 145 degree F. for 30 minutes. There is no state law regarding tuberculosis tested milk, but in some of the cities we find ordinances requiring that milk be free from the tuberculosis organism. We also have on the market raw milk or milk which is not certified or pasteurized. Fortunately, the old bulk dip system in which each customer presented his own bottle at the creamery to be filled by the ladle method is past, for this system meant a high degree of contamination, unfair distribution of butter-fat and frequently unfair measure.

When we discuss milk and its value as a food we must not forget that we can get milk in many ways besides out of a glass. We have cheeses in which the protein of milk is coagulated and made into a tasty food. Theoretically, cheese should take the place of meat in the diet and not be eaten as an accessory to apple pie at the end of a heavy dinner. Much of the hard feeling toward cheese, as the cause of indigestion, should be directed toward ourselves, who insist on abusing our stomachs by consuming it at the wrong end of a meal. Milk can be used in cooked dishes, making them richer and increasing the food value. Butter is one of the chief milk products. Often we skim on butter, using substitutes of all kinds, forgetting that through milk and butter we get the valuable vitamin A, which we cannot live without.