

tion, but coagulates by the addition of an acid or with rennet, while albumen coagulates with heat.

Sugar gives to milk its sweet taste. The souring of milk is due to a change of milk sugar into lactic acid, through the action of lactic acid bacteria (small plants).

The ash constituents of milk bear a very close relation to the casein, hence anything which causes a change of the ash, especially the lime compounds, affects the casein. The pasteurization of milk destroys its usefulness for cheesemaking by changing its mineral matter, and rennet will not act properly on the casein unless the milk be treated with a soluble lime-salt, such as calcium chloride.

The yellow color of milk is due to special coloring matter known as lactochrome, which is associated with the milk fat. The character and breed of the cow, as well as the food fed to the cow, affect the color of milk. Tests based on the color of milk are not reliable.

The opacity of milk is due to the fat globules and to the casein. Fat in the form of small globules will retard more light than will the large ones. This fact, together with the fact that the casein is not all in solution, renders optical milk tests of very little use.

The odor of milk is due to a volatile oil, which is more pronounced in some samples than in others.

Gases, composed of air, carbonic acid, ammonia, oxygen, and nitrogen are found in milk, especially soon after milking, hence samples for testing should not be taken within an hour after milking, or the results will be too low.