What Are "Modified Milk Ingredients"?

By Joe Schwarcz — April 28, 2019

If you care for a real exercise in label reading, just take a peek at a standard supermarket ice cream. You would think that the list of ingredients should be pretty short. After all, traditional ice cream is made by mixing together cream, milk, egg yolk and sugar, blending in some vanilla, fruit or chocolate flavoring and freezing the concoction. That’s the stuff that makes or mouths drool and arteries panic. But chances are in addition to this cream or milk, you will see something labeled “modified milk ingredients." What on earth are these?

Milk, of course, is quite a complex mixture of substances. It is mostly water in which the milk sugar lactose is dissolved, and goblets of fat and proteins, the so-called "caseins," are suspended. Milk has a rather limited shelf life, but its components, if separated, can last longer and can be used in a variety of ways. This has given rise to a range of milk-processing industries. The water, for example, can be evaporated, giving rise to dried whole milk. Then there is skim milk, partially skim milk, whey proteins, caseins, butter-oil, anhydrous butter-oil, and skim milk powder. Some of these can be modified to produce cultured milk products or milk protein concentrates.

What's the driving force behind all of this milk-processing production? The economy, obviously. By using specific modified milk ingredients, manufacturers can make cheese or ice cream products more cheaply and with longer shelf life. Unfortunately, the taste usually suffers.

While the use of these modified milk products may be unappealing, they pose no health issue. All of the components were originally present in milk. In some cases, one can even argue for improved health benefits, as in the use of skim milk powder to replace full-fat milk. However, while
there is no health concern, there may be a political one. The amount of fluid milk that can be imported into Canada without a tariff is limited, whereas modified milk ingredients fall under different regulations. It is, therefore, cheaper for manufacturers to make dairy products with imported modified ingredients than with Canadian milk.

However you enjoy your ice cream, here’s to summer and lots of ice cream days!

*The original McGill University OSS post can be found here [1].*