

Custom Fitting Milk And Dairy Products

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The custom fitting of milk and dairy products is not a conscious goal for most dairy farmers, at least not directly. Yet all efforts toward increasing profitability on the dairy farm indirectly take custom fitting into consideration. Custom fitting is simply what the consumer wants to buy, or what the milk producer is able to sell and tries to produce more of. If there is no demand for a certain product from the dairy farm, then there is no point in producing it.

The U.S. Holstein cow is proof that dairy farmers are actually custom fitting to the consumer demands. In the last 30 years, Holstein cow's milk has become the predominant cow's milk in the United States, chosen over Jersey, Guernsey, Ayrshire, Brown Swiss and Milking Shorthorn cow's milk. Holstein milk is naturally low in fat, lower than that of the other breeds.

In recent years, as an incentive for dairy farmers to produce more of that content in milk that consumers preferred, the U.S. dairy industry affixed a price differential or bonus for protein or solids-not-fat or cheese yield content of milk.

The debate about fat and cholesterol in milk has been going on for some time. The consumer, meanwhile, has switched away from whole milk, opting instead for low-fat 2 percent, 1 percent or skim milk. This trend did not come from the farm directly, but was prompted by milk processors offering consumers a choice on the grocery shelf. Even in the processing of milk for cheese, consumer interest in low-fat products has had a considerable influence on newly available cheese varieties.

The situation of American consumers offers an interesting comparison — in the opposite direction — to the nutritional needs of American dairy cows. Many Americans are not working as hard physically as they did 50 to 100 years ago, before the age of the automobile and mechanization. Because they use less energy, they require less fat in their daily diets. American dairy cows, on the other hand, are working harder physically. At 100+ pounds-milk yield per day, cows need much more energy, which is available only in the form of fat.

However, one fat is not equal to another fat. Fat is a general term applied to a big family of different constituents with many different qualities and characteristics. Another name for our food fats is "triglyceride," which explains that fat normally consists of one part glycerol and three parts fatty

acids all hooked together. These fatty acids can be very different, thereby making up different fat qualities in the end.

Fatty acids are so-called "saturated" or "unsaturated" biochemically, which means differences in their actions in our body's digestion, metabolism and health. Fatty acids also have different lengths — short, medium or long — depending on the number of atoms in their molecular chains.

Research has cast unfavorable shadows over the saturated fatty acids, which are present in all fats and oils in varying amounts. Consumers can read the nutrition label on products before picking the one they prefer. It is not that all saturated fatty acids are bad; it is more a matter of how much one eats of them. And not all of these fatty acids are from fat in the diet. The body makes fat from excess sugar and starch.

Unsaturated fatty acids have received positive attention in recent years from research, which biochemically distinguishes between monounsaturated and polyunsaturated fatty acids. It has been determined that while the body needs these unsaturated fatty acids, only a small amount is needed daily, much less than the typical daily intake by Americans.

Also, it has been found that the body needs much less of the polyunsaturated fatty acids than is currently being eaten. Their high level of consumption is actually detrimental to good health.

I went to neighborhood food markets and checked the nutrition labels for contents of all available oils for mono- and polyunsaturated fatty acids. This information is all there in plain English, but does anybody bother to read it? In talking to some of the store managers, I found that few of them seem to know or care about what the differences mean.

Assuming that you take the research message seriously and that you want to custom fit your shopping to buy high monounsaturated fatty acid contents rather than high polyunsaturated fatty acid contents, which oils should you choose?

Here is a table of my label checking:

Unsaturated fatty acids in grams per tablespoon of 14 grams oil

	Mono-	Poly-
Safflower oil	2	11
Corn oil	3	8
Soybean oil	3	8
Walnut oil	2.5	10
Flax (linseed oil)	3	10
Cottonseed oil	4	3
Sesame oil	5	6
Peanut oil	7	4
Canola oil	8	4
Grape seed oil	8	4
Almond oil	9	4
Avocado oil	10	1
Olive oil	10	1.5
Macadamia oil	11	1

As you can see, consumers have a tremendous choice of fats and can determine from product labels what they need for a healthy diet is not difficult.

What about the other characteristic of fats, the chain length of fatty acids, for example? This information is not found on the nutrition labels. Does it matter? When you know what the difference means to your body, you will agree that it matters a lot.

The short- and medium-chain length fatty acids are not digested to form fat in the body like the long-chain fatty acids do. Instead, they are broken down during di-

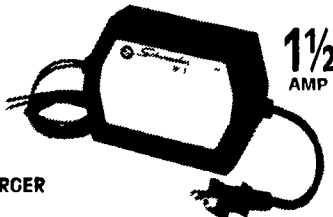
gestion to provide direct energy. Butter contains significant amounts of short- and medium-chain length fatty acids — more than most other fat sources — and thus is a preferred fat source for people who do not want to gain body fat. Short- and medium-weight chain fatty acids also have other well-documented antimicrobial, anti-fungal and anti-tumor properties. They have been used as treatment for digestive malabsorption, unthriftiness of children, to strengthen the immune system and to lower cholesterol contents and deposition in tissues.

New South Dakota research published in the *Journal of Dairy Science*, July 1996, p. 1127-1136 and 1244-1249 shows that by changing the feeding of cows, you can custom-fit the fatty acid composition of milk and butter to suit the needs of the consumers better than before. The experimental cow ration in the South Dakota research contained either soybean oil meal or extruded soybeans or

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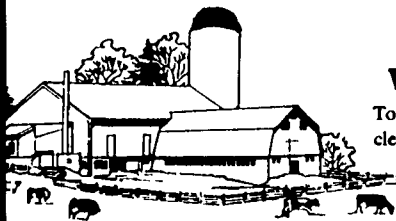
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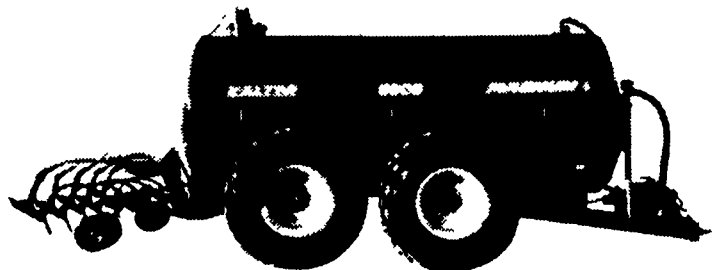
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