

Higher Production Levels Sustained with Added Fat

PRINCETON, N.J. — The battle to get more energy into high-producing dairy cows is heating up as producers ask cows to produce more and more. And as dairy producers recognize the importance of increasing the energy density of their rations, many are turning to fat. Fat contains 2.6 times more net energy than other feedstuffs and is used more efficiently by the cow, reports an Ohio State Professor and researcher.

"Anyone who has higher than average herd production, more than 80 pounds of milk per day for Holsteins, should consider using fat to meet his cows' energy requirements," says Dr. Donald Palmquist, a professor with the department of dairy science at the

Ohio Agricultural Research and Development Center and The Ohio State University.

"The problem with trying to meet high-producing cows' energy requirements with corn is that you end up with too little forage in the ration. It is better to increase content with fat and keep the fiber content high."

Palmquist recommends feeding fat to cows during the first five to 20 weeks of lactation when their energy requirements peak. "This is the period when a cow is pushing up to her genetic potential, and to reach that potential, she has to have adequate energy in her diet."

The maximum feeding level of free fats recommended by Palmquist is three percent of the ration dry matter, perhaps as high as five percent of the ration if

accompanied by good feed management.

The use of fats in dairy cow rations is increasing, according to Palmquist, but he notes that there are some problems with feeding fats. "We generally think of fats as desirable, but at higher levels, they cause problems in the rumen. Our goal is to find which forms of fat cause the fewest problems," Palmquist says.

The fats generally used in dairy rations— whole cottonseed, whole soybeans, tallow, vegetable oil, dried and prilled fats and other commercially-processed fats— vary in the degree of problems they may cause.

"The most prevalent problem is that some fats are toxic to the fiber-digesting microorganisms in the rumen. Unsaturated fats, such

as vegetable oils, are more toxic than saturated fats," Palmquist explains.

"Any free fat has more potential problems than one with some kind of protection that allows it to be released slowly so the rumen microbes can saturate the fat.

"Many of the fats are also extremely hard to handle and to incorporate into feeds," the professor continues. "They're like a stick of margarine and have to be melted and stored in heated tanks. Pellets made with these fats are of low quality and break up easily."

Palmquist's response to these problems is a rumen-inert fat called calcium salts or soaps of fatty acids. "Calcium salts of fatty acids are insoluble at normal rumen pH and do not inhibit the fiber-digesting organisms. These

fats do undergo some changes as they go through the rumen, but fiber digestion is normal."

In addition, calcium salts of fatty acids are dry granules, Palmquist reports, that handle and pellet well.

A calcium salt of fatty acids product developed from Palmquist's research has been marketed in the United Kingdom for several years. The product, MEGALAC™ rumen bypass fat, is currently being test marketed in Ohio and Pennsylvania by Church & Dwight Company, Inc., manufacturers of ARM & HAMMER™ sodium bicarbonate.

"I have high hopes that calcium salts of fatty acids will solve the problems associated with feeding other forms of fat," Palmquist says.

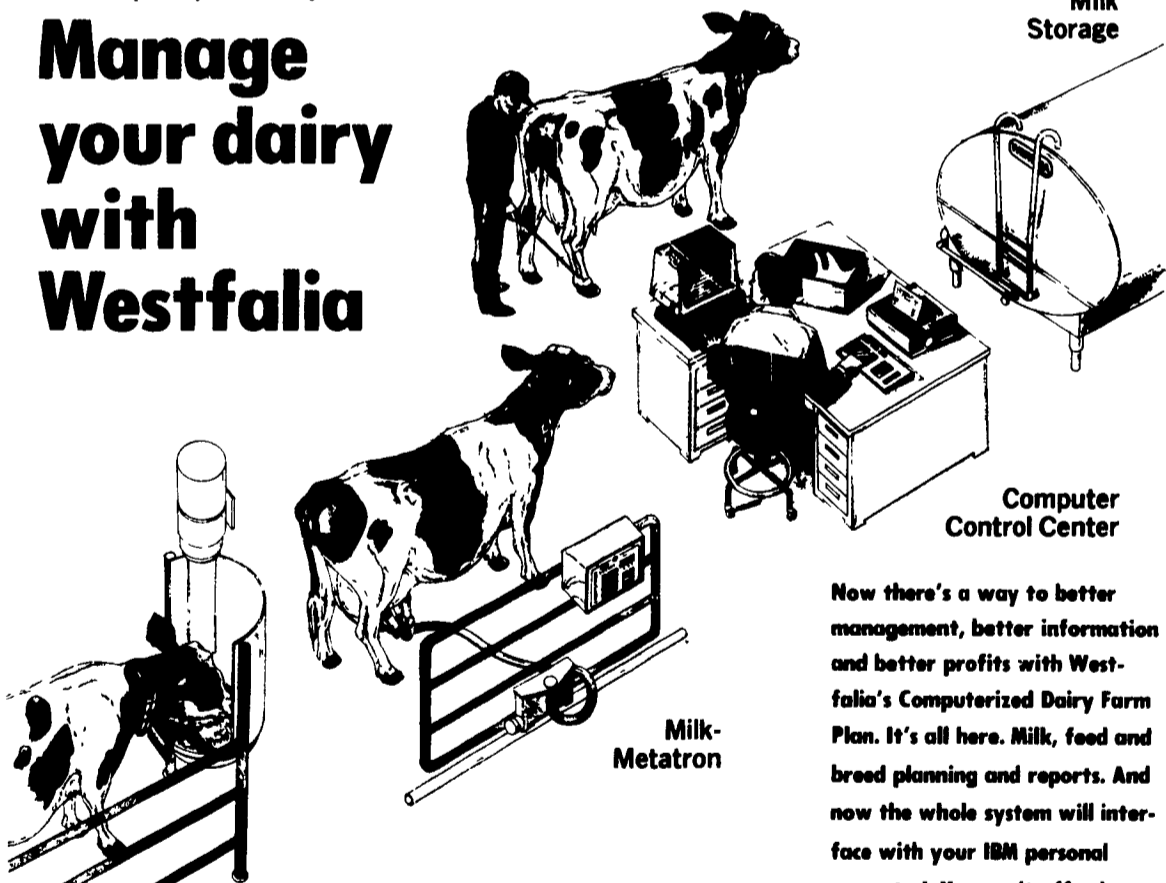
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