

WHAT YOU NEED TO KNOW ABOUT THE FAT IN EXCELLER MEAL®



A message from Dr. Tom Jenkins, Emeritus Professor, Clemson University



HOW MUCH FAT IS IN EXCELLER MEAL®?

Recent results showed about 7.5% ether extract. More important than ether extract is the quantity of total fatty acids that were closer to 6.5%. That means 2 lb. (0.90 kg) Exceller Meal® supplies about 58 g of total fatty acids. To put this in perspective, dairy cows on average are consuming 600 g or more total fatty acids per day with the highest producing dairy cows consuming 30 kg (66 lbs.) dry matter per day containing 4-6 % dietary fat. These cows are consuming >1000 g fatty acids per day!

DOES THE FAT IN EXCELLER MEAL® HELP TO SUPPLY ENERGY FOR MILK?

It sure does. The 58 g total fatty acids supplies 0.34 Mcal NEL for dairy cows, which is enough for an extra 1.1 lb. 4% FCM. (Based on 5.84 Mcal Nel /kg for fat energy and 0.73 Mcal Nel needed per kg of 4% FCM produced according to Dairy NRC).

IS THERE RUMEN UNSATURATED FATTY ACID LOAD (RUFAL) IN THE FAT FROM EXCELLER MEAL®?

Absolutely. Plants make mostly unsaturated fatty acids that make up RUFAL. About 80% of the total fatty acids in Exceller Meal® are RUFAL. That equates to about 24 g RUFAL per lb. Exceller Meal (or 48 g RUFAL for a 2 lb feeding rate).

HOW MUCH RUFAL IS TOO MUCH?

Don't let anyone convince you they know the answer to this question. Too much RUFAL is when the pathways of lipid biohydrogenation in the rumen get messed up and too much trans fatty acids are produced causing a decline in milk de novo fatty acid synthesis and an overall drop in milk yield. The rumen is so complex that we are not yet able to predict the amount of RUFAL that causes this problem. Some producers have low milk fat with 600 g RUFAL while others have great milk fat at 1000 g RUFAL. There are just too many confounding nutrient interactions going on in the rumen directing the pathways of biohydrogenation. Don't give up though. If you have low milk fat, then reducing RUFAL is always a good response. Just don't take away feed ingredients that supply needed nutrients, like high quality protein supplements that have very little RUFAL.

WHAT YOU NEED TO KNOW ABOUT THE FAT IN EXCELLER MEAL® CONTINUED



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Dr. Tom Jenkins (tjnks@clermson.edu), Emeritus Professor, Clemson University and dairy fatty acid expert.

A message from Dr. Daniel Ganesh, Consulting Nutritionist with Bos Nutrition Services, Inc., Guelph, ON.



Despite the reality stated in the answer to Question 4, people are always searching for guidelines. Initial studies from Dr. Tom Jenkins's lab indicated a potential (and not absolute!) risk when RUFAL dietary levels exceeded 3.5%. Many field nutritionists keep an eye on RUFAL amongst several other factors that could impact milk fat, and keep RUFAL below 3% of DM. More recently, the concept of High Risk RUFAL was introduced, and while dependent on various dietary factors, would average around 2- 2.3% of diet dry matter. For dairy cows consuming between 25 to 30 kg DM, this is equivalent to 750 - 900 g RUFAL and 500- 690 g High Risk RUFAL. The 48 g of RUFAL supplied by a 2 lb feeding rate of Exceller Meal is therefore a minor contributor.

Further, RUFAL is the sum of oleic (18:1), linoleic (18:2, an omega-6 fatty acid) and linolenic (18:3, an omega-3 fatty acid). While trans isomers of linoleic have been implicated in milk fat depression, it is important to remember that linoleic and linolenic are essential fatty acids for dairy cows. These fatty acids aid in cow immunity, reproduction, fertility and longevity.

Bottom line: Exceller Meal is a safe, palatable, naturally-produced quality ingredient for dairy cows. It is being fed to thousands and thousands of dairy cows producing high quantities of milk with excellent components.

Dr. Daniel Ganesh, (drdanns@gmail.com) Consulting Nutritionist with Bos Nutrition Services, Inc., Guelph, ON.