



How can a fatty acid analysis help me diagnose milk fat depression problems?

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SMART SOLUTIONS FOR INNOVATIVE DAIRIES



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Rumen Unsaturated FA Load (RUFAL)

18:1 (oleic)
+ 18:2 (linoleic)
+ 18:3 (linolenic)

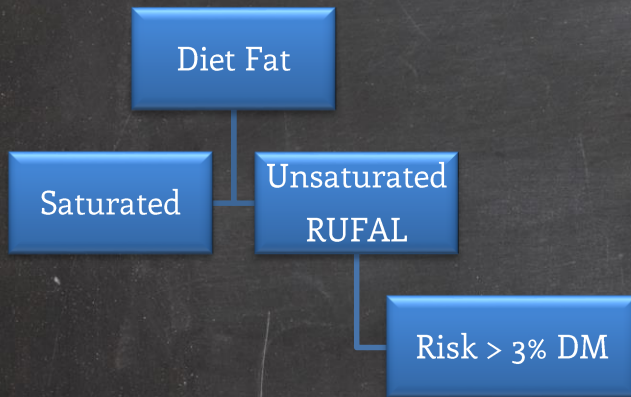
A Way to Account for
The High Risk Fatty Acids



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Fat Risk Factor

Rumen Unsaturated FA Load (RUFAL)



Dry Matter:	54.2%		
Moisture:	45.8%		
		<u>As Sampled %</u>	<u>Dry Matter Basis %</u>
Fat (ether extract)		N/A	N/A
Fat (acid hydrolysis)		N/A	N/A
Total Fatty Acid		3.00	5.54
		<u>Relative Basis %</u>	<u>Dry Matter Sample Basis %</u>
C12:0	Lauric Acid	0.09	0.01
C14:0	Myristic Acid	0.68	0.04
C16:0	Palmitic Acid	23.47	1.30
C16:1	Palmitoleic Acid	0.47	0.03
C18:0	Stearic Acid	2.84	0.16
C18:1	Oleic Acid	25.06	1.39
C18:2	Linoleic Acid	41.90	2.32
C18:3	Linolenic Acid	4.03	0.22
C20:0	Arachidic Acid	0.53	0.03
C20:1	11-Eicosenoic Acid	0.16	0.01
C20:2	11-14 Eicosadienoic Acid	N/D	N/D
C22:0	Behenic Acid	0.38	0.02
C22:1	Erucic Acid	N/D	N/D
C24:0	Lignoceric Acid	0.42	0.02
C24:1	Nervonic Acid	N/D	N/D
Total		100.0	5.54

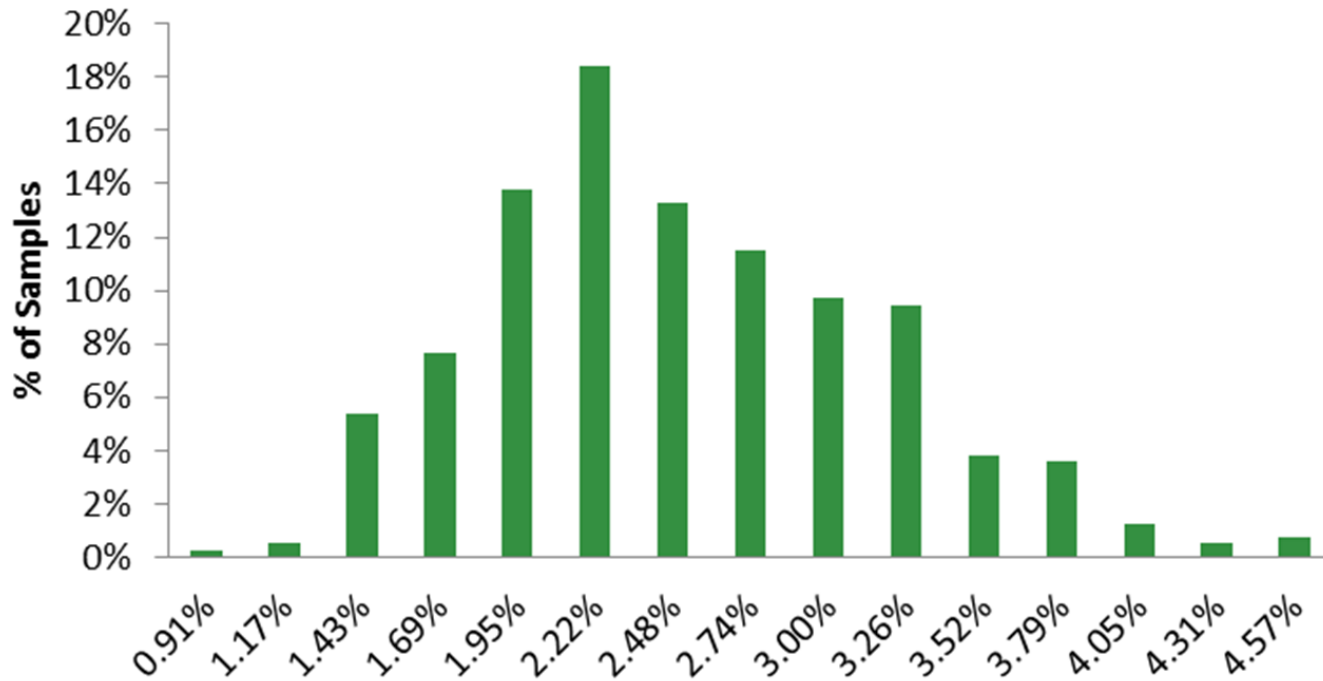


3.9



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18:1 + 18:2 + 18:3 Fatty Acid % DM



Courtesy of Kyle Taysom
Business Development Manager
Dairyland Laboratories, Inc. n=397



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Reasons Why RUFAL > 3 % Might Not Correlate Well with MFD

Why antimicrobial effects decrease

Reduced rate of lipolysis

Only FFA shift microbes

Increased rate of biohydrogenation

Only unsaturated FA have antimicrobial effects

Ca salt formation

Ca salts have little to no antimicrobial effects

Binding to feed particles

RUFAL must bind to microbial cell for antimicrobial effects

Direct uptake by microbial cell

Shields from binding to bacterial membranes



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