



DIGESTIBILITY OF FATS IN DAIRY COWS
**How Much Emphasis Should
Be Put on Digestibility When
Evaluating Fat Sources?**

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DIGESTIBILITY OF FATS IN DAIRY COWS

How Much Emphasis Should Be Put on Digestibility When Evaluating Fat Sources?

Importance

- Affects lipid energy available for a production response
- Affects the delivery of specific fatty acids to tissues
 - Milk fatty acid composition
 - Reproductive performance
 - Immune function and disease resistance
- Affects the expected performance and profitability of a commercial fat product



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5% Unit Changes in Int. Dig. Tallow

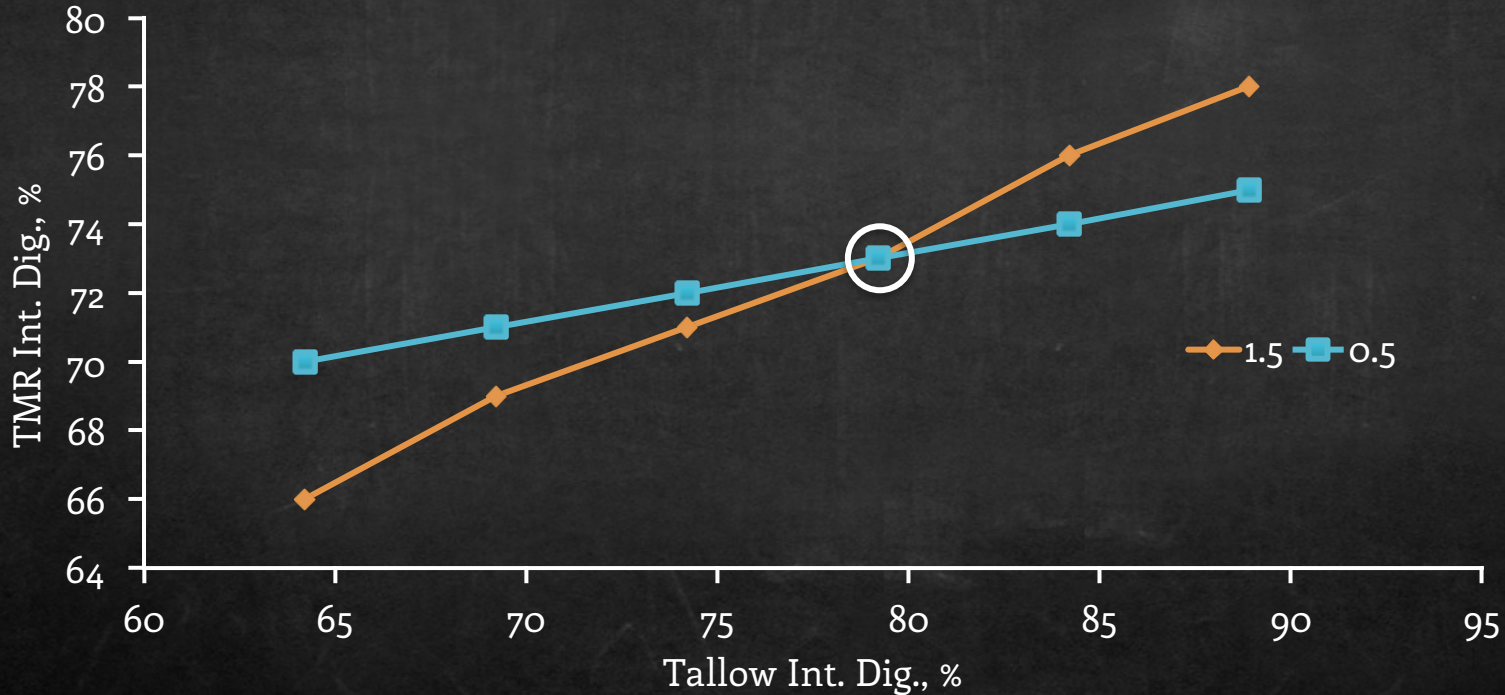
FA	FA % Total	CPM	Int. Dig. %	
			Low (-15)	Hi (+10)
12:0	0.09	95.4	80.4	105.4
14:0	3	75.1	60.1	85.1
16:0	24.43	72.5	57.5	82.5
16:1	3.79	64	49	65
18:0	17.92	72.8	57.8	82.9
18:1t	3.99	78.6	63.6	88.6
18:1	41.62	89.3	74.3	99.3
18:2	1.09	83	68	93
18:3	0.53	77.6	62.6	87.6
Other	3.54	58.2	43.2	68.2
		79.2	64.2	88.9



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Int. Dig. Tallow vs. TMR

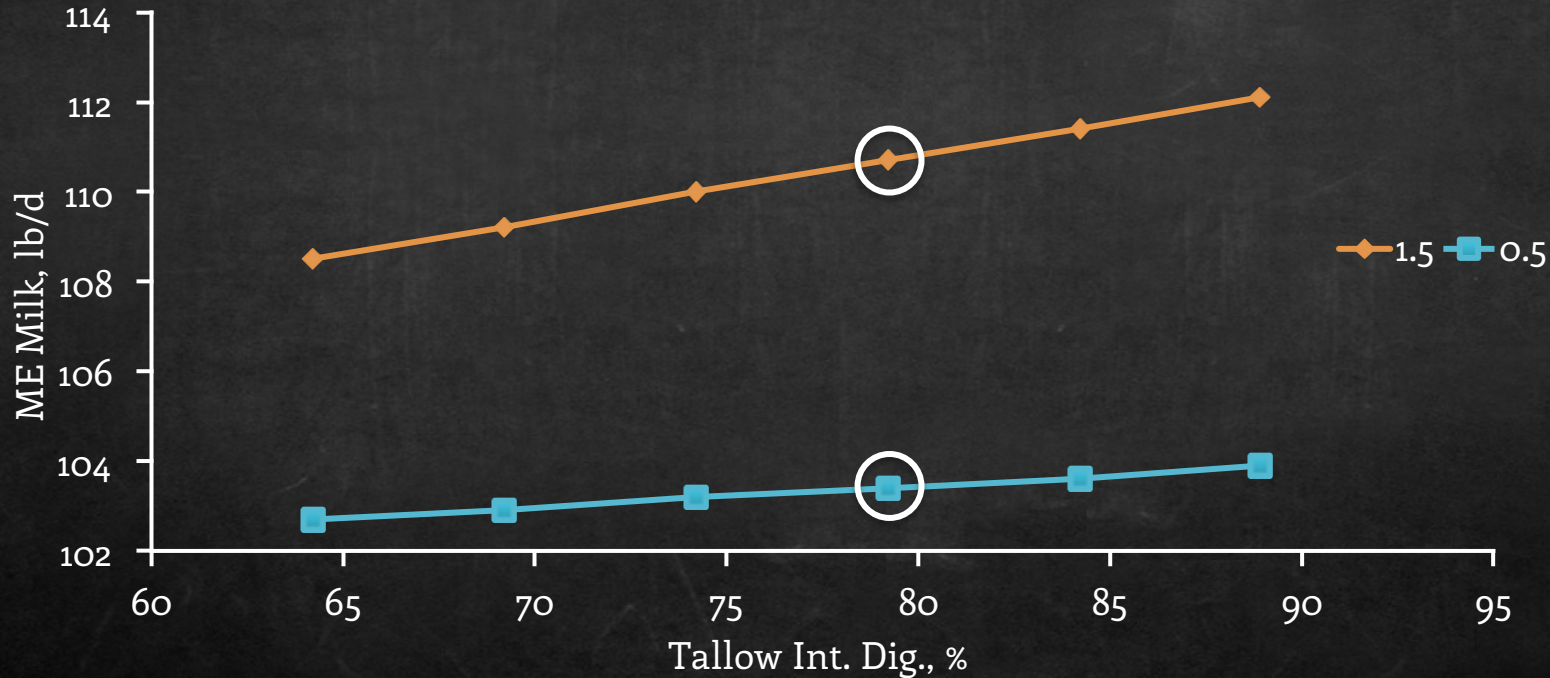




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Int. Dig. Tallow vs. ME Milk

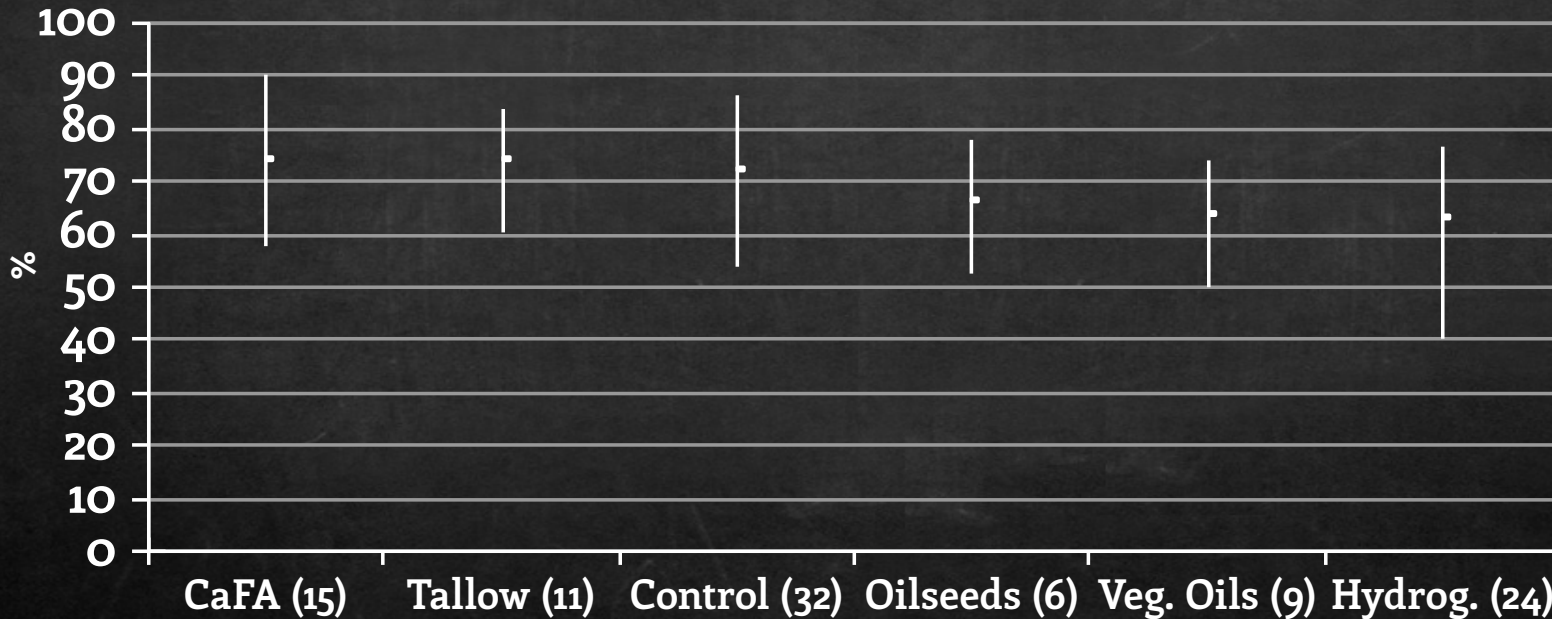




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Apparent Fatty Acid Digestibilities of Total Diets Supplemented with Added Fat





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Fat Effects on DE Consumed

DMI, lb/day	Con
Basal	55.0
Fat	
Total	55.0
DE, % of GE	
Basal	67.5
Fat	82.3
DE, Mcal/day	
	77.3



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Fat Effects on DE Consumed

DMI, lb/day	Con	3% Fat
Basal	55.0	53.3
Fat		1.7
Total	55.0	55.0
DE, % of GE		
Basal	67.5	67.5
Fat	82.3	82.3
DE, Mcal/day		
	77.3	80.4



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Fat Effects on DE Consumed

DMI, lb/day	Con	3% Fat	Depression
			Intake
Basal	55.0	53.3	51.4
Fat		1.7	1.6
Total	55.0	55.0	53.0
DE, % of GE			
Basal	67.5	67.5	67.5
Fat	82.3	82.3	82.3
DE, Mcal/day			
	77.3	80.4	77.3



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Fat Effects on DE Consumed

DMI, lb/day	Con	3% Fat	Depression	
			Intake	Basal DE
Basal	55.0	53.3	51.4	53.3
Fat		1.7	1.6	1.7
Total	55.0	55.0	53.0	55.0
DE, % of GE				
Basal	67.5	67.5	67.5	64.6
Fat	82.3	82.3	82.3	82.3
DE, Mcal/day				
	77.3	80.4	77.3	77.3



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Fat Effects on DE Consumed

DMI, lb/day	Con	3% Fat	Depression		
			Intake	Basal DE	Fat DE
Basal	55.0	53.3	51.4	53.3	53.3
Fat		1.7	1.6	1.7	1.7
Total	55.0	55.0	53.0	55.0	55.0
DE, % of GE					
Basal	67.5	67.5	67.5	64.6	67.5
Fat	82.3	82.3	82.3	82.3	34.9
DE, Mcal/day					
	77.3	80.4	77.3	77.3	77.3



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Important Points

- Users can't change numbers
 - ❑ FAD too costly and difficult to determine
- FAD values continually scrutinized
 - ❑ Actual observations of true FAD (cannulated cows) will grow very slowly
 - ❑ Re-analysis of same data set depending on what data are included and statistical analysis
- Important to users – fat value and animal responses depend on FAD



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