

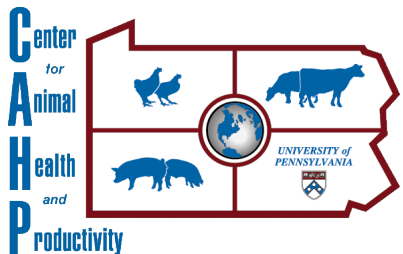
Evaluating A Ration for Transition Cow Using UPenn Dairy Ration Analyzer

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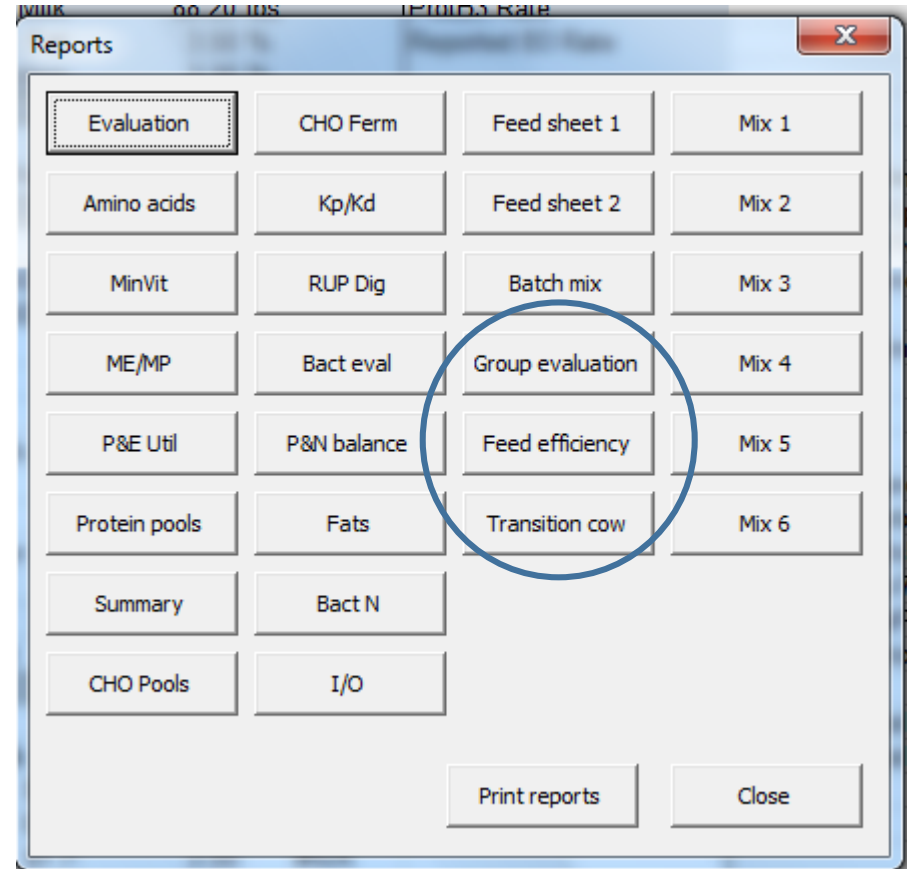


UPenn Dairy Ration Analyzer
University of Pennsylvania



Overview

- Ration has been formulated
- You can evaluate
 - Group performance
 - Shaker box suggestion
 - If dry cow – risk of MF



Dry Cow Diet

- Formulate your diet for close-up dry cows
- Check Transition Cow Report

Breed: 1 Enter Breed **Holstein** J. Dairy Sci. 89:669-684
 Body Weight 1334.03 lbs Hypocalcemia in Dairy Cows: Meta-analysis and Dietary Cation Anion Difference Theory Revisited
 Lactation Number 2 I. J. Lean,*1 P. J. DeGaris,* D. M. McNeil,† and E. Block‡
 LT 1 = -5.76 + 5.48 (Ca) - 5.05 (Mg) + 1.85 (P) + 0.02 + (DCAD 1) - 2.03 (Ca2) + 0.03 (Exposure)
 LT 2 = -5.17 + 5.74 (Ca) - 8.66 (Mg) + 2.30 (P) + 0.78*(K) - 3.48 (S) - 2.16 (Ca2) + 0.04 (Exposure)

Current Diet	Equation One	Equation Two	What If	Equation One	Equation Two	What If	Equation One	Equation Two
days	14	14	days	14	14	days	14	14
	% incidence	% incidence		% incidence	% incidence		% incidence	% incidence
MILK Fever	0.74233	0.36827	MILK Fever	0.68103	0.28144	MILK Fever	0.46305	0.2528
input diet from formulation			Reference Diet Low CA			Reference Diet Low DCAD		
	LT1	LT2		LT1	LT2		LT1	LT2
intercept	-5.76	-5.17	intercept	-5.76	-5.17	intercept	-5.76	-5.17
Ca	5.48	5.74	Ca	5.48	5.74	Ca	5.48	5.74
Mg	-5.05	-8.66	Mg	-5.05	-8.66	Mg	-5.05	-8.66
P	1.85	2.3	P	1.85	2.3	P	1.85	2.3
K		0.78	K		0.78	K		0.78
S		-3.48	S		-3.48	S		-3.48
DCAD 1	0.02		DCAD 1	0.02		DCAD 1	0.02	
cA^2	-2.03	-2.16	cA^2	-2.03	-2.16	cA^2	-2.03	-2.16
Exposure	0.03	0.04	Exposure	0.03	0.04	Exposure	0.03	0.04
Breed	0.86	0.66	Breed	0.86	0.66	Breed	0.86	0.66

Diet One			Diet Two			Diet Two		
Calcium (%)	0.47978	0.47978	Calcium (%)	0.35	0.35	Calcium (%)	0.47978	0.47978
Phosphorus (%)	0.28692	0.28692	Phosphorus (%)	0.28	0.28	Phosphorus (%)	0.28692	0.28692
Magnesium (%)	0.50212	0.50212	Magnesium (%)	0.45	0.45	Magnesium (%)	0.50212	0.50212
Potassium (%)	1.4838	1.4838	Potassium (%)	1.3	1.3	Potassium (%)	1	1
Sulfur (%)	0.20575	0.20575	Sulfur (%)	0.22	0.22	Sulfur (%)	0.20575	0.20575
Sodium (%)	0.3009	0.3009	Sodium (%)	0.35	0.35	Sodium (%)	0.3009	0.3009
Chlorine (%)	0.84647	0.84647	Chlorine (%)	0.45	0.45	Chlorine (%)	1.25	1.25
DCAD1 (meq/100g)	14.368	14.368	DCAD1 (meq/100g)	22.1347	22.1347	DCAD1 (meq/100g)	-9.37064	-9.37064
DCAD1 (meq/100g)	Na + K - S - CL			Na + K - S - CL			Na + K - S - CL	
	MW	Meq		MW	Meq		MW	Meq
Na	23	13.08280501	Na	23	15.2174	Na	23	13.0828
K	39	38.04623369	K	39	33.3333	K	39	25.641
S	32.065	12.83354062	S	32.065	13.7221	S	32.065	12.8335
Cl	35.45	23.87785788	Cl	35.45	12.6939	Cl	35.45	35.2609
	DCAD 1	14.41764021		DCAD 1	22.1347		DCAD 1	-9.37064

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 Body Weight 1334.03 lbs
 Lactation Number 2

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Current Diet	Equation One	Equation Two	What If	Equation One	Equation Two	What If	Equation One	Equation Two
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	LT1	LT2		LT1	LT2		LT1	LT2
intercept	-5.76	-5.17	intercept	-5.76	-5.17	intercept	-5.76	-5.17
Ca	5.48	5.74	Ca	5.48	5.74	Ca	5.48	5.74
Mg	-5.05	-8.66	Mg	-5.05	-8.66	Mg	-5.05	-8.66
P	1.85	2.3	P	1.85	2.3	P	1.85	2.3
K		0.78	K		0.78	K		0.78
S		-3.48	S		-3.48	S		-3.48
DCAD 1	0.02		DCAD 1	0.02		DCAD 1	0.02	
cA^2	-2.03	-2.16	cA^2	-2.03	-2.16	cA^2	-2.03	-2.16
Exposure	0.03	0.04	Exposure	0.03	0.04	Exposure	0.03	0.04
Breed	0.86	0.66	Breed	0.86	0.66	Breed	0.86	0.66

Diet One			Diet Two			Diet Two		
Calcium (%)	0.47978	0.47978	Calcium (%)	0.35	0.35	Calcium (%)	0.47978	0.47978
Phosphorus (%)	0.28692	0.28692	Phosphorus (%)	0.28	0.28	Phosphorus (%)	0.28692	0.28692
Magnesium (%)	0.50212	0.50212	Magnesium (%)	0.45	0.45	Magnesium (%)	0.50212	0.50212
Potassium (%)	1.4838	1.4838	Potassium (%)	1.3	1.3	Potassium (%)	1	1
Sulfur (%)	0.20575	0.20575	Sulfur (%)	0.22	0.22	Sulfur (%)	0.20575	0.20575
Sodium (%)	0.3009	0.3009	Sodium (%)	0.35	0.35	Sodium (%)	0.3009	0.3009
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K	39	38.04623369	K	39	33.3333	K	39	25.641
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	DCAD 1	14.41764021		DCAD 1	22.1347		DCAD 1	-9.37064

Breed:	1	Enter Breed	Holstein
Body Weight	1334.03	lbs	
Lactation Number	2		

Current Diet	Equation One	Equation Two
days	14	14
	% incidence	% incidence
MILK Fever	0.74233	0.36827

input diet from formulation		
	LT1	LT2
intercept	-5.76	-5.17
Ca	5.48	5.74
Mg	-5.05	-8.66
P	1.85	2.3
K		0.78
S		-3.48
DCAD 1	0.02	
cA^2	-2.03	-2.16
Exposure	0.03	0.04
Breed	0.86	0.66

Diet One		
Calcium (%)	0.47978	0.47978
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K	39	38.04623369
S	32.065	12.83354062
Cl	35.45	23.87785788
	DCAD 1	14.41764021

Identify Breed
Lactation number

Days on diet – 14 for most close-up group
Predicted incidence MF in cows>parity one

Ian Lean's two models for MF incidence

Minerals in dry cow diet
And DCAD calculation

Breed:	1	Enter Breed	Holstein	J. Dairy Sci. 89:669-684
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MILK Fever	0.74233		0.36827		MILK Fever	0.68103		0.28144	
input diet from formulation	LT1		LT2		Reference Diet Low CA	LT1		LT2	
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Ca	5.48		5.74		Ca	5.48		5.74	
Mg	-5.05		-8.66		Mg	-5.05		-8.66	
P	1.85		2.3		P	1.85		2.3	
K			0.78		K			0.78	
S			-3.48		S			-3.48	
DCAD 1	0.02				DCAD 1	0.02			
cA^2	-2.03		-2.16		cA^2	-2.03		-2.16	
Exposure	0.03		0.04		Exposure	0.03		0.04	
Breed	0.86		0.66		Breed	0.86		0.66	
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Cl	35.45	23.87785788			Cl	35.45	12.6939		
	DCAD 1	14.41764021				DCAD 1	22.1347		

Middle minerals can be changed to
Examine various scenarios

As can the column to the right of this
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Transition Cow Sheet

- Milk Fever predicted incidence should be <1%
- Use 14 days for most herds for close-up dry cows
 - But if all dry cows are fed the close-up diet then increase the days on diet
- Model One uses Ca, P, Mg, CaxCa and DCAD
- Model Two uses Ca, P, Mg, K, S, and CaxCA