Feed Grainv2.0 Evaluation System

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Sample No# | Lab No#

Sample Description

1.00 For use with the feed grains listed below.

Ground Dry Corn	x	High Moisture Shelled Corn	
High Moisture Ear Corn		Snaplage	
Whole Corn (Unprocessed)			

Input categories are shown in red. Output values are shown blue

1.00

Item	Abbreviation	Unit	Result	Method [1]	
Input					
Dry Matter	DM	% as fed	85.0	WC	
Mean Particle Size (*Examples below)	MPS	microns	750	ASAE	
Starch		% of DM	70.5	NIR	
Crude Protein	CP	% of DM	9.1	NIR	
NH_3-N (**Examples below)		% of CP	0.0	NIR	
Prolamin Protein (***Examples below)		% of DM	4.0	WC	Unferment
Neutral Detergent Fiber	aNDF	% of DM	9.0	NIR	
Fat		% of DM	3.6	NIR	
Ash		% of DM	1.4	NIR	
Output					
Moisture		% as fed	15.0	C	
Effective Mean Particle Size [2]	eMPS	microns	765	C	
Starch Fermentation Rate (As Fed) [3]	kd	% /hour	17.2	C	
Ruminal Starch Digestibility	RSD	% of starch	50.8	C	Average
Starch Digestibility (Total Tract)	TTSD	% of starch	93.5	C	Average
Non Fiber Carbohydrate	NFC	% of DM	77.6	C	
Nonstarch NFC		% of DM	7.1	C	
Total Digestible Nutrients, 1X	TDN	% of DM	87.3	C	
Net Energy Lactation, 3X	NE_L	Mcals/lb	0.89	C	
Net Energy Maintenance	NE_M	Mcals/lb	0.96	C	
Net Energy Gain	NE_G	Mcals/lb	0.65	C	
Metabolizable Energy, 3X	ME	Mcals/lb	1.39	C	
Relative Grain Quality	RGQ		153	C	Average

[1] ASAE= American Society of Ag Engineers, WC= wet chemistry, NIR= near infrared reflectance spectroscopy, C=calculated.
[2] The starch within particles effectively ferments at this comparative mean particle size.
[3] Estimated ruminal starch fermentation rate of the grain in its orginal form as fed to dairy cattle. Translated from in vitro gas production rates of undried, unground dry and high moisture corns to ruminal passage rates of 15.0 and 12.0 %/h for unfermented and fermented corns, respectively.

* Example MPS (microns) values. Actual laboratory MPS values should be used.

Feed Grain	MPS, microns
Dry Corn Fine Grind	<750
Dry Corn Medium Grind	750-1000
Dry Corn Coarse Grind	>1000
Dry Corn Rolled	>1500
Dry Corn Whole	>4000
HMC Fine Grind	<1000
HMC Coarse Grind	1000-2500
HMC Rolled	1000-2500
HMC Coarse Rolled	>2500
HMC Whole	>4000
Snaplage	750-2000

** Example NH_3-N (% of total N) values. Actual laboratory values should be used.

Feed Grain	NH_3-N, % of total N)
Dry Corn	0.0
Fresh Corn	0.0
Acid Treated Corn (Full Rate)	<0.50
HMC, Snaplage (<2 weeks Post Ensiling)	<0.50
HMC, Snaplage (Poor/Short Fermentation)	1.0
HMC, Snaplage (Moderate Fermentation)	3.0
HMC, Snaplage (Intense/Long Fermentation)	6.0
Snaplage-Wet (Intense Fermentation)	7.0

*** Example prolamin (% of DM) values. Actual laboratory values should be used.

Feed Grain	Prolamin, % of DM
Highly Vitreous Corn/Flint Corn	> 4.5
Normal Corn	4.0
Nitrogen Deficient Corn	<3.5
Potentially Floury or Opaque Corns	<2.8

****Comparative Starch Fermentation Rates (Your Sample)

	Ruminal Passage Rate, %/h				
	6.0	9.0	12.0	15.0	18.0
kd %/h	6.2	9.3	12.4	15.5	18.6