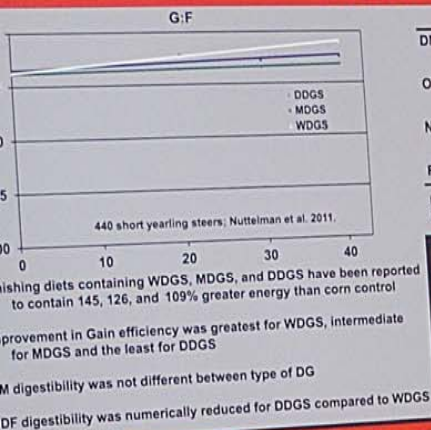


Comparing Wet and Dry Distillers Grains Plus Solubles in Finishing Cattle Diets

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Introduction



	CON	WDGS	MDGS	DDGS	P-Value
DM Digestibility, %	78.6	76.6	74.6	73.4	0.39
OM Digestibility, %	80.2	78.8	76.5	74.9	0.35
NDF Digestibility, %	51.8	64.8	57.4	54.7	0.17
Fat Digestibility, %	87.2	88.2	89.7	86.0	0.53

Nutrient Metabolism Comparison with 6 ruminally cannulated steers.
Nuttelman et al., 2011.

Objective

Evaluate the effect s of drying on the energy value and nutrient metabolism of distillers grains (DG) in cattle finishing diets

Feedlot Experiment 1

Measure the response difference between DDGS and WDGS in long yearlings

171 yearling steers (800 ± 66 lb)
• 3 TRT, 7 reps/TRT
• 21 pens (8 or 9 steers/pen)
• 148 DOF

Diets:

1. Corn based control (CON)
2. WDGS at 35% (DM; WDGS)
3. DDGS at 35% (DM; DDGS)

- WDGS and DDGS:
i. replaced 1:1 DRC:HMC blend
ii. Purchased from same plant prior to trial initiation

5% Supp and 7.5% Grass hay

Feedlot Experiment 2

Hypothesis: Drying solubles onto DG reduces feeding value in feedlot diets

6 types of feed (one plant)

- WDGS (34.5% DM)
- DDGS (89.4% DM)
- DDG (90.1% DM)
- Wet Solubles (33.4% DM)
- MDGS
- Solubles added post dryer (42.1% DM)
- Solubles added prior dryer (53.3% DM)

420 steer calves (627 ± 46 lb)

- 42 pens (10 steers/pen)
- 7 Treatments, 6 reps
- 167 DOF

DG replaced corn (35%)

Solubles mixed with DDG at feeding time

Digestion Experiment

Increase number of observations measure digestion characteristics between WDGS and DDGS

3 Period Crossover Design

- 12 steers (1156 ± 75 lb)
- 3 diets (21 d periods)
- 16 d adaptation / 5 d collection

Measurements:

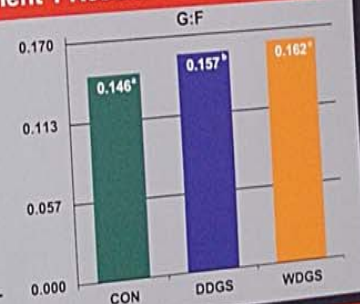
- Total fecal collection
- Feces collected from rubber mats
- Weighed and subsampled daily

Treatments:

- DRC based control (CON)
- WDGS (40% DM inclusion)
- DDGS (40% DM inclusion)

Feedlot Experiment 1 Results

	CON	DDGS	WDGS	SEM
Performance				
Initial BW, lb ¹	1424 ^a	1488 ^b	1497 ^b	10.0
ADG, lb	4.15 ^a	4.58 ^b	4.65 ^b	0.07
DMI, lb/d	28.5	29.2	28.8	0.4
F/G	6.85 ^a	6.37 ^b	6.17 ^c	0.002
Carcass Characteristics				
HCW, lb	897 ^a	943 ^b	937 ^b	6.0
Marbling Score ²	608	611	618	12.0
12 th rib fat, in	0.55	0.58	0.60	0.02
LM area, in ²	13.0	13.1	13.2	0.4



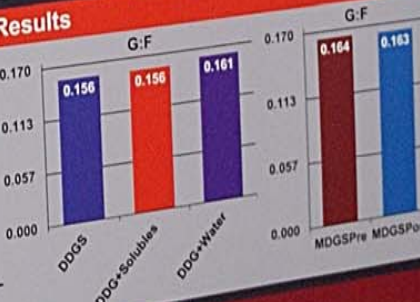
Digestion Experiment Results

	CON	DDGS	WDGS	SEM
DM Intake, lb/d	25.1	26.4	24.9	1.0
Digestibility, %	76.8	68.4	72.1	1.7
OM Intake, lb/d	22.1	22.7	22.8	0.8
Digestibility, %	76.2	67.3	73.0	1.7
NDF Intake, lb/d	3.8	6.2	6.0	0.2
Digestibility, %	64.3	58.4	62.0	2.6



Feedlot Experiment 2 Results

Item	CON	WDGS	DDGS	DDGS+Solubles	DDGS+Water	SEM
Performance						
Final BW, lb ¹	1268	1370	1346	1356	1372	11.0
ADG, lb	3.09 ^a	3.63 ^b	3.51 ^b	3.58 ^b	3.64 ^b	0.06
DMI, lb/d	20.4 ^a	21.8 ^b	22.5 ^b	22.4 ^b	22.4 ^b	0.4
F/G	6.61 ^a	6.01 ^d	6.40 ^{ab}	6.22 ^{bc}	6.13 ^{cd}	0.01
Carcass Characteristics						
HCW, lb	799 ^a	863 ^b	848 ^b	856 ^b	863 ^b	7
Marbling Score ²	509	539	545	539	529	13
12 th rib fat, in	0.43 ^a	0.58 ^b	0.56 ^b	0.55 ^b	0.55 ^b	0.04
LM area, in ²	12.7	13.0	12.9	12.8	13.0	1.2



Summary

- Diets containing WDGS or DDGS had greater energy than CON, respectively
- Drying WDGS reduced the feed efficiency
- Diets containing DG had greater energy than CON, respectively
- Drying solubles onto the distillers grains reduced the feeding value of DDGS or DDGS+Solubles
- NDF digestibility was numerically reduced in the Digestion Experiment.