Impacts of Added Fat
Distillers Grains vs. EnerGII

Impacts of dietary fat level and saturation when feeding distillers grains to high producing dairy cows.

Authors:
J. M. Havlin[1], P. H. Robinson[1], and K. Karges[2]

1 Department of Animal Science, University of California, Davis, CA, USA, and
2 POET Nutrition, Inc., Sioux Falls, SD, USA

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Makers of EnerGII® CALCIUM SALTS OF FATTY ACIDS

Distillers Grains vs. EnerGII

THE OBJECTIVE

This experiment was conducted to determine whether increasing the net energy (NEL) of a total mixed ration (TMR) with mainly unprotected, unsaturated fat from corn distillers dried grains with solubles (DDGS) vs. rumen inert (RI) fat has similar impacts on animal performance.

*J. M. Havlin, P.H. Robinson, et. al., University of California-Davis

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STUDY DESIGN

- N= 1140 lactating cows
- 3 treatments with 380 early lactation, multiparous cows/treatment
- Incomplete Youden Square Design
  - Four 28-day periods & followed cows through entire lactation
  - Total experiment = 16 weeks
- Dakota Gold was used as the high protein/low fat distillers source.
- Average intake of EnerGII was .8 lb/d (same as average intake of fatty acids from typical distillers treatment).
- Typical distillers = 12% fat; Low fat (high protein) distillers = 5% fat

Distillers Grains vs. EnerGII

THE TREATMENTS

CONTROL

5.8 lb. Low Fat/
High Protein DDG

TYPICAL DDGS

6.6 lb. Typical DDGS
(12% fat)

ENERGII + LOWFAT DDGS

.8 lb. EnerGII
5.8 lb. Low Fat / High Protein DDG

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THE RESULTS

- ✓ Milk Production
- ✓ Milk Fat Test
- ✓ Fat Corrected Milk
- ✓ Dry Matter Intake
- ✓ Body Condition Score
- ✓ Feed Efficiency
- ✓ Fatty Acid Digestibility
- ✓ Income Over Feed Cost

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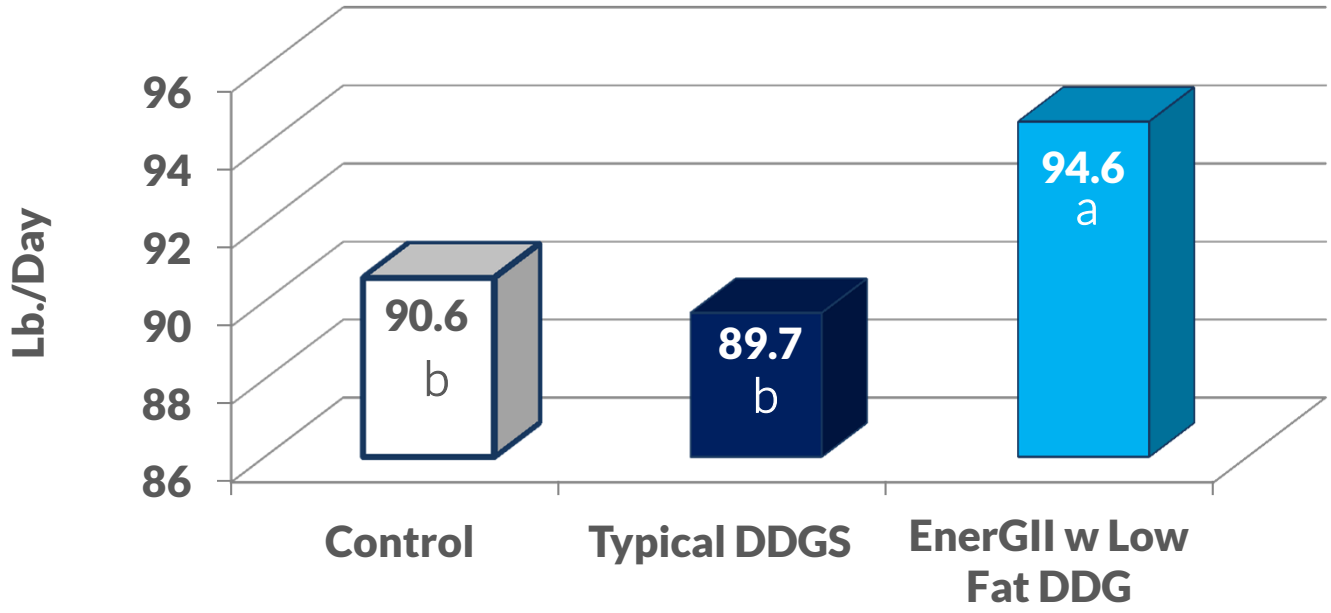
THE RESULTS: Milk/Cow

a,b P< .01



+4 lb EnerGII vs. Control

+4.9 lb EnerGII vs. Typical Distillers

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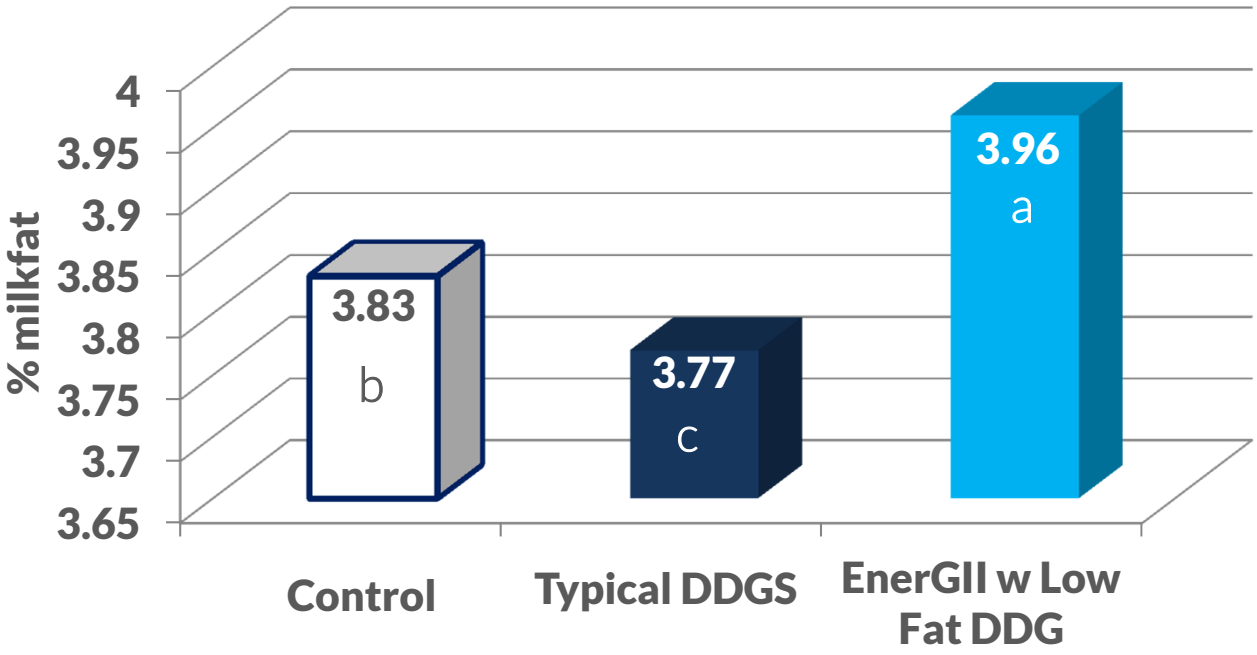
THE RESULTS: Milkfat %

a,b,c P< .01



+.13% EnerGII vs. Control

+.19% EnerGII vs. Typical Distillers

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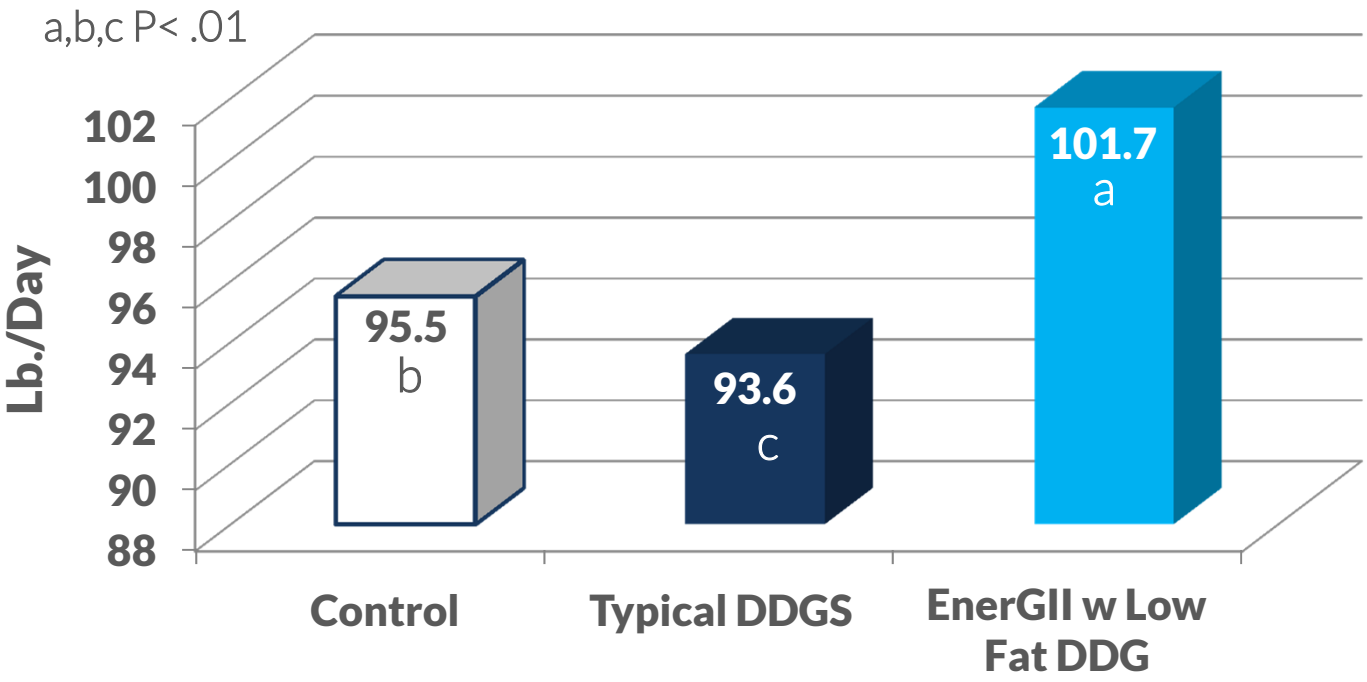
THE RESULTS: 3.5% FCM



+6.2 lb EnerGII vs. Control

+8.1 lb EnerGII vs. Typical Distillers

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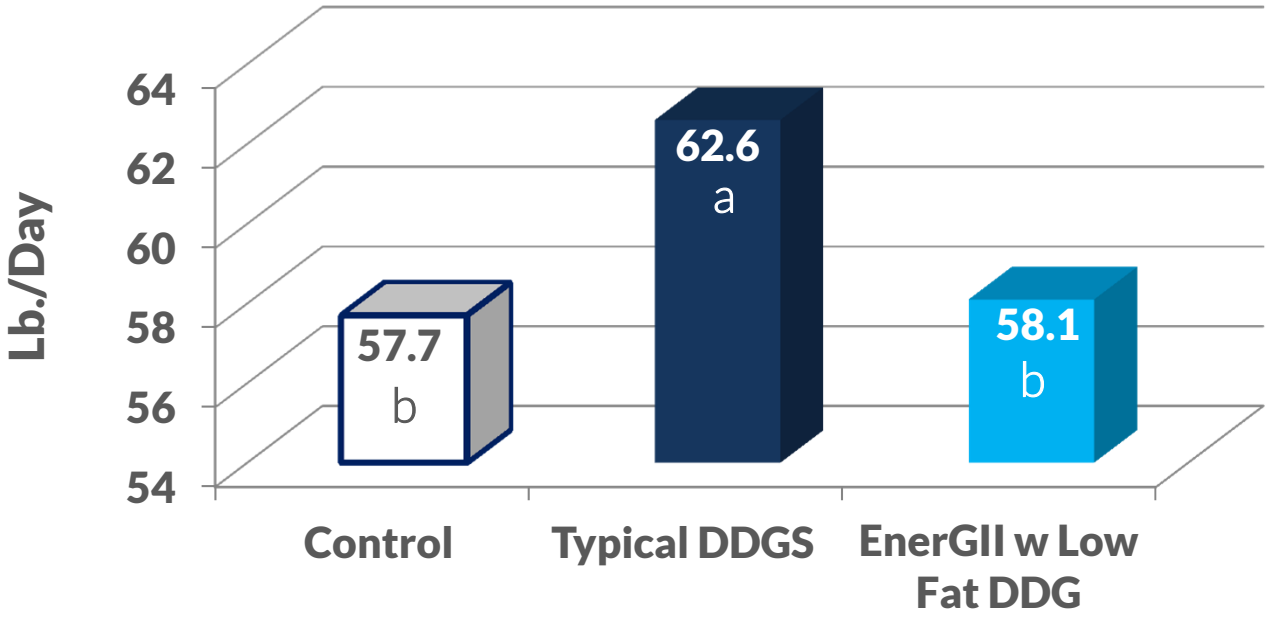
THE RESULTS: Dry Matter Intake

a,b P< .01



+0.4 lb EnerGII vs. Control

-4.5 lb EnerGII vs. Typical Distillers

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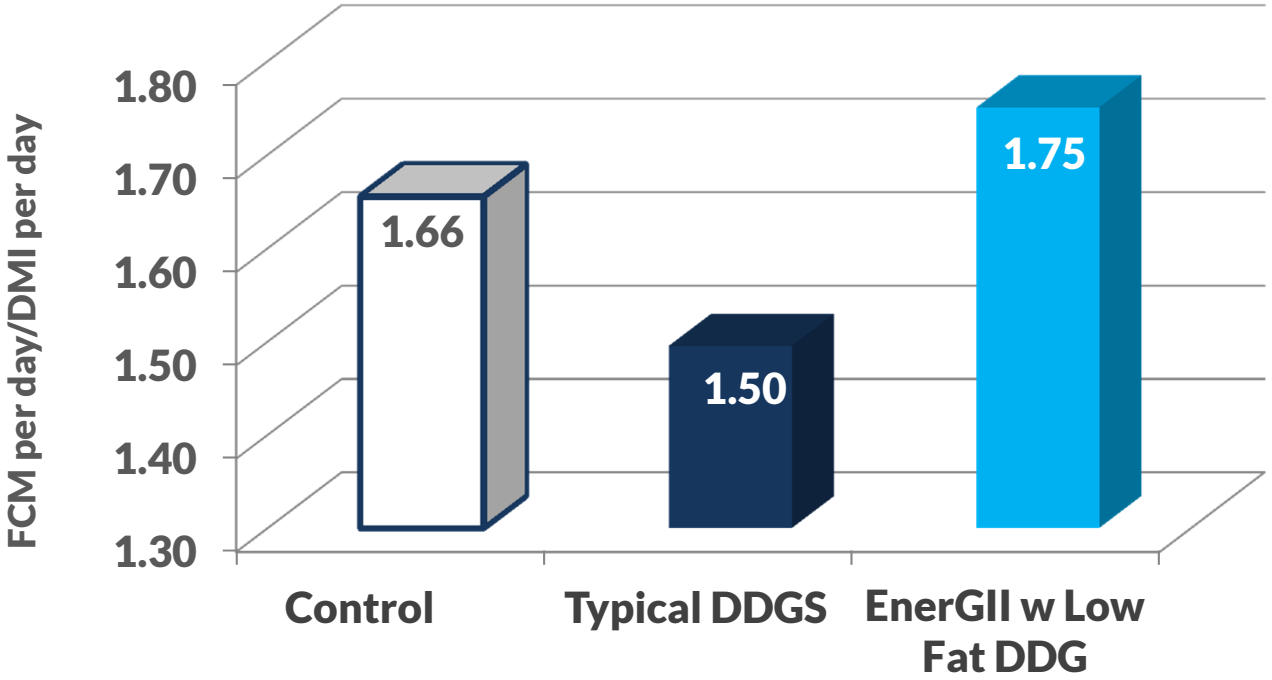
Distillers Grains vs. EnerGII

THE RESULTS: Feed Efficiency



+.09 EnerGII vs. Control

+.25 EnerGII vs. Typical Distillers

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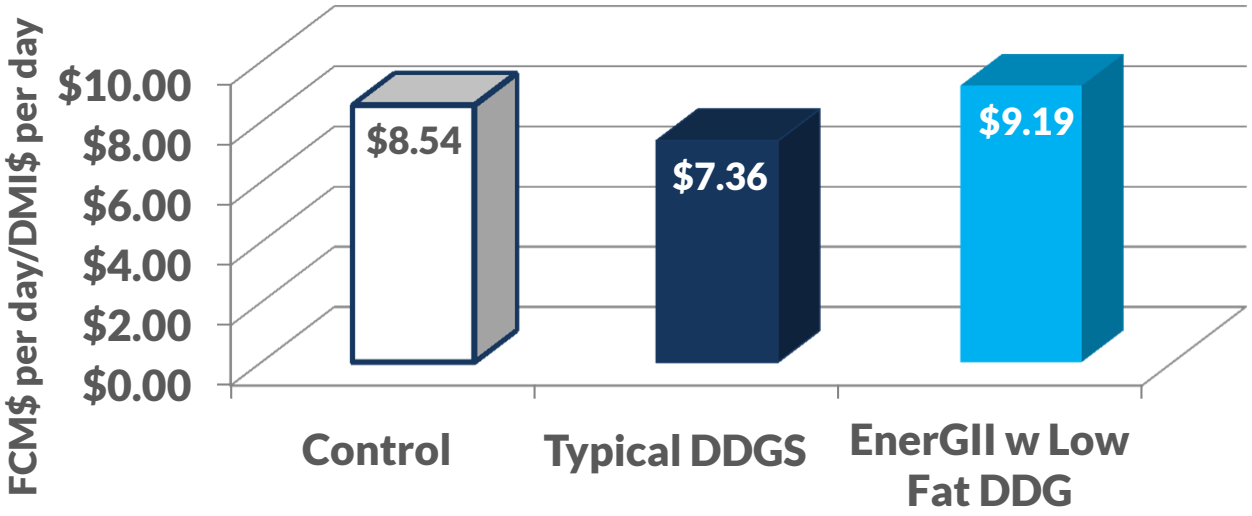
THE RESULTS: Income Over Feed Cost



$.66 EnerGII vs. Control

$1.83 EnerGII vs. Typical Distillers

*Assumptions: $18.00/cwt milk price and $0.15 per lb. feed cost across treatments, plus +$.10 additional cost/cow for typical distillers vs. control and +$.40/cow for EnergII treatment vs. control.

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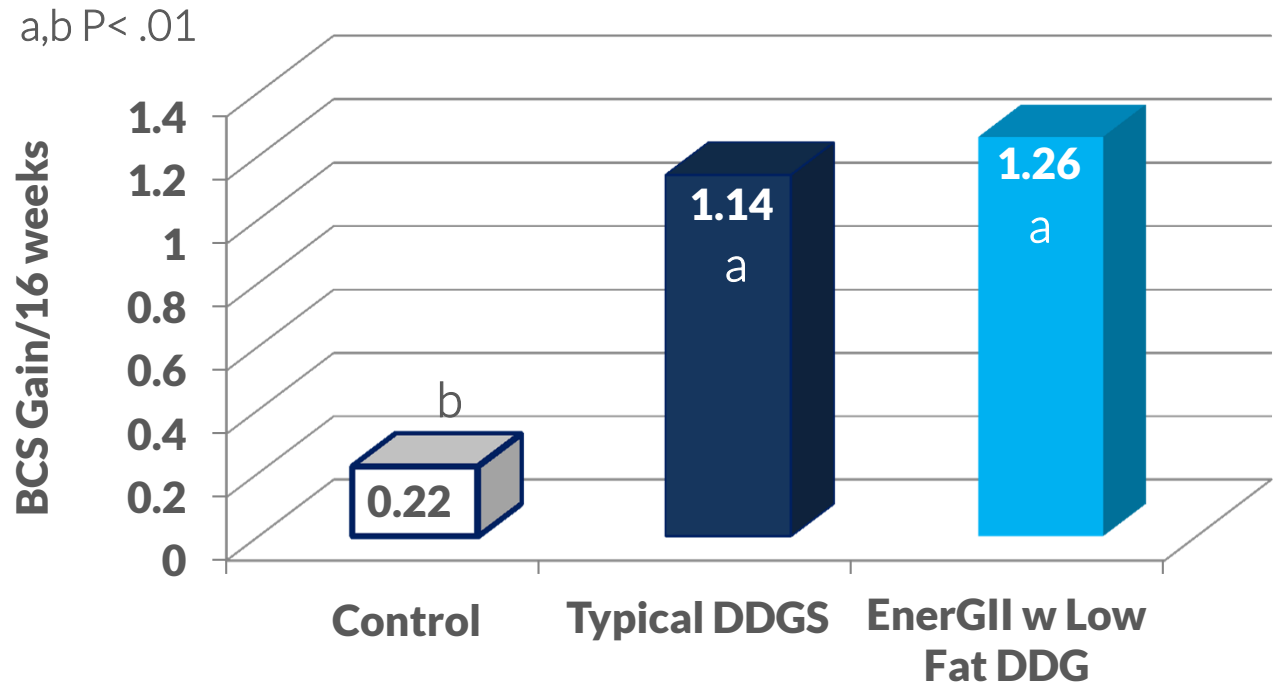
Distillers Grains vs. EnerGII

THE RESULTS: Body Condition Score Gain over 16 Weeks



+1.04 EnerGII vs. Control

+.12 EnerGII vs. Typical Distillers

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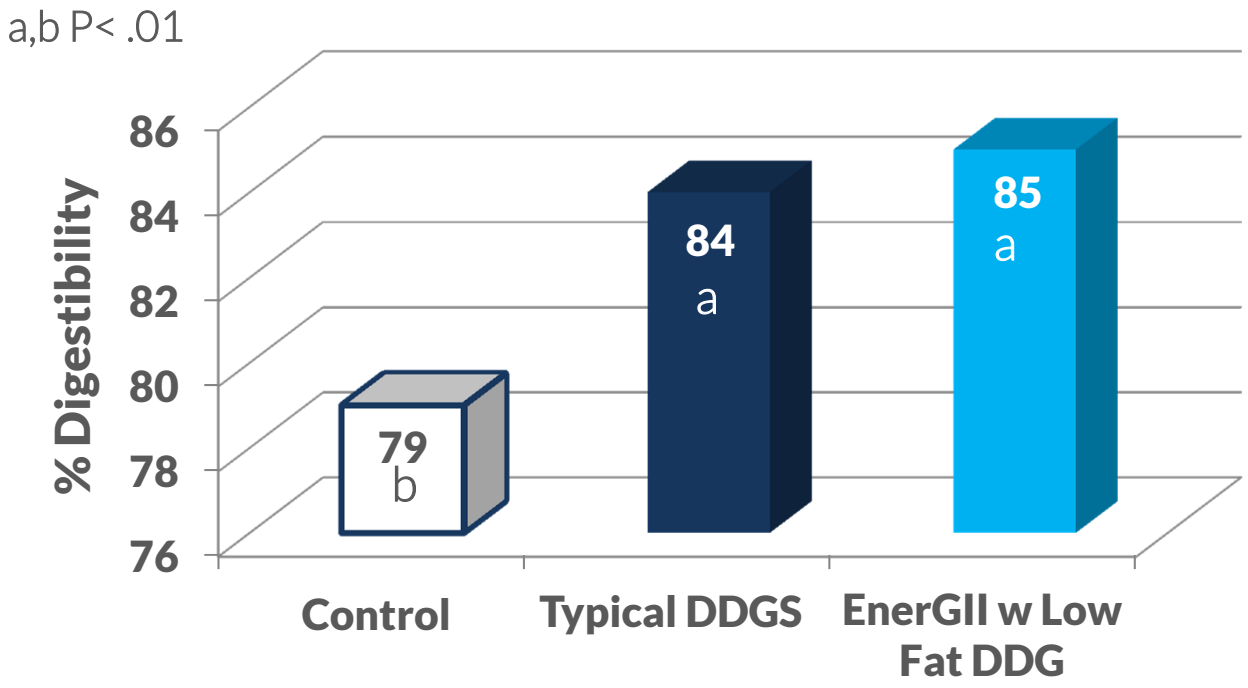
Distillers Grains vs. EnerGII

THE RESULTS: Fatty Acid Digestion



+6% EnerGII vs. Control

+1% EnerGII vs. Typical Distillers

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EnerGII vs. Low Fat Control

BENEFITS SUMMARY

EnerGII® CALCIUM SALTS OF FATTY ACIDS

vs. Control

+.13 % Fat

+4 lb Milk

+6.2 lb FCM

$.66

Income Over Feed Cost

+6% Fatty Acid Digestibility

+0.4 lb DMI

+.09 Feed Efficiency

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Makers of EnerGII® CALCIUM SALTS OF FATTY ACIDS

EnerGII vs. High Fat Distillers

BENEFITS SUMMARY

EnerGII® CALCIUM SALTS OF FATTY ACIDS

vs. Typical DDGS

+.19 % Fat

+4.9 lb Milk

+8.1 lb FCM

+1% Fatty Acid Digestibility

-4.5 lb DMI

+.25 Feed Efficiency

$1.83

Income Over Feed Cost

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Makers of EnerGII® CALCIUM SALTS OF FATTY ACIDS

Distillers Grains vs. EnerGII

THE RESULTS: Partial Budget Analysis

	EnerGII vs. Control	EnerGII vs. Typical DDGS
REVENUE		
Fat Corrected Milk (lbs.)	**6.2**	**8.1**
Milk Price	**$18.00**	**$18.00**
Milk Revenue	**$1.12**	**1.46**
COST		
Incremental Ration Cost	**$0.40**	**$0.30**
Change in DMI (lb.)	**0.4**	**-4.5**
Ration Cost/lb. DM	**$0.15**	**$0.15**
Incremental DMI Cost	**$0.06**	**$(0.68)**
Total Cost:	**$0.46**	**$(0.38)**
PROFIT		
Total Profit/cow/day:	**$.66**	**$1.83**

Assumptions: Typical DDGS @ $250/ton; Low Fat DDGS @ $250/ton, EnerGII @$1000/ton, Ration Cost: $0.15/lb., Milk Price: $18/cwt.

Distillers Grains vs. EnerGII

POINTS TO REMEMBER

- The diet with **EnerGII & Low Fat Distillers saw the greatest milk production, milk fat %, and fat corrected milk**, all on similar intakes relative to the control with just low fat distillers.
- These gains in production efficiency were due primarily to the **greater fatty acid digestibility in the EnerGII diet.**
- While the typical DDGS vs. EnerGII + Low Fat DDG treatments were equal in total fatty acids, the **EnerGII diet yielded 8.1 pounds more fat corrected milk and $1.83 cents greater income over feed cost**.
- While typical DDGS may seem like an 'inexpensive' ingredient at times, there are **tremendous costs to production efficiency vs. EnerGII**.