

# Potential for Use of Crude Glycerol by Beef Cattle

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# Value When Used in Beef Cattle Diets

Corn (\$ per bushel)

2.75

3.00

3.25

3.50

3.75

4.00

4.25

4.50

Crude Glycerol (\$ per Lb @ 85%)

0.042

0.046

0.049

0.053

0.057

0.061

0.064

0.068

Every \$0.25 per bushel increase in corn price equates to a one-half cent per pound increase in crude glycerol price.

# What is the Maximum Value of Crude Glycerol?

	<u>Price (\$ per ton)</u>	
Soybean meal	\$ 342	
	<u>Protein equivalent price</u>	
Bloodmeal	\$ 616	\$ 900
Fishmeal	\$ 445	\$1000

# Energy Feed Ingredient

- Replicated experiments with poultry, swine, beef cattle and dairy cattle have shown similar energy value to corn
- Use requires liquid feed ingredient handling capability
- Effect on diet form (pelleting) and/or limitation to amount of glycerol that can be metabolized after absorption will limit inclusion rates in diets (presently maximum inclusion rates are 5 to 10 % of the diet)

# Factors Influencing the Value of Crude Glycerol to Livestock

Compound	%	
Glycerol	75.5	} Energy value
Fat	0.2	
Water	15	} No nutritive value
Ash	9	
Methanol	0.3	} Anti-nutritive value

1. Quality control: prevent drift of non-nutritive components
2. Aid consumers in use compliance

# Is Crude Glycerol More than Just an Energy Source?

	%			
Corn	79	74	67	55
Supplement	21	21	23	25
Glycerol	0	5	10	20

# Is Crude Glycerol More than Just an Energy Source?

## % Crude Glycerol

	<u>0</u>	<u>5</u>	<u>10</u>	<u>20</u>
Intake (Lbs)	19.4 <sup>a</sup>	19.4 <sup>a</sup>	18.5 <sup>b</sup>	16.8 <sup>c</sup>
ADG (Lbs)	3.0 <sup>a</sup>	3.1 <sup>a</sup>	3.2 <sup>a</sup>	2.6 <sup>b</sup>
Feed : Gain	6.6 <sup>a</sup>	6.3 <sup>b</sup>	5.8 <sup>c</sup>	6.3 <sup>b</sup>

# Is Crude Glycerol More than Just an Energy Source?

- Feed efficiency of beef calves was improved 8% by adding 10% crude glycerol in the diet
- Using prices of \$3.60 per bushel for corn and \$220 per ton diet cost, the improved efficiency would value crude glycerol at \$0.12 per pound

# Value-Enhancing Attributes of Crude Glycerol

- Glycerol may improve water-holding capacity of pork
- Glycerol improved the eating pattern of feedlot cattle
- The extent of glycerol fermentation and end-products produced give glycerol value-added potential for dairy production
- The increased availability of wet by-products has increased interest in liquid diets which crude glycerol would obviously have a fit

# Marketing Crude Glycerol to Livestock Production

- Price and availability of feed ingredients has placed demand for crude glycerol above supply
- Animal feed use probably will provide a floor value for crude glycerol. The value of crude glycerol will likely be tied to corn price, at least initially.
- Use volume for animal feeding applications will be demonstrably greater than supply volume potential
- As more nutritional research is conducted the realized value of crude glycerol will probably increase.
- Source of fatty acids should not influence crude glycerol nutritive value

# Marketing Crude Glycerol to Livestock Production

- Quality Control: Consistency is a virtue. Energy value will be influenced by water and salt content
- Accompanying domestic sales of crude glycerol needs to be aid in helping consumers cope with methanol regulation
- Creating value for crude glycerol by the livestock industry can and will occur by identifying unique attributes of glycerol on animal performance, saleable product yield, and meat quality
- While livestock use will likely be on the lower end of creating value for the crude glycerol by product, the value can be significant and the potential use volume is considerably larger than production capacity