Alternative Feeds and Feed Additives for Beef Cattle

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Feed additives

AS-700 (Aureomycin + sulfa) Deccox (decoquinate) Ionophores We have to use proven Rumensin technology to improve **Bovatec** efficiency when our ♦ Yeast cultures market will allow it Seaweed extracts Organic trace minerals • Other?

Classification of Alternative Feeds

- Waste materials
 - Little proven value as feed. Primarily a disposal problem.
- Waste products
 - Certain factors greatly limit their usefulness.
 Broiler litter, cotton waste, potato waste.
- Byproducts
 - Great potential. Some factors may limit their use. Underutilized. Soybean hulls, corn gluten feed.
- Coproducts
 - Have attained primary ingredient value. Soybean meal, cottonseed meal.

From: Walker, 2000. Chapter 2 in Food Waste to Animal Feed edited by Michael Westendorf



Nutritional and economic value of alternative feeds given \$570/ton Soybean meal and \$7.05/bu (\$272/ton) Corn

			Value \$/ton	
Ingredient	CP %	TDN %	CP &	TDN
			TDN	Only
14% CP Corn/SBM	16	87	316	272
Corn Gluten Feed	22	84	353	263
Soybean Hulls	12	80	272	250
Distillers Grains	28	90	400	276
Whole Cottonseed	22	96	400	331
Cottonseed Meal	44	77	494	241
Wet Brewer's (21% DM)	26	77	85	56
50:50 SH:CGF Blend	17	82	305	251
Corn Silage (35% DM)	7	68	81	83

Current Market Price of Alternative Feeds*

	Price	\$Value	% of
Ingredient	\$/ton	CP & TDN	value
14% CP Corn/SBM	316	316	100
Corn Gluten Feed	195	353	55
Soybean Hulls	237	272	87
Distillers Grains	280	400	70
Whole Cottonseed	350	400	92
Cottonseed meal	390	494	79
Wet Brewer's (21% DM)	45	85	41
50:50 SH:CGF Blend	215	305	70
Corn Silage (35% DM)	65	81	80

*Delivered to Central Piedmont NC, July 29, 2013

Current Opportunities

- Soyhulls and Corn Gluten Feed are still among the better opportunities
- Corn silage may be a good value this year (but make sure you check dry matter %)
- "Niche" ingredients are the best deal at the current time
 - Bakery returns/waste
 - Vegetable processing waste
 - Cotton processing waste
 - Brewer's grains from microbreweries

Strategies for Reducing Feed Cost

 Reduced level of concentrate feeding Use of alternative concentrate ingredients Alternative feeding strategies Self-feeding Reduced frequency of feeding Low intake supplement strategies More emphasis on optimizing use of grazed forages and improved forage quality

84 day ADG (lb/d) when 5 cwt steers on free-choice grass hay were fed alternative concentrates at 6 lb/day



Performance of calves (initially 602 lbs) fed hay only, or supplemented with 6 lb/day, 14 lbs 3X/week or 21 lbs 2X/week of 50:50 blend for 84 days (2 yrs)



7X, 3X and 2X differ from hay only but don't differ from each other

Supplementation Level for Calves Grazing Stockpiled Fescue and fed 50:50 blend

- Experiment was done at the Butner Beef Cattle Field Lab in 2009 and 2010
- Fescue was stockpiled and stripgrazed 56 days
- Supplementation levels were 0.5, 1.0 or 1.5% of BWT
- Heifers were synch. and bred AI followed by cleanup bull



Effect of feeding a 50:50 soyhull:corn gluten feed mix at an increasing rate on heifer average daily gain and body condition score gain over 56 days on stockpiled fescue (initial wt 600 lb, initial BCS 5.2)

Supported by the NC Cattle Industry Assessment



Effect of feeding a 50:50 soyhull:corn gluten feed mix at an increasing rate on heifer initial and final weights

Supported by the NC Cattle Industry Assessment



Effect of feeding a 50:50 soyhull:corn gluten feed mix at an increasing rate on heifer cycling and breeding rate

Supported by the NC Cattle Industry Assessment



What about using a low level self-fed supplement or giving additional forage availability?



Introduction

This study evaluated how allowing a higher residual after grazing and providing supplemental protein tubs influenced pasture utilization, animal gain, and reproductive performance.



Supplement Intake



^a P < 0.05 for Tub and Allocation x Tub

Average Daily Gain, lb/d







Dry cows eating a byproduct mix out of tire feeders Cotton gin trash RPB Fruit waste



Successful use of Byproducts/Waste Products Takes a High Level of Management Ability and Is Best Suited to Larger Producers

We must address the limitations of our forage base and our forage management

Is Non-Toxic Infected Fescue a Viable Alternative?

 Endophyte-free fescue has not been successful in the "fescue belt"

Non-toxic infected fescues are available

- MaxQ
- MaxQ2
- BarOptima
- Soon there will be others
- Will cattle really perform better?
- Will they be as persistent as toxic fescue?

Performance of heifers grazing fescue varying in endophyte status during winter and spring, Drewnoski et al., 2009

Growth performance of heifers consuming fescue with varying endophyte status



College of Agriculture & Life Sciences

Percent of Endophyte Free, Toxic, or Non-Toxic Fescue in Pastures After Five Years of Grazing Measured Using Two Techniques















Pasture-Based Livestock Education Program



