Nutrition and Feeding For Show Calves

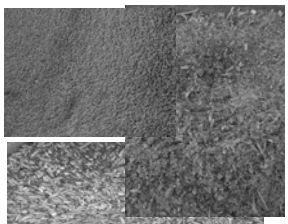
Important Terms

- Starter/Grower
  - Fed from about 400 to 900 lbs
  - Mission is to grow in size and lean muscle

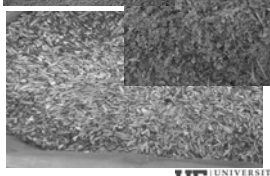
- Finisher
  - Fed from about 900 lbs to finish
  - Mission is to finish growing: muscle and fat

Important Terms

- Supplement
  - Used in addition to locally available forages and grains ("supplements" other feeds)



- Complete Feed
  - Designed to be the only feed fed, includes all nutrients an animal needs (roughage included)



Important Terms

- Dry Matter (DM)
  - Feeds vary in water content
    - Fresh pasture can be 70% water
    - Corn or other grains are about 10% water
  - By accounting for water content, feeds can be accurately evaluated for the other nutrients!

Important Terms

- TDN (total digestible nutrients)
  - A good way to estimate energy density of a feed
  - Growing beef animals require between 65-75% TDN
  - Ask your feed dealer for this value (not on feed tag)
  - TDN ≈ 80% - Crude Fiber %
  - See AN254 for more precise estimation

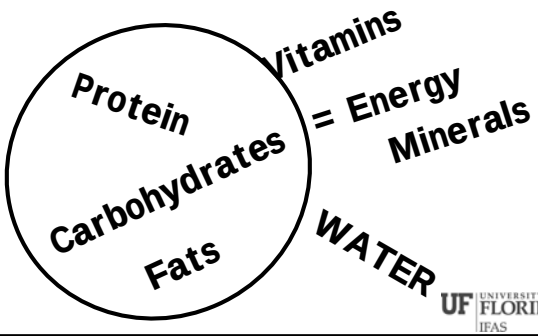
Important Terms

- CP (crude protein)
  - Estimates how much protein in a feed, but doesn't tell how much can actually be used by the animal
  - Growing beef animals require between 10-13%, show beef animals need 12-15%
  - Info on feed tag

What do feeds provide?

- What is a nutrient?
  - Chemical substance that provides nourishment for the body
- What types of nutrients are there?

What types of nutrients are there?

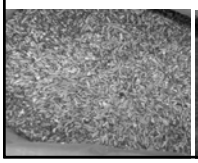


Types of Nutrients…

- Water – the MOST IMPORTANT
  - Animal's body is 70% water
  - Important for growth, nutrient transport, waste removal, and digestion
  - Supply CLEAN, FRESH SUPPLY daily!!!
  - Water intake promotes feed intake
  - Feed intake = body weight gain!

Types of Nutrients…

- Carbohydrates
  - Provide ENERGY!!
  - Energy needed to grow and perform
  - Examples include grain, hays
  - Makes up over 80% of beef ration



What do cattle require

- Energy (TDN)
  - Total Digestible Nutrients
  - Major "nutrient" required by cattle for growth
  - Energy is a product of digestion of feed, grains most important source for show cattle
  - Direct relationship between TDN and quality of feedstuff
  - Low quality feed = low energy and low intake = low performance

Feed	% TDN
Bahiagrass Hay	51
Alfalfa Pellet	59
Corn	88
Soybean Meal	84
Molasses	72

Table 4. Estimating TDN of commercial feed (base: 13% crude protein, 2% crude fat) using fiber and ash content[1]

	% Ash on the feed tag					
% Crude Fiber on feed tag	2	4	6	8	10	12
2	86.9	85.1	82.3	81.5	79.7	77.9
3	86.1	84.3	82.5	80.7	78.9	77.1
4	85.3	83.5	81.7	79.9	78.1	76.3
5	84.5	82.7	80.9	79.1	77.3	75.5
6	83..7	81.9	80.1	78.3	76.5	74.7
7	82.9	81.1	79.3	77.5	75.7	73.9
8	82.1	80.3	78.5	76.7	74.9	73.1
9	81.3	79.5	77.7	75.9	74.1	72.3
10	80.5	78.7	76.9	75.1	73.3	71.5

[1] For 16% protein feed, deduct 0.5% TDN from the estimate in the table
For 10% protein feed, add 0.5% TDN to the estimate in the table
For each 1% fat over 2% add 2.25% TDN to the estimate in the table

Adapted from J. Sprinkle, 1999, Univ. of Arizona Coop. Extension bulletin AZ1054

Types of Nutrients…

- Protein
  - Needed for growth and development
  - Growing/finishing cattle will require between 12-15%
  - Not nearly as important as energy

What do cattle require

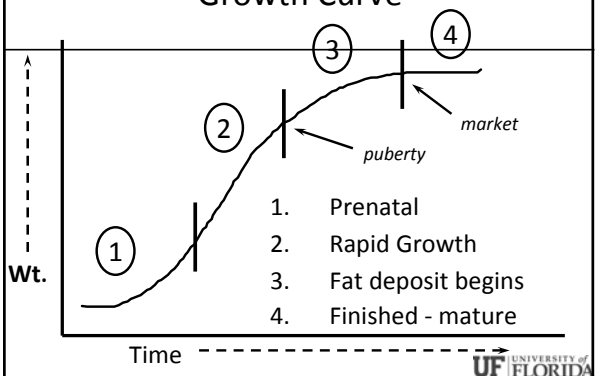
- Crude Protein (CP)
- Natural: soybean and/or cottonseed meal, alfalfa, CGF
  - Animal performance: natural>NPN
  - Supplies protein, energy, and other nutrients
  - Often fed in dry or pellet feeds
  - Increased cost/lb but valuable source of protein
- NPN: urea
  - Works best with medium- and high-energy diets
  - Lacks energy, vitamins, and minerals
  - Management and potential toxicity issues
  - Dry or liquid feeds

Feed	% CP
Bahiagrass Hay	7
Alfalfa Pellet	17
Corn	9
Soybean Meal	53
Molasses	6
Urea	291

Nutrient Requirements

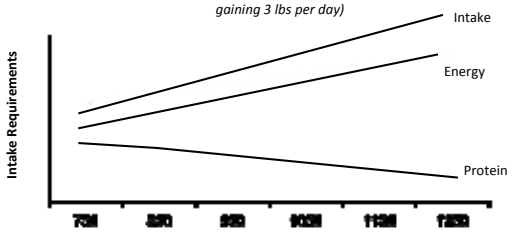
- Your animal requires minimum amounts of the various nutrients to meet gain expectations
- This amount varies based upon
  - Age, weight, breed, exercise/stress level, balance of the other nutrients, desired level of performance. etc
- Important to know how your animal's requirements change over the feeding period

Growth Curve



Growing Cattle Intake Requirements

(For large framed steers that will finish at 1250 lbs, gaining 3 lbs per day)

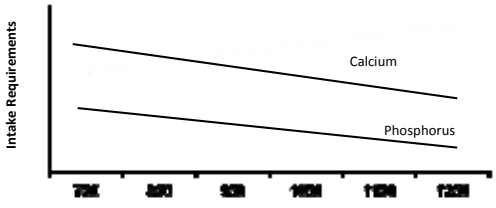


Units are POUNDS OF DRY MATTER PER DAY

See AN254 for specific amounts

Growing Cattle Mineral Requirements

(For large framed steers that will finish at 1250 lbs, gaining 3 lbs per day)



Units are % of Diet

See AN254 for specific amounts

Table 2. Nutrient requirement of growing and finishing medium-frame beef calves[1]

Body weight (lbs)	Average daily gain (lbs/day)	Dry matter intake (lbs)	TDN (%)	Protein (%)	TDN (lbs)	Protein (lbs)	Calcium (%)	Phosphorus (%)
500	0.5	11.6	54	8.4	6.3	0.97	0.25	0.17
	1.0	12.2	59	9.8	7.2	1.19	0.32	0.20
	1.5	12.6	61	11.2	8.1	1.41	0.40	0.22
	2.0	12.7	69	12.8	8.8	1.63	0.47	0.24
	2.5	12.5	75	14.7	9.4	1.84	0.56	0.27
	3.0	12.1	83	16.9	10.0	2.05	0.69	0.32
600	0.5	13.2	54	8.2	7.1	1.08	0.23	0.18
	1.0	14.0	59	9.4	8.3	1.31	0.28	0.19
	1.5	14.4	61	10.6	9.2	1.53	0.35	0.21
	2.0	14.6	69	11.9	10.1	1.74	0.40	0.22
	2.5	14.4	75	13.6	10.8	1.95	0.46	0.24
	3.0	13.8	83	15.7	11.5	2.17	0.57	0.29
700	0.5	14.9	54	8.0	8.0	1.19	0.22	0.18
	1.0	15.8	59	9.0	9.3	1.42	0.27	0.18
	1.5	16.2	61	10.1	10.4	1.64	0.31	0.20
	2.0	16.3	69	11.4	11.2	1.85	0.34	0.21
	2.5	16.1	75	12.8	12.1	2.06	0.40	0.22
	3.0	15.5	83	14.6	12.9	2.27	0.49	0.26
800	0.5	16.4	54	7.7	8.9	1.27	0.22	0.17
	1.0	17.5	59	8.3	10.3	1.44	0.24	0.19
	1.5	18.2	61	8.8	11.1	1.58	0.28	0.19
	2.0	18.6	69	9.2	12.8	1.72	0.31	0.20
	2.5	18.5	75	9.8	13.9	1.81	0.35	0.21
	3.0	16.8	83	10.8	13.9	1.81	0.42	0.25
900	0.5	17.9	54	7.6	9.7	1.36	0.21	0.18
	1.0	19.1	59	8.0	11.3	1.52	0.23	0.18
	1.5	19.9	61	8.4	12.1	1.66	0.25	0.19
	2.0	20.3	69	8.8	14.0	1.79	0.28	0.20

Growing Cattle Requirements

Summary

- As BODY WEIGHT INCREASES…
  - Dry Matter Intake (feed) INCREASES
  - Energy Needs INCREASE
  - Protein Needs DECREASE
  - Calcium and Phosphorus Needs DECREASE

Some Feeding Guidelines

- FRESH WATER AT ALL TIMES!
- Include a good quality forage at all times (minimum of 3-5 lbs per day) to maintain health of digestive system

Table 1. Feeding system adaptation timeline

Timeline	Roughage-Hay	Grain-Concentrate, lbs	Predicted Total Intake, lbs
Arrival at home			
Day 0 to 3	All calf will consume	0	15
Adaptation			
Day 3	All calf will consume	2	15
Day 5 to 6	All calf will consume	3	15
Day 7 to 8	All calf will consume	4	15
Day 9 to 10	All calf will consume	5	15
Day 11 to 12	All calf will consume	6	15
Day 13 to 14	All calf will consume	7	15
Growing-Finishing Step-up	Roughage-Hay, lbs (% of diet)	Grain-Concentrate, lbs (% of diet)	Predicted Total Intake, lbs
1 – 5 days	7 (50%)	7 (50%)	14
2 – 5 days	6 (40%)	9 (60%)	15
3 – 5 days	5 (30%)	11 (70%)	16
4 – 5 days	4 (20%)	13 (80%)	17
5 – remaining days	20%	80%	Increase daily feed amount

Some Feeding Guidelines

- Once on full feed, beef animal should have about 2.5 to 3 lbs of grain per 100 lbs of body weight
  - 700 lbs steer = ~ 17.5 to 21 lbs of grain/feed
  - 1000 lbs steer = ~ 25 to 30 lbs of grain/feed
- Follow the label directions!!!
  - Manufacturers include directions for a reason!

Calculations

- $/CWT feed = $ per ton / 20
  $9.00=$180/20
- $/CWT feed DM = $/cwt / (%DM/100)
  $9.78=$9.00/(92%/100)
- $/CWT Nutrient (TDN or CP) = $/cwt / (%Nutrient /100)
  $13.97=$9.78/(70%/100)

Feed Tag Review


Nutrena
RINGMASTER SHOW BEEF FEED
GROWING RATION
GUARANTEED ANALYSIS
RINGMASTER: THE PROVEN WINNER IN THE SHOW RING.

Nutrena
RINGMASTER SHOW BEEF FEED
FITTING RATION
GUARANTEED ANALYSIS
RINGMASTER: THE PROVEN WINNER IN THE SHOW RING.

- Guaranteed Analysis: CP, Fat, Fiber, Min/Vit TDN??
- Ingredient List
- Feeding Directions
- Caution Statements

TDN = ??

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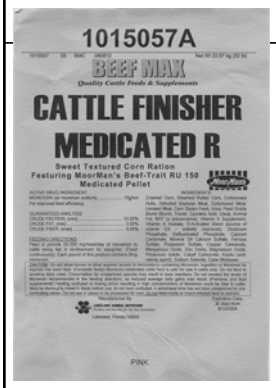
Feed Tag Review


1015057A
BEEF MAX
Quality Cattle Feeds & Supplements
CATTLE FINISHER MEDICATED R
Sweet Textured Corn Ration
Featuring MoorMan's Beef-Trait RU 150
Medicated Pellet
PINK

- Guaranteed Analysis: CP, Fat, Fiber, Min/Vit TDN??
- Ingredient List
- Feeding Directions
- Caution Statements

TDN = 71%, let's examine the ingredients

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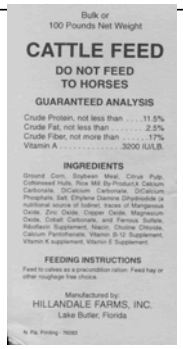
Feed Tag Review


Bulk or
100 Pounds Net Weight
CATTLE FEED
DO NOT FEED
TO HORSES
GUARANTEED ANALYSIS
Crude Protein, not less than 11.5%
Crude Fat, not less than 2.5%
Crude Fiber, not more than 17%
Vitamin A ..... 3200 IU/LB.
INGREDIENTS
FEEDING INSTRUCTIONS
Manufactured by:
HILLANDALE FARMS, INC.
Lake Butler, Florida

- Guaranteed Analysis: CP, Fat, Fiber, Min/Vit TDN??
- Ingredient List
- Feeding Directions
- Caution Statements

TDN = 58.5 ??, let's examine the ingredients

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Feed Management

- Water
- Bunk Space
- Feed Delivery
  - Amount
  - Frequency
- Other Feed Additives

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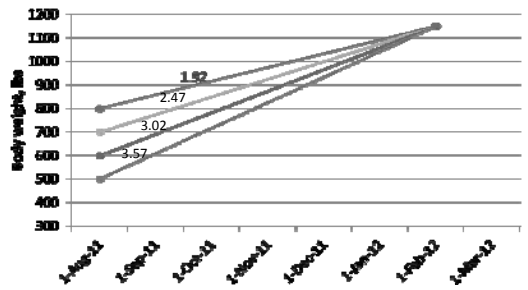
Calf Growth Rate for Show



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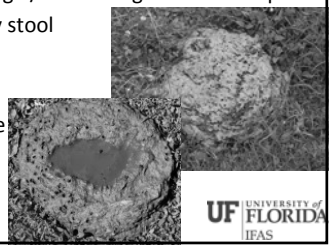
Nutritional Diseases

- Acidosis – Laminitis - Founder
  - Too much feed / Too much energy / Too quickly
  - Not enough roughage / Not enough time to adapt
  - Loose, grey, watery stool
  - Refuse feed/water
  - Increase roughage
  - Decrease fed intake



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Ionophores

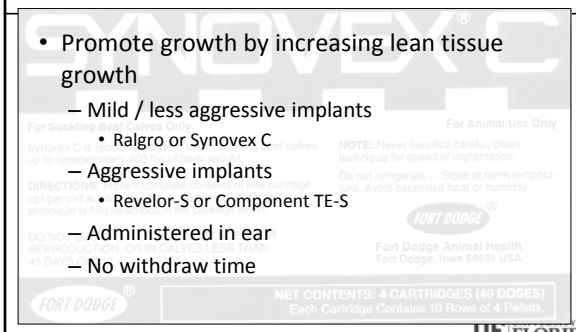
- Monensin – Rumensin
- Lasalocid – Bovatec
- Laidlomycin proprionate – Cattlyst
- Applications:
  - Backgrounding
  - Stocker
  - Replacement heifer development
  - Feedlot
- Under utilized in Florida

Implants

- Growth promoting implants are pellets that are implanted under the skin of the ear of growing calves
- Pellets release extremely low concentrations of various hormones
- Improve growth rate, feed conversion, and protein deposition

Implants

- Promote growth by increasing lean tissue growth
  - Mild / less aggressive implants
    - Ralgro or Synovex C
  - Aggressive implants
    - Revelor-S or Component TE-S
  - Administered in ear
  - No withdraw time



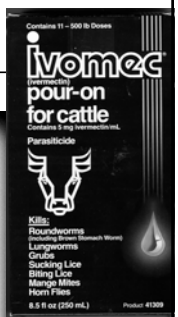
Implants

Implant	Category	Relative Potency
Component E-C, Compudose, Encore, Implus-C, **Synovex-C, Ralgro**	Estrogen	Mild
Component E-S, Duralease, Implus-S, Synovex-S, Ralgro Magnum,	Estrogen	Strong
Component T-S, Component T-H, Finaplix-H,	Androgen	
Component E-H, Component TE-G, Component TE-S Implus-H, Revalor-S, Revalor-H, Revelor-G, Revalor-IH, Revelor-IS, Synovex –H	Combination	Mild
Revalor-200, Synovex Plus	Combination	Strong

Montgomery, et al., 2001.

De-Worming

- Use a Pour-On
  - Eprinex
  - Ivomec
  - Cydectin
- No injection
- Poured on back
- Aware of withdraw time



Review

- Energy = Average Daily Gain
  - Protein secondary
- Feed enough: 2.5 to 3.0% of the calf's body weight
- There is no perfect feed
- Include roughage (hay) in diet
- Monitor Feed Intake and Gain

Show Steer Nutrition EDIS Document http://edis.ifas.ufl.edu/an254

Questions

Remember you are growing FOOD!!

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