Evaluation of Conventional vs. Grass Fed Beef Production

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- 24 taste panels
  - Denver and Chicago

- Strip loins
  - Flavor
  - Juiciness
  - Tenderness
  - Overall acceptability
• Higher scores for all attributes for steaks from conventional raised beef
  – Would pay $8.11/lb vs $5.47/lb for grass fed beef

• A majority of US consumers seem to be accustomed to the taste of conventionally raised domestic beef and prefer these steaks to those of grass-fed beef
Nutrient Requirements

• Energy
  – Insufficient energy probably limits performance of pasture fed animals more than any other nutritional deficiency.
    • Energy deficiency results a reduction in body growth and wool quality and in severe cases death
    • Energy needs can in most cases be met by feeding good-quality pasture, hay, or silage
      – Additional energy is required under certain conditions (before or after parturition, breeding season and finishing.)
• Energy
  – Grains can be fed
    • Barley
    • Corn
    • Wheat
    • Oats
    • Milo

Special precautions should be taken when feeding wheat. It requires longer adaptation period. Lambs are especially sensitive to over consumption and wheat should be fed at a low level (< 50% of grain) or increased gradually in the diet.
• Protein
  – Amount fed more important than quality
    • Ruminants have ability to convert low-quality protein to medium quality protein by bacterial action in the rumen
      – Ruminal microbes take the nitrogen portion of the proteins and build bacterial and protozoal protein which is then digested in the intestines
        » Protein digested in the small intestine consists of microbial protein and feed protein that has escaped microbial breakdown in the rumen
        » Microbial protein is sufficient to supply the ruminant’s protein requirements except during lactation and very young animals
• Protein
  – Green pastures provide adequate protein of most classes of pasture fed animals
    • When ranges are mature and bleached or have been dry for an extended period of time, additional protein may be needed
    • High protein feeds are often added to creep feeds because they are extremely palatable and stimulate appetite and digestive activity.
- **Protein**
  - Oil meals such as soybean meal or cottonseed meal contain 35 to 45% protein and are excellent sources of supplemental protein
  - Properly harvested legume hays (alfalfa) are often relatively high (25% CP) and can be used effectively to supply supplemental protein

(When protein supplementation is the primary objective, the cost per unit or pound of protein is the most important consideration)
• Protein
  – In some cases, non-protein nitrogen sources (e.g. urea) can be used to help meet protein requirements
    • Urea should not contribute more than 1/3 of the total nitrogen in the diet and should not be more than 1% of the total diet or 3% of the concentrate portion of the diet.
    • Urea should not be used in creep feed
    • Urea should is generally not recommended for range livestock or livestock fed low-energy feeds
• Protein
  – Supplements can be self-fed or hand fed
    • Hand fed supplements are usually fed in pellet or cake form
    • Protein blocks or liquid supplements can be self fed (usually more expensive but tend to save labor). Sometimes intake is controlled by higher levels of salt (make sure there is adequate water supply).
• **Minerals**
  
  – Na, Cl, Ca, P, Mg, K, S, Co, Cu, I, Fe, Mn, Mo, Se, and Zn
  
  – Most of these are met under normal grazing and feeding habits
  
  – Trace mineralized salt is usually free choice.
• Minerals
  – Salt serves many functions in body and when deprived, performance is reduced. Supplementary salt should be provided.
  – Ca and P
    • Mature pastures are deficient in P
• Vitamins
  – Require A D E and K
    • Usually not B vitamins since they are synthesized in rumen
    • Most forage and feed supply necessary amounts of vitamins
      – Dry hay or winter pastures may be deficient in A but sheep store A in liver
      – Vitamin D should not be deficient if animals are exposed to sunlight.
Growing and Finishing on Pasture

- Lush cool season grasses or alfalfa provide excellent pasture
  - Depending on targeted marketing date, supplemental concentrates can be fed ad libitum throughout finishing or during the last 30 to 40 days
  - Lush pastures only energy sources need to be provided (whole cereal grains)
  - Lower quality or mature pastures may benefit from grain-protein supplements
• Many areas, most profitable pastures are winter wheat, oat, or rye
  – Risk of nitrate poisoning
• Although small ruminants may be finished on small grain pastures alone, gains can be significantly increased with supplementing whole grains
  - Choice of grain depends on relative $
"Yes ... I believe there's a question there in the back."