

ASA Presentation Notes Lesson 5.3

Unit Name: Unit 5 Animal Nutrition

Lesson Topic: Lesson 5.3 Feedstuffs

Presentation on: Reading Labels

Terminology.

1. Crude Fiber (CF)
 - a. The part of feeds containing the cellulose, lignin, and other structural carbohydrates as determined by the proximate analysis.
2. Crude Protein (CP)
 - a. A measure or estimate of the total protein in a feed determined by multiplying the total nitrogen content by 6.25.
3. Dry Matter (DM)
 - a. The total amount of matter, as in a feed, less the moisture it contains.
4. Metabolizable Energy (ME)
 - a. The total amount of energy in feed less the losses in feces, combustible gases, and urine. Also called available energy.
5. Total Digestible Nutrients (TDN)
 - a. A standard evaluation of the usefulness of a particular feed for livestock, which includes all the digestible organic nutrients; protein, fiber, nitrogen-free extract, and fat.

Feed Analysis.

The chemical or material analysis of a feedstuff that is determined at a laboratory.

Feed Labels.

- Have less information than an analysis report.
- May use estimates rather than exact percentages of nutrients.

Guarantees.

- Guarantees allow for some flexibility in mixing a feed.
- Usually expressed as a percentage (%).
- Minimum – the least amount of a nutrient included in the feed (i.e., protein & fat).
- Maximum – the greatest amount of a nutrient included in the feed (i.e., fiber).

Food vs. Feed Label – Energy

- Food labels.
- Calories on a label are expressed in “food” calories.

- A food calorie is equal to one kilocalorie.
- One food calorie equals 1000 calories.

Feed labels.

- Energy expressed in megacalories per kilogram or Mcal/kg.
- One megacalorie equals 1,000,000 calories.

Food vs. Feed Label.

- Feed labels express energy content in megacalories per kilogram.
- Food labels express energy content in food calories based on a serving size.
- How do these relate?

Energy Content of a Candy Bar.

- First change food calories to calories. Since there are 1000 calories per food calorie, multiply the calories by 1000.
- There are 230,000 calories in a candy bar.
- Since the candy bar is 43g, the next step is to determine the calories per gram.
- Divide the total calories by 43.
- The result is 5348.8 calories per gram.

Feed composition tables are expressed in Mcal/kg. The next step is to determine the calories per kilogram.

- To do this, multiply by 1000.
- There are 5,348,800 calories per kilogram of candy bar.
- Finally, convert calories to megacalories. There are 1,000,000 calories per megacalorie.
- Divide 5,348,800 by 1,000,000.
- The result is 5.35 Mcal/kg.

Energy Comparison in a Candy Bar.

- Candy Bar ~ 43g
- 230 food calories/ 43g
- 230000 calories/ 43g
- 5348.8 cal/ 1g.
- 5348800 cal/ 1kg.
- 5.35 Mcal/kg

Digestible energy for beef cattle in common feeds.

- Corn ~3.66 Mcal/kg.
- Alfalfa ~2.56 Mcal/kg.
- Oats ~ 3.40 Mcal/kg.

ASA Reflection Page

List 5 key points that are important to remember from this presentation.

List 3 ideas or concepts that this new information has in common with previous things learned.

List questions or ideas that remain unclear about the information presented that should be asked for clarity at the appropriate time.