

CASE

*Curriculum for Agricultural
Science Education*

Principles of Agricultural Science – Animal

Feedstuffs

Unit 5 – Lesson 5.3 Feedstuffs

Feedstuff

- An ingredient or material fed to animals for the purpose of sustenance.
 - Provide one or more nutrients
- Feedstuff vs. feed
 - A feedstuff is not normally fed by itself, but is mixed with other feedstuffs to formulate a feed.

Feedstuff

- Roughages
- Concentrates
- Supplements
- Feed Additives



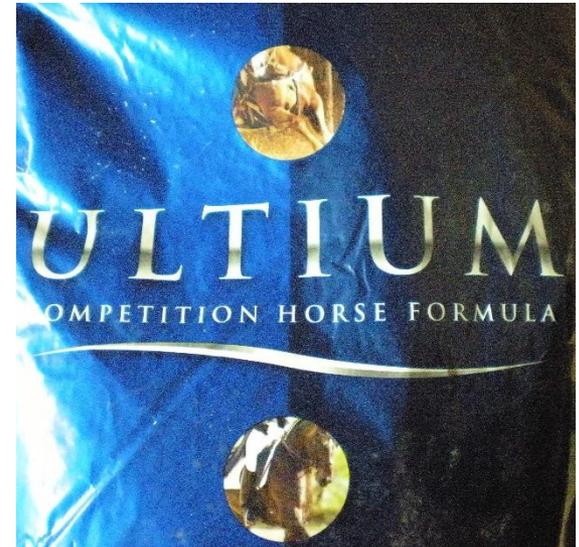
Roughage

- Feedstuffs that are high in fiber and low in nutrient density.
- Bulky
- Utilized primarily by ruminants and pseudo-ruminants
- Common sources:
 - Hay
 - Silage
 - Pasture



Concentrate

- Feedstuffs that are low in fiber and high in nutrient density.
- Energy sources
 - Cereal grains: corn, oats, barley
- Protein sources
 - Oil seed by-products: soybean meal



Supplements

Supplements are commonly used to provide small amounts of nutrients that are deficient in a ration.

- Vitamins
- Minerals
- Fats and oils



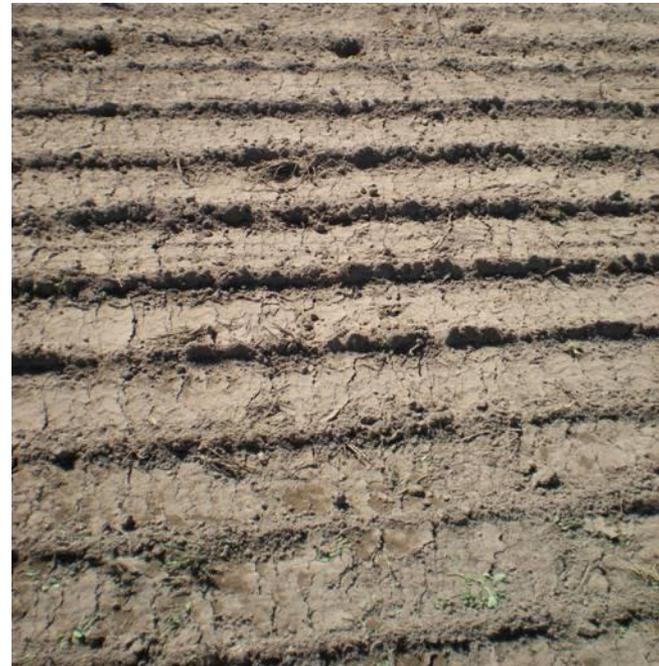
Feed Additive

- Feed additives are used to modify one or more properties of a feed. A feed additive does not add nutritional value.
- Additives:
 - Increase stability
 - Enhance growth or performance
 - Promote animal health
 - Improve consumer acceptance

Variability

The same feedstuff may have differing nutrient contents based on

- Time of harvest
- Growing conditions
- Soil conditions
- Water availability
- Geography



Variability

The amount of nutrition derived from a feed varies from species to species due to digestive differences.



NRC Feed Tables

- The National Research Council has published feed tables containing the nutritional value of common feeds.
- Use the feed tables as a guide.
- Feed analysis is still recommended due to variability in feeds.
- http://books.nap.edu/catalog.php?record_id=1713

References

- Cheeke, P.R. (1991). *Applied animal nutrition: Feeds and feeding*. Englewood Cliffs, NJ: Prentice Hall.
- Ensminger, M.E. (1991). *Animal science*. Danville, IL: Interstate Publishers, Inc.
- National Research Council. (1982). *United States-Canadian tables of feed composition: Nutritional data for United States and Canadian feeds, third revision*. Washington D.C.: National Academies Press.