

GENERAL NOTES ON FEEDING ZOO RUMINANTS

- 1.) There are about 150 ruminant species, each having evolved distinctive living and feeding strategies to cope with environmental pressures such as food availability and predators. Although ruminant physiology and eating habits vary widely, we can separate them into roughly three groups: about 25% are grazers, 35% are intermediates, and 40% are browsers. Size has nothing to do with what group a particular species falls into, it depends only on GI tract structure and feeding strategy. Examples of grazers are cattle, buffalo and sheep. Examples of intermediates are goats and white-tailed deer. Examples of browsers are giraffe, dik dik, gerenuk, moose, and mule deer.
- 2.) Grazers and browsers have different living and feeding strategies. Grazers eat about 3 times per day, then hide since grass is plentiful but offers no cover from predators. They eat lots of low nutrition grass and specialize in low digestibility fibers.
- 3.) Browsers eat about 18 times a day. Except in winter, browsers eat high nutrition sticks, twigs and fat shrubs and specialize in digesting cell solubles. In winter when good forage is not available, they switch to low digestibility fiber. So Browsers need either very high or very low digestibility fibers. Browsers are more sensitive to abrupt changes in feed than are grazers.
- 4.) In terms of nutritional requirements and behavior, intermediates are midway between grazers and browsers.
- 5.) Differences between grazers and browsers:

GASTRO-INTESTINAL TRACT STRUCTURE

<u>GRAZERS</u>	<u>BROWSERS</u>
Slow Fermentation Rates	Fast Fermentation Rates
Large Rumen	Small Rumen
Small Liver	Large Liver
Large Abomasum	Small Abomasum
Small Papillae in Rumen	Large Papillae in Rumen
Ratio of Length of Large Intestines to Small Intestines is Roughly 80:20	Ratio of Length of Large Intestines to Small Intestines is Roughly 70:30
Intestines are 25-30 Times Body Length	Intestines are 12-15 Times Body Length
Hind Gut Less Important to Digestion	Hind Gut Very Important to Digestion
Small Salivary Glands, High pH	Large Salivary Glands, Low pH
Digests Cell Walls	Digests Cell solubles

BEHAVIORAL PATTERNS

GRAZERS

Eat Three Times per Day

Eat Briefly, then Hide from Predators

Eat Everything, Digest Selectively

BROWSERS

Eat 18 Times per Day

Eat Where Protected from Predators

Eat Selectively, Digest what They Eat

6.) ADF-16 (5648) is designed for grazers. Mazuri Wild Herbivore Diets (5ZF1 and 5ZK4) are designed for all herbivores, and should be the only choice for intermediate and browsing herbivores, as these diets contain very low starch. Wild Herbivore Diets are also an excellent choice for grazing herbivores as well.

7.) Purina Mill's recommendation for feeding zoo ruminants is to discover where it is on the continuum - by looking at its diet in the wild, or by examining its GI tract and body structure. Please note that the grazer/browser issue is just ONE of many that can affect a particular ruminant specie. For more information about what to feed your captive ruminant species, call Mazuri Customer Service at 1-800-227-8941.