



Learn about what types of forages ruminant animals graze during different parts of the year.

Jr. Animal Scientist

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Grazing for the Ruminant Animal

How much land in the world is used for grazing?

The United States Department of Agriculture (USDA) has classified the land base in the U.S. as 46.3% agricultural, 27.9% forest, 14.0% special uses (vineyards, orchards, etc.), 3.1% urban, and 8.7% miscellaneous (swamps, marshes, bare rock, deserts, and rural residences). Agricultural land has further been classified as 37.4% crop land and 62.6% as grassland pasture and range.

In addition, the Food and Agriculture Organization (FAO) of the United Nations (UN) has classified 60% of all agricultural land globally as grazing land. That's A LOT of land! These grassland areas are not available for crop production use because of their soil types, altitudes, and/or annual rainfall.

The forages found on these grazing lands cannot be utilized directly for human food. Allowing domesticated ruminant animals such as cattle, sheep, and goats to consume these forages, will ultimately supply us with a high quality, nutrient dense food for human consumption.

Therefore, grazing animals have been, and continue to be an important sustainable source of human food not only in the U.S., but globally.



What do ruminant animals eat?

Cattle and bison are considered roughage grazers. They eat lots of different types of forages and are not very selective about what they put in their bellies. The anatomy of their stomach allows them to digest types of feeds high in fiber that humans cannot. A cow needs forage year round in their diet to keep them healthy. During the warmer months, cattle get the majority of their feed by grazing land.

Goats and sheep are similar to cattle in their anatomy, which also allows them to eat feeds high in fiber that humans cannot. They are known as intermediate feeders, and tend to be more selective than cattle. Goats specifically, enjoy browsing. They like to climb high and reach branches and shrubs. Not only do they enjoy the leaves, but also will chew a bit on the branches!

All ruminant animals enjoy grains, although, deer seem to be the ruminants that enjoy it the most! Cattle, sheep and goats usually live with very little grain in their diet, where deer do their best to consume as much as they can. Deer are very selective in what they like to eat and are known as concentrate selectors. While they will graze some and must to keep healthy, the anatomy of their stomachs limits their digestion of fiber. This is why you see lots of deer in the farmers' fields sneaking bites of corn and soybeans!



Types of forages found in the United States

There is an abundance of types of forages in the United States.

Depending on the region you are in will depict the type of forage found. The largest categories of forages found are grasses and legumes. Over 75% of the forages grazed by ruminants are grasses.

Perineal grasses, meaning they return every year, are grouped by what season they grow in. Cool season grasses such as bluegrass, tall fescue, orchardgrass, timothy and brome prefer cooler temperatures (60-80°F). Growth of these grasses begin early in the spring and last into the later fall months. Warm season grasses such as Indiangrass, switchgrass, big bluestem, little bluestem and grama grass prefer warmer temperatures (80-95°F). They thrive in the heat of the summer.

There also are a few **annual grasses**, meaning they need to be planted every year, that are used for grazing. These grasses include Sudan grass, sorghum x Sudan, pearl millet, oats, wheat and rye.

Legumes, the second largest forage found in the United States, are needed for ruminants because of their abundance of protein. Usually a pasture will include 30 to 50% legumes in a grass-legume mixture. Common legumes used for grazing are alfalfa, clover and birdsfoot trefoil.

Fun Facts:

- There are over 10,000 types of grasses.
- There are at least 40 different types that ruminant animals



Alfalfa (legume)

Uncut Alfalfa field in Montana



Photo: Wikimedia Commons / Arseny Khakhalin

Bluegrass (cool)



Photo: lcm1863 / www.flickr.com

Indiangrass (warm)



Photo: Matt Lavin / www.flickr.com

Tall fescue (cool)



Photo: Wikimedia Commons / David J. Stang

Switchgrass (warm)



Photo: Andreas Rockstein / www.flickr.com

Birdsfoot trefoil (legume)



Photo: Wikimedia Commons / Shanmugamp7

Pearl millet (annual)



Meet a Ruminant Nutritionist

Dr. Ron Lemenager

Dr. Ron Lemenager is a scientist who has spent his career feeding cattle. It is safe to say that his favorite animal is a cow!

He is the Beef Extension Specialist at Purdue University where he works closely with other scientists to ensure that producers in the area have the best knowledge on how to feed their cattle.

His research focuses mainly on cow-calf operations and specifically looks at the nutrition x reproduction interaction. This means that he studies how what a cow eats will affect their ability to have a baby. That's right, what you eat can change things!

Dr. Lemenager was raised on a livestock and grain farm in Illinois before continuing his education and receiving his Ph.D. from Oklahoma State University in Animal Science. Currently he is a fourth generation beef producer and, together with his two sons, as a cow herd and forage operation.



Word Search!

Find the following words in the puzzle.

ANNUAL

GRASS

NUTRIENTS

CATTLE

GRAZING

ORCHARDGRASS

DIGESTION

LEGUME

PERINEAL

FIBER

NATIVE

SHEEP

GOATS

GRASS

L T H D O O Q N O D T V K P X K F V
O G S D I R G F A J C O I M A G I V
I R P U F G C Y X T W Z Z F G O B L
G A E U B Y E H E T I O G U N A E Q
G Z R N S C A S A V W V L R A T R Z
Z I I L Y H S J T R A X E E A S T M
H N N N I M E N R I D N N G G S C E
Z G E F N N V E R R O G N A R U S V
X G A O I M B B P V U N R U I A M E
X A L V S L A Y Y Q Q G G A A X S E
L B C A T T L E O Q P G A Z S L W S
X N U T R I E N T S D J N F Y S X H

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CONTRIBUTORS: Drs Ron Lemenager (Purdue University) and Emily Taylor, edited by ASAS staff.

DESIGN: Jody Boles

CONTACT: jranimalscientist@asas.org

COVER PHOTOS: Large: iStock / Petoo
Small: iStock / moose henderson

Mailing information for publisher use: