

How forages have been essential to civilization?

About 2/3 of the world's land mass contains **predominantly grasses**.

Since humans cannot beneficially consume the cellulose within grasses, what is the best way to utilize this common plant species?

The best way that civilization has developed is to allow ruminant animals to feed on the cellulosic plants and **convert** the grasses into beneficial products to mankind.

Ruminants include cattle, sheep, goats, buffalo, deer, elk, giraffes and camels. These **animals** all have a digestive system that is uniquely different from our own. Instead of one compartment to the stomach they have four. Of the four compartments the **rumen** is the largest section and the main digestive centre.

Summarise of Forage Crop benefits

a. Products.

Historically, the majority of people consumers lived and worked on farms. Thus the connection between forages and everyday products such as milk and leather.

Products such as leather, milk, and wool are commonly used by millions of people. What is the ultimate source of these valuable products? It would be correct to say that they are derived from animals. But what enables animals to produce any of these products? Their source of energy for living and producing is found in the food they eat. Much of the food of animals is **FORAGES.**



The table below summarizes the source of a number of important forage-based products.

Table 2. Important forage-based products.

Products	Source
<u>Milk, Cheese, Butter, Cream, Ice cream</u>	Milk from dairy cows that eat FORAGES.
Wool	Shearings from sheep that eat FORAGES.
Leather	Hides from animals that eat FORAGES.
<u>Beef, , Lamb,</u>	Meat from beef cows, sheep, and deer that eat FORAGES.
Biomass Fuels	Fiber from switchgrass, alfalfa, corn and other FORAGES.
Medicinal Products	Biochemical intermediates from FORAGES.

b. Environmental benefits.

Forages are extremely important in the production of food and fiber. However, forages also play a vitally important role in maintaining a good natural environment.

Specifically, communities of forage plants:

- 1- produce oxygen for clean air,
- 2- help to reduce soil erosion,
- 3- aid in keeping residue out of waterways,
- 4- provide food and shelter for wildlife,
- 5- and beautify our surroundings with a variety of foliage and flowers.



c. Economic benefits.

1- Forages, whether they exist on farms, or in grasslands are contribute vital role to increase economic sector.

2- It is estimated that **1/4** of the total value of agriculture is comprised of forages.

3- Overall economic value of harvested forages and pastures is estimated 18 billion dollars per year .

List several grassland organizations and describe their role in promoting forages and grassland agriculture.

- [International Grassland Congress](#): (1920) This organization started by European scientists and dealt primarily with northern and central European countries for many years but now has expanded to include other land areas. This group encourages the interaction of scientists and technicians to address the improvement, management, use and better production of grasslands.
- [International Rangeland Congress](#): Begun in the United States in the 1970's, this organization promotes better understanding and appreciation of rangeland ecosystems.
- [Society of Range Management](#): This United States based group promotes teaching and research in the area of range management.
- [American Forage and Grassland Council](#): This organization seeks to be the voice of forage-based agriculture. It promotes research and education in the area of forage and grassland.
- [American Society of Agronomy](#): This organization promotes research, teaching and extension activities in the area of forages.
- [American Society of Animal Science](#): This group promotes the teaching, research and extension activities in the area of animal science.

Summary

Although every country has various native forages, it is important to realize that many forages grown today are not native to their specific area. Like immigrants, every country has adopted forage types throughout history in hopes of better living. So the cooperation of countries and scientists is very important to better research, produce, and utilize forages. There are several grassland organizations that include cooperation in their goals.