

## ***What is a Ruminant Animal?***

Many different species of ruminant animals are found around the world. 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. The rumen is filled with billions of tiny microorganisms that are able to break down grass and other coarse vegetation that animals with one stomach (including humans, chickens and pigs) cannot digest.

Ruminant animals do not completely chew the grass or vegetation they eat. The partially chewed grass goes into the large rumen where it is stored and broken down into balls of "cud". When the animal has eaten its fill it will rest and "chew its cud". The cud is then swallowed once again where it will pass into the next three compartments—the reticulum, the omasum and the true stomach, the abomasum.

Dairy calves have a four-part stomach when they are born. However, they function primarily as a monogastric (simple-stomached) animal during the first part of their lives.

At birth the first three compartments of a calf's stomach—rumen, reticulum, and omasum—are inactive and undeveloped. As the calf grows and begins to eat a variety of feeds, its stomach compartments also begin to grow and change. The abomasum constitutes nearly 60 percent of the young calf's stomach, decreasing to about 8 percent in the mature cow. The rumen comprises about 25 percent of the young calf's stomach, increasing to 80 percent in the mature cow.

Many of the plants that grow on earth cannot be used directly by humans as food. Over 50 percent of the energy in cereal crops that are grown for food is inedible to humans. Ruminants have the ability to convert these plants and residues into high quality protein in the form of meat and milk. In addition they feed on the rejects and cutting from fruit and vegetable farming and the by-products from food processing plants.

### ***For further information on Ruminants:***

<http://www.das.psu.edu/dcn/calfmgt/index.html>

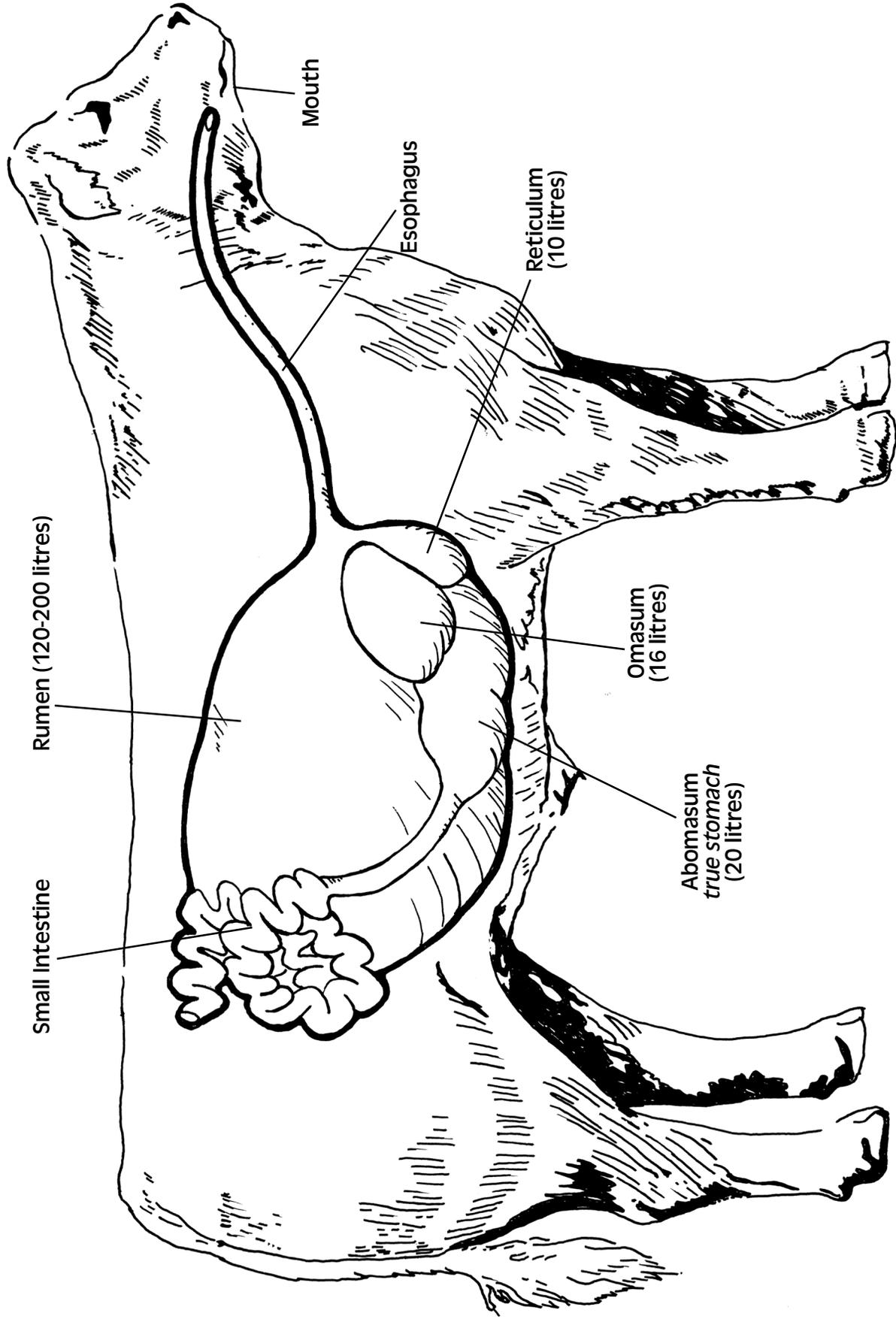
<http://www.ansi.okstate.edu/BREEDS>

### ***For further information on Sustainability and/or BC Agriculture:***

BC Cattlemen's Association <http://www.cattlemen.bc.ca>

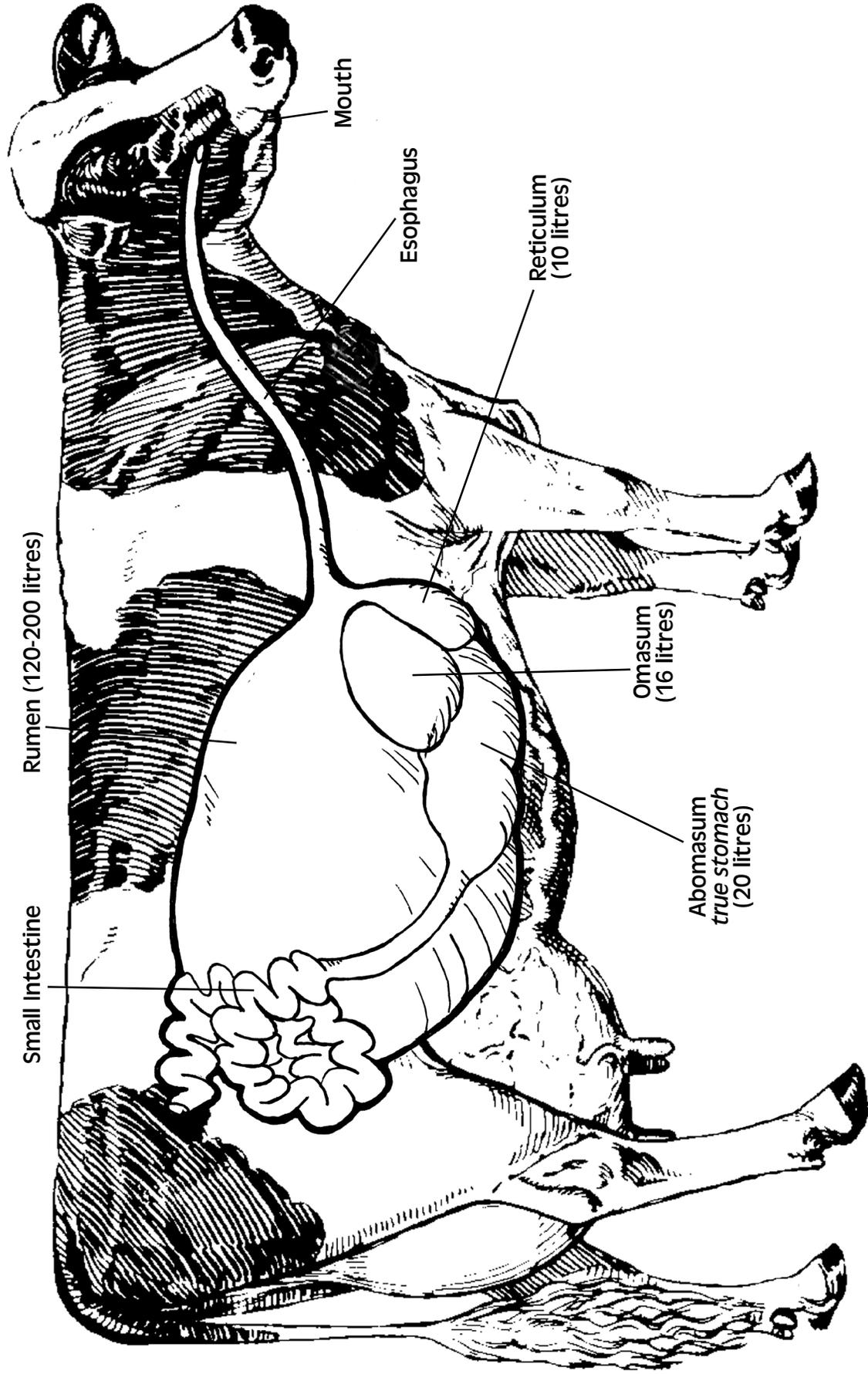
Sustainable Agriculture <http://www.sarep.ucdavis.edu/concept.htm>

and "*Grow BC*" *A Guide to BC's Agricultural Resources* (available from AITC)



## The Ruminant Digestive System in Beef Cattle





## The Ruminant Digestive System in Dairy Cattle

