

Life & Times of the

# Whitetail



## *I'll just have a salad*

**W**HEN YOU LOOK at a menu, what's your favorite section? Pasta, appetizers, seafood, steak, salad? Well, if you were a deer, the salad section would top the list. Deer have adapted to obtain everything they need from vegetation. Deer are not alone in this endeavor. Other ruminants, like cows and sheep, make a living eating green stuff too. All share a very similar digestive system, including a 4-compartment stomach. The first compartment — the rumen — is the key to their vegetarian diet. The rumen is where fermentation (the breakdown of plant matter by enzymes produced by microorganisms) takes place, and it is the main difference between ruminants and people.

The slender, tapered muzzle of a deer allows it to be specific in foraging, selecting the best parts of the best plants. They seem to select foods with low cell-wall content and comparatively high protein-to-tannin ratio. This is notable because deer do not have or need the diversity of microorganisms in their rumen that grass-chewing cows do. Thus, all rumens are not created equal and vegetation that sustains one species will not necessarily sustain another.

It takes two to four weeks for rumen microbes in deer to adjust to a new diet. This is not a problem because seasons change gradually and deer shift from goldenrod and clover in the spring; to mountain ash, cherry and bearberry in the summer; to acorns, apples and woody browse of red maple in the fall; to dead leaves, woody buds and conifers in the winter.

Abrupt changes in diet wreak havoc in the rumen. For example, deer adapted to a winter diet of woody vegetation will die of acidosis (a build up of lactic acid in the rumen) if they consume too much high-quality grain such as corn.

For simple-stomached primates like ourselves, a rumen seems like way too much work for a bite to eat. But if you were looking at the menu and saw that YOU were on it, it might change your perspective. Being the preferred food item of other species, deer can't be lollygagging at dinner time. A deer only chews its food enough to swallow it. The rumen of a deer can hold 10 pounds or more, compared to a human stomach, which holds only a pound. This allows the deer to chow down a lot of food quickly, and then steal away to finish the digestive job in safety. 

