

## The Role of Fibre in Dairy Cattle Nutrition

Ruminant animals require physical fibre in their diets to keep the rumen functioning normally. Chewing is required to break down large fibre particles and chewing promotes salivation. A cow producing 30 to 40 kg of milk may secrete as much as 200 litres of saliva daily. This amount of fluid being produced high up in the digestive tract washes feed particles through the rumen into the lower parts of the system. In addition, saliva contains buffers which serve to prevent the contents of the rumen from becoming too acidic.

The rumen fibre mat functions as a particle sorting system and stabilizes fermentation by trapping fine, dry particles.

Physical fibre also provides a 'tickle factor' which stimulates rumen contractions. These help to keep the rumen contents well mixed and to force fluid and small particles further down the digestive tract. A third function of long forage is the maintenance of a fibre mat which floats in the rumen and functions as a particle sorting system. Long particles near the top of the mat are the first to be regurgitated for cud chewing. Chewing subdivides and adds water to the particles. When they re-enter the rumen, they 'float' at a lower level than the longer, drier particles they were derived from. A functional mat also stabilizes rumen fermentation by trapping fine particles, slowing their rate of breakdown by reducing exposure to rumen microbes.

