Veterinary Bioscience: Digestive System

LECTURE 24
ROLE OF MICROBES IN DIGESTION

LECTURER

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INTENDED LEARNING OUTCOMES

At the end of this lecture, you should be able to:

- Compare the roles of microbes in the digestive function of different domestic animal species, and explain how disruption of the microbiome can result in disease.
- Explain the role of microbes in the digestive processes of hindgut and foregut fermenting animals.
- Discuss the relative advantages and disadvantages of microbial digestion in the foregut and hindgut.

KEY WORDS

Foregut fermenter; ruminant; hindgut fermenter; bacteria; nutrition; volatile fatty acids; carbohydrates; rabbits; guinea pigs; kangaroos; herbivores.

LECTURE OVERVIEW

This lecture considers the role of microbes in digestive function for various animal species. Herbivores have developed different means of accommodating microbes in their digestive tract, in order to digest plant structural carbohydrates. The relative advantages and disadvantages of having bacterial digestion in the forestomach or the hindgut can be compared. While intestinal microbes bring great benefits to the animal, disruption of the microbiome can result in severe disease, and several clinical examples will be illustrated.

FURTHER READING

McDonald, Edwards, Greenhalgh, Morgan. *Animal Nutrition.* (1995) 5th Edition. Prentice Hall Publishers.

The ruminant animal digestive physiology and nutrition. Church DC Ed. (1988). Eaglewood Cliffs, Prentice Hall Publishers.

Cunningham and Klein. *Textbook of Veterinary Physiology*. (2007) 4th edition. Saunders.