NUTRACEUTICALS IN LIVESTOCK & POULTRY

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Contents

1. Introduction 1

2. Antibiotics 5

Poultry 5
Antibiotic as growth promoter in poultry feeds 6
Ruminants 7
References 11

3. Probiotics 13

Characteristics of an ideal probiotic 15
Poultry 16
Use of probiotics as growth promoter 16
Effect of probiotics on gut micro flora 16
Health and production performance 16
Carcass quality characteristics of the broilers 17
Ruminants and pigs 17
Bacterial DFM 18
Fungal DFM 21
Practical Considerations for DFM/Probiotics 23
Conclusion 25
References 25

4. Prebiotics 29

Characteristics of Ideal Prebiotics 30
Beneficial Effects of Prebiotics 31

About the a

Dr. Amitav
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Classification 31
Mechanism of Action of Prebiotics 32
Ruminants 33
Pigs 33
Poultry 34
Lactose 34
Mannan-oligosaccharide 35
Fructo oligosaccharides 35
Miscellaneous prebiotics 37
Partially Hydrolysed Guargum (PHGG) 37
Lactosucrose 37
Isomalto oligosaccharide 37
Conclusion 37
References 39

5. Enzymes 43

Poultry 44
Phytates 44
Non starch polysaccharides (NSP) 45
Phytase 48
Adding Enzymes (dry) to Animal Feed 48
Spraying Enzymes (liquid) Directly onto Animal Feeds 49
References 51

6. Organic Acids 53

Poultry 54
Butyric acid 54
Acetic acid 55
Citric acid 55
Propionic acid 55
Lactic acid 55
Role of organic acid in egg production and quality parameters 56
Role of organic acid in immunity of poultry 56
Pigs 57
Organic acid on pig performance 57

Salmonella control in fattening pigs 58
Ruminants 59
References 60

7. Fatty Acids 65

Poultry 65
Ruminants 68
Biohydrogenation and Digestion of Fat 68
Fat Sources 70
Natural fats 70
Commercial fats 73
Quality Factors 73
Feeding Practices 73
Effects of Supplemental Fat on Milk Composition 75
Fat Analysis 76
Conjugated linoleic acid 76
CLA Chemistry 77
CLA Synthesis 78
Boosting concentrations of CLA in milk 78
Potential health benefits 80
Importance of dietary CLA in pig feeding 81
Conclusion 81
References 83

8. Phytobiotics 87

Curcuma longa (Haldi) 88
Terminalia arjuna 89
Emblica officinalis (Amla) 90
Azadirachta indica (Neem) 92
Ocimum sanctum (Tulsi) 93
Plant secondary metabolites 95
Saponins 96
Effects on animal growth and feed intake 96
Effects on the immune system 97
Antioxidant effects 98

Tannins 99
Definition and classification 99
The distribution of tannins in nature 99
Effect of tannins in ruminant nutrition 100
Practical use of tannins Treatments to protect dietary protein from ruminal degradation 100
Bloat prevention 101
Control of internal parasites 102
Essential oils 102
References 103

1 Introduction

The term "nutraceutical" was coined from "nutrition" and "pharmaceutical" in 1989 by Stephen DeFelice, MD, founder and chairman of the Foundation for Innovation in Medicine (FIM), Cranford, NJ. According to DeFelice, nutraceutical can be defined as, "a food (or part of a food) that provides medical or health benefits, including the prevention and/or treatment of a disease". In other words, nutraceuticals are chemical or natural feed ingredients which may enhance health by providing a physiological benefit by the provision of basic nutrients. Enzymes, prebiotics, probiotics, yeast and fungal extracts, predigested hydrolyzed carbohydrates and fats, phytogenic additives, acids etc are included in nutraceuticals. However, the term nutraceutical as commonly used in marketing has no regulatory definition.

A nutraceutical is a product isolated or purified from foods that is generally sold in medicinal forms not usually associated with food. A nutraceutical is demonstrated to have physiological benefit or provide protection against chronic disease. On the other hand, "functional feed" is similar in appearance to a conventional food that is consumed as a part of usual diet, and is demonstrated to have physiological benefits to reduce the risk of chronic disease beyond basic nutritional function, i.e. they contain bioactive compound. The different types of nutraceuticals have been classified in Table 1.1. However, only few of them have been studied in detail pertaining to their specific mode of action in different species, synergistic action etc. Studies on nutraceuticals have gained

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READERSHIP: ***The book will be useful for all those related to livestock, livestock product development and technology, animal nutrition, poultry sciences and food sciences***

Today, nutraceuticals have been recognized as any natural product, food or dietary supplement that provides medical or health benefits including the prevention of diseases. Keeping these aspects in view, the book covers different types of Nutraceuticals used in livestock and poultry, their role, mode of application, advantages and disadvantages if any.

In chapter 1, the concepts of feeding nutraceuticals have been discussed and classified into several groups. Chapter 2 presents feeding of antibiotics to poultry and livestock species and how it has been gradually replaced by different feed additives preferentially called as nutraceuticals. Chapter 3 to chapter 8 deals with different nutraceuticals often fed to poultry and livestock like probiotics, prebiotics, enzymes, organic acids, fatty acids and phytobiotics. The chapters introduce and classify the corresponding nutraceutical agents and then present a detail discussion on its efficacy as a feed ingredient, mode of action, specific rate of inclusion in the diet.

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