

Poultry Feedstuffs

Supply, Composition
and Nutritive Value

Edited by J.M. McNab and K.N. Boorman

**Poultry
Science
Symposium
Series**

Vol. 26



CABI Publishing

Contents

CONTRIBUTORS	viii
PREFACE	ix
I Present and future supply of feedstuffs	1
CHAPTER 1	
Agronomic and political factors influencing feedstuff use	3
<i>R.W. Dean</i>	
CHAPTER 2	
The assessment of the economic value of output traits genetically engineered into crops used in animal feed	15
<i>P.E.V. Williams</i>	
II Nutritional components of feedstuffs: qualitative chemistry	37
CHAPTER 3	
Carbohydrate chemistry of the feedstuffs used for poultry	39
<i>B. Carré</i>	
CHAPTER 4	
Nutritional components of feedstuffs: a qualitative chemical appraisal of protein	57
<i>R.G. Elkin</i>	
CHAPTER 5	
An appraisal of fats and fatty acids	87
<i>D.L. Palmquist</i>	
CHAPTER 6	
An appraisal of trace elements: inorganic and organic	99
<i>J.D. van der Klis and P.A. Kemme</i>	
III Feedstuff quality: quantitative assessment	109
CHAPTER 7	
Digestive processes in poultry from a physiological viewpoint	111
<i>G.E. Duke</i>	
CHAPTER 8	
Digestibility and bioavailability of protein and amino acids	115
<i>C.M. Parsons</i>	
CHAPTER 9	
The quantitative contribution of fat to metabolizable energy	137
<i>J. Wiseman</i>	

CHAPTER 10		
The availability of calcium and phosphorus in feedstuffs		151
<i>C. Coon, K. Leske and S. Seo</i>		
CHAPTER 11		
Vitamins in feedstuffs		181
<i>C.C. Whitehead</i>		
CHAPTER 12		
Energy utilization: measurement and prediction		191
<i>M.G. MacLeod</i>		
IV Factors influencing nutritive value		219
CHAPTER 13		
Non-starch polysaccharides: effect on nutritive value		221
<i>M. Choct</i>		
CHAPTER 14		
Secondary plant metabolites in poultry nutrition		237
<i>R. Smithard</i>		
CHAPTER 15		
Visual and tactile cues perceived by chickens		279
<i>M. Picard, J.P. Melcion, D. Bertrand and J.M. Faure</i>		
CHAPTER 16		
Effects of physical processing on the nutritive value of poultry diets		301
<i>K.J. McCracken</i>		
V Dietary enzymes		317
CHAPTER 17		
The role of carbohydrases in feedstuff digestion		319
<i>M.R. Bedford</i>		
CHAPTER 18		
The influence of lipase, α -galactosidase or multi-component pectinase enzymes on energy and amino acid availability in feedstuffs		337
<i>W.D. Cowan, D.R. Pettersson and P.B. Rasmussen</i>		
CHAPTER 19		
Recent trends and future developments in the use of feed enzymes in poultry nutrition		345
<i>J. Broz and P. Beardsworth</i>		
CHAPTER 20		
The effects of phytase in poultry nutrition		363
<i>F.J. Schöner and P.P. Hoppe</i>		
CHAPTER 21		
The scientific challenges ahead		375
<i>J.M. McNab</i>		
VI Poster Abstracts		383
Index		415