

Contents

1	Introduction to Welfare and Nutrition	1
	C.J.C. Phillips	
2	Hunger Associated with Restricted Feeding Systems	11
	Bert J. Tolkamp and Rick B. D'Eath	
3	Starvation of Ruminant Livestock	29
	J.P. Hogan and C.J.C. Phillips	
4	The Use of Feeding Behaviour in the Assessment of Animal Welfare	59
	Birte L. Nielsen, Ingrid C. de Jong, and Trevor J. DeVries	
5	Welfare Is Affected by Nutrition Through Health, Especially Immune Function and Inflammation	85
	Giuseppe Bertoni, Erminio Trevisi, Jos Houdijk, Luigi Calamari, and Spiridoula Athanasiadou	
6	Assessing Farm Animal Welfare from a Nutritional Perspective . . .	115
	Alex Bach, Marina A.G. von Keyserlingk, Tina M. Widowski, and Derek Haley	
7	Integrating Nutrition and Animal Welfare in Extensive Systems . . .	135
	Juan J. Villalba, Xavier Manteca, Philip E. Vercoe, Shane K. Maloney, and Dominique Blache	
8	Feeding Cattle for Improved Productivity, Health, and Welfare in Modern Farming Enterprises	165
	David E. Beever and Alex Bach	
9	Water and the Welfare of Farm Animals	183
	Marina A.G. von Keyserlingk, Clive J.C. Phillips, and Birte L. Nielsen	

10	Providing Feed to Livestock During Emergencies	199
	Larry W. Roeder Jr.	
11	Animal Welfare, Nutrition, and Economics: Past, Present, and Future	229
	C.J.C. Phillips	
	Index	241