



as su

nation

Russia

obtair

prestig

of Ex

Mos

accom

Fellow

Veterir

Garg

natior

semina

travele

Veterir

Veterin

conduc

includi

been



© Reserved 2012

ISBN 978-81-7622-243-3

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the authors.

Published by BIOTECH BOOKS

4762-63/23, Ansari Road, Darya Ganj, New Delhi-110002 (India) Phone: 23262132 E-mail: biotechbooks@yahoo.co.in

Laser Typesetting by: Deep Graphics, Delhi

PRINTED IN INDIA

Contents

Prefa	ce	xi	
1.	Sanitary collection of milk samples and rapid quality evaluation tests		
	1.1	Sanitary collection of milk samples for chemical and microbiological examination	
	1.2	Rapid quality evaluation tests	
2.	ding of milk by dye reduction tests		
	2.1	Methylene blue reduction test	
	2.2	Half-hour methylene blue reduction test	
	2.3	One-hour resazurin test	
	2.4	Ten-minutes resazurin test	
3.	Evaluation of adequacy of pasteurization of milk		
	3.1	Phosphatase test	
	3.2	Coliform count test	
4.		robiological examination of raw and eurized milk	
	4.1	Direct microscopic examination of milk	
	4.2	Standard plate count test	
	4.3	Psychrophilic and psychrotrophic bacteria count test	
	4.4	Thermophilic bacteria count test	
0	4.5	Coliform count test	

5.	Micı	robiological examination of milk products 55
	5.1	Collection, storage, transport and preparation of samples
	5.2	Heat processed fluid milk and milk products
	5.3	Cream
	5.4	Butter
	5.5	Ice cream
	5.6	Condensed milk (sweetened)
	5.7	Milk powder and infant milk foods
	5.8	Processed cheese
	5.9	Fermented milk products
	5.10	Indigenous milk products
	5.11	Food Safety and Standards Regulations, 2011
6.	Dete	ection of adulterants in milk65
	6.1	Starch
	6.2	Gelatin
	6.3	Cane sugar
	6.4	Sucrose
	6.5	Calcium carbonate
	6.6	Sodium bicarbonate or sodium carbonate
	6.7	Urea
	6.8	Detergent
7.	Det	ection of preservatives in milk71
	7.1	Boric acid or borax
	7.2	Formaldehyde
	7.3	Hydrogen peroxide

Handbook of Quality Control of Dairy and Meat Products

Contents		ents		vi
		7.4	Salicylic acid	
	8.		ation and identification of organisms of public th significance from milk and milk products	75
		8.1	Enumeration of Staphylococcus aureus	
		8.2	Detection of Salmonella	
		8.3	Enumeration of Bacillus cereus	
	9.		ection of antimicrobial residues and chemicals in foods	91
		9.1	Test for antimicrobial residues in milk	
	10.	Eval	uation of dairy plant sanitation	95
		10.1	Evaluation of equipment sanitation	
		10.2	Evaluation of microbiological quality of water	
		10.3	Bacteriological examination of air	
	11.	Ante	-mortem inspection of food animals in abattoir 1	07
		11.1	Purposes of ante-mortem inspection	
		11.2	Objectives of ante-mortem inspection	
		11.3	Inspection facilities	
		11.4	Principles of ante-mortem inspection	
		11.5	Abnormal conditions	
		11.6	Judgement on ante-mortem inspection	
		11.7	Ante-mortem inspection procedure in poultry	

13.1 Procedure of slaughter and dressing of

cattle/buffaloes

13.2 Procedure of slaughter and dressing of sheep/goats

viii	Handbook of Quality Control of Dairy and Meat Products
	13.3 Procedure of slaughter and dressing of pigs
	13.4 Procedure of slaughter and dressing of poultry
14.	Post-mortem inspection of animals in abattoir
	14.1 Purpose of post-mortem inspection
	14.2 Post-mortem inspection facilities
	14.3 General principles of post-mortem inspection
	14.4 Basic steps in post-mortem inspection
	14.5 Post-mortem inspection procedure
	14.6 Decisions at the post-mortem examination
15.	Sampling of meat and meat products
	15.1 Collection of superficial samples
	15.2 Collection of deep samples
	15.3 Collection of sample from packaged food
16.	Examination of physical quality of meat
	16.1 Physical examination of meat for quality assurance
	16.2 Determination of extract release volume (ERV)
	16.3 Determination of water holding capacity (WHC)
17.	Sensory evaluation of fish quality
	17.1 Assessment of freshness of fish
	17.2 Assessment of raw gutted fish stored in ice
	17.3 Assessment of raw gutted fish stored at ambient temperature
18.	Hygienic quality assessment of meat and meat products
	18.1 Standard plate count test
	18.2 Coliform count test

Contents		
19.	Examination of meat and meat products for pathogenic bacteria 167	
	19.1 Detection of Salmonella in meat and meat products	
	19.2 Detection of Listeria in meat and meat products	
	19.3 Enumeration of Staphylococcus aureus in meat and meat products	
20.	Identification and differentiation of meat species 175	
	20.1 Identification of carcasses of different species on the basis of anatomical features	
	20.2 Differentiation of sheep and goat carcasses	
	20.3 Differentiation of horse and cattle carcasses	
21.	Inspection of abattoirs, meat processing plants, marketing centers and food service establishments 179	
	21.1 Visual inspection	
	21.2 Laboratory examinations of environmental samples	
	21.3 Personal hygiene and health status check up of workers	
Index		



About the Book

With the consumers becoming more and more demanding on food quality and safety, the food industry has to build up its capacity to meet the national and international regulatory requirements. The quality of food has to be continuously monitored and improved not for the consumers' safety alone but also to face the tough competition in global trade. As rigorous inspection of food samples and food establishments by the regulatory agencies is indispensable, it is essential that food inspectors and quality control analysts are competent and skilled in order to maintain the credibility of the regulatory system. This handbook systematically elaborates the techniques of inspection and analysis of dairy and meat products. The regulatory guidelines given in the handbook make it a handy tool for unwavering judgement of the product quality. The handbook is a unique resource for the students and teachers of food hygiene, food safety and quality control in a wide range of institutions including veterinary colleges, medical colleges, dairy institutes, meat processing institutes, food science and technology institutes, hotel management and catering institutes, home science colleges, public health departments and food quality control laboratories.



BIOTECH BOOKS 4762-63/23, Ansari Road, New Delhi-110002 Ph.: 23262132

e-mail: biotechbooks@yahoo.co.in

