

CONTENTS

Chapter	Page
Preface	ix
1. General Remarks	1
Laboratory Protection	1
Laboratory Safety-First Aid	3
Storage and Handling	3
Sampling Procedure	4
2. Proximate Analysis	7
Moisture:	
1) Air Oven Method	7
2) Cenco Moisture Balance	7
3) Ohaus Moisture Balance	8
Fat:	
1) Crude Fat (Soxhlet extraction)	9
2) Modified Babcock Type	9
3) Perchloric-Acetic Acid Method	11
4) Banco Method	12
5) Dimethyl Sulfoxide Method	13
Protein:	
1) Protein Determination (Kjeldahl Procedure)	14
2) Nitrogen Determination for Nitrate Containing Samples	16
Ash:	
1) Muffle Furnace for Ashing	16
Calcium:	
1) Quantitative Test (Ashing Method)	17
2) Quantitative Test (Disodium EDTA Method)	18
3. Curing Ingredients	21
Salt:	
1) Acid Digestion Method for Meats	21
2) Analysis for Brine and Cure	23
3) Quantab Indicator Methods	23
Nitrite:	
1) In Meat-Suflanilic Acid Method	24
2) In Cure and Pickle (In Presence of Ascorbates)	26
Nitrate:	
1) In Meat Product-Xylenol Method	27

4.	Sausage Ingredients and Curing Adjuncts	31
	Sugars:	
	1) In Meat Products, Cure and Pickle	31
	2) Corn Syrup and Dextrose in Meats	35
	Milk Solids:	
	1) Qualitative Test in Absence of Maltose	36
	2) Quantitative Test for Lactose (Absence of Maltose)	37
	3) Quantitative Test for Calcium Content (Titration Method)	39
	Cereal:	
	1) Determination by Gravimetric Method	41
	2) Soybean Flour and Soy Protein Concentrate	43
	3) Starchy Flour-Qualitative Test	44
	Ascorbic Acid:	
	1) Ascorbates in Meats (Titration Method)	44
	2) Ascorbates in Cure and Pickle	46
	Phosphate:	
	1) In Meats and Meat Products	47
	2) Converting Factors for Phosphorus	48
	3) Procedure for Curing Pickles	48
5.	Other Meat Properties (Evaluation)	51
	1) Determination of Peroxide Value and Free Fatty Acids in Meat Fat (modified-AOCS)	51
	2) Total Acidity of Meat or Meat Product	52
	3) Rancidity Test (TBA Method)	53
	4) Meat Pigments in Cured Meat Products	55
	5) Sulfites in Meat (Qualitative Test)	56
	6) Sulfites in Meat (Quantitative Lead Acetate Test)	57
	7) Iron Content in Meat (Qualitative Test)	58
	8) Iron Determination (Quantitative Colorimetric Method)	59
	9) Crude Fiber	61
	10) pH Measurement for Meats and Meat Products (Hydrogen Ion Concentration)	62
	11) Chlorine Content in Water	64
6.	Meat Fats (Lard and Tallow)	67
	1) Typical Test Standards	67
	2) Moisture Content	67
	3) Free Fatty Acids	68
	4) Acid Value Expression	69
	5) Insoluble Impurities	69
	6) Peroxide Value Test for Lard and Tallow	70
	7) Iodine Value (Hanus Iodine Value)	71

8) Unsaponifiable Matter Test	72
9) Raw Color-Lovibond Tintometer	74
7. Interpretation of Laboratory Results	75
1) Water Added	75
2) Corrected W/A in Presence of Milk Solids	75
3) Raw Sausage W/A	76
4) Trimmable Fat Calculation	76
5) Added Substance	76
6) Moisture-Protein Ratios for Some Products	76
7) Current Meat Inspection Requirements or Analytical Results	77
8) Water Added for Hams and Canned Foods	78
9) Added Phosphates (by Analysis)	78