

Technology of  
**CHICKEN MEAT  
AND  
POULTRY PRODUCTS**



**PRINCIPLES OF MEAT  
PROCESSING TECHNOLOGY**

Meat processing technology  
Equipment used in meat processing  
Meat Grinder (Mincer)  
Bowl cutter (bowl chopper)  
Filling machine (sausage stuffer)  
Clipping machine  
Smokehouses  
Burning/smouldering of saw dust  
Smoke generation through friction  
Smoke generation through steam  
Combined equipment  
Brine Injector  
Tumbler or Massager  
Mixer/Blender

**PRE-SLAUGHTER FACTORS  
AFFECTING POULTRY MEAT  
QUALITY**

Harvesting  
Feed withdrawal  
Live production Management  
Lighting and cooping  
Environmental temperature  
Carcass contamination  
Short feed withdrawal  
Long feed withdrawal

**SLAUGHTER THROUGH  
CHILLING TECHNOLOGY**

Slaughter  
Unloading  
Stunning  
Killing

**DEBONING TECHNOLOGY**

Adding value  
Parts  
Yield  
Aging and deboning

**INGREDIENTS OF NON-MEAT**

Categories of non-meat ingredients  
Chemical substances used as  
ingredients  
Non-meat ingredients of animal  
origin  
Ingredients of plant origin  
Application of non-meat ingredients  
Methods of application

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Technology of

**CHICKEN MEAT AND  
POULTRY PRODUCTS**

By : Dr. Himadri Panda

During grinding  
During chopping  
Application to non comminuted meat  
Treatment before application  
Common salt (sodium chloride)  
Levels used 1.5-3.0%  
Seasonings (spices)  
Water  
Fresh  
Flour  
Starch  
Gari  
Vegetables and Fruits

**MANUFACTURING MEAT FROM  
POULTRY**

Examples for chicken cutting  
Industrial method  
Grading of chicken meat for large  
operations  
Chicken white muscle meat with  
visible fat

**SEASONINGS USED IN MEAT  
PROCESSING**

Natural spices  
Herbs  
Vegetable bulbs

**HEAT TREATMENT OF MEAT  
PRODUCTS**

Heat treatment for microbial control  
Enhancement of texture, flavour and  
colour through heat treatment  
Heating parameters for meat  
products  
Hurdle technology of heat treated  
products

**PROCESSED MEAT PRODUCTS  
TECHNOLOGY**

Fresh processed Meat Products  
Fresh sausages  
Meat and non-meat ingredients  
Processing of higher quality fresh  
sausages

**TECHNOLOGY OF WASHING  
POULTRY DURING PROCESSING**

Peroxy-carboxylic Acid Antimicrobial  
Composition  
Compositions of Carboxylic Acids  
and Peroxy-carboxylic Acids  
Liquid Peroxy-carboxylic Acid  
Antimicrobial Composition  
More About Liquid Peroxy-carboxylic

Acid Compositions  
Other Fluid Compositions  
Hydrogen Peroxide  
Carrier  
Adjuvants  
Stabilizing Agents  
Wetting or Defoaming Agents  
Hydrotrope  
Thickening or Gelling Agents  
Formulation  
Use Compositions  
Peroxy-carboxylic Acid Compositions

**MANUFACTURING OF RAW  
FERMENTED SAUSAGES**

Biochemical processes in  
manufacture  
Principles of manufacture  
Raw materials

**MANUFACTURING TECHNOLOGY  
OF RAW COOKED MEAT  
PRODUCTS**

Classical raw cooked products  
Principles of manufacture  
Raw material and additives  
preparatory steps for processing  
Other Animal Tissues  
Additives and Spices  
Mode of consumption  
Raw cooked products other than  
sausages

**PRECOOKED COOKED MEAT  
PRODUCTS TECHNOLOGY**

**PROCESSED PRODUCTS FROM  
CHICKEN MEAT**

**MANUFACTURING OF MEAT  
PRODUCTS**

**UNIQUE MEAT PRODUCTS  
TECHNOLOGY**

**FRESH POULTRY MEAT  
MANUFACTURING TECHNOLOGY**

**DRYING OF MEAT TECHNOLOGY**

**PRODUCTION OF POULTRY  
PRODUCTS**



ISBN : 9789380772240

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# Technology of CHICKEN MEAT and POULTRY PRODUCTS

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the above mentioned publications. It should also represent not only the latest developments of meat processing technology but also use modern publication techniques such as digital photography and computer-created charts and graphs in order to visually clarify and explain facts and procedures described in the text.

The result is a comprehensive compendium on all important topics relevant to the small- to medium-size meat processing sector, with more than 400 colour photographs, drawings and graphs. It can be anticipated that this publication will be a useful guidebook not only for establish small business enterprises in this sector or are interested, from the meat processing industries in developing countries, but for all those who plan to training point of view, in this important part of food manufacture.

This book is the product of some of the best poultry and food scientists in the world today. Its concept was born from the need for a good instructional textbook in the poultry processing and product quality courses taught by many of the contributors. The text is an instructional and not necessarily exhaustive review of the scientific literature in each of its component areas. In addition to its teaching use, this book will also be a useful information for academic researchers, industry personnel, and extension specialists/agents seeking further knowledge.

Author is a active participants in the Multi-State Research Project, and the collaborative relationships fostered by this project have made this book possible. I thank the Scientists for their time and meaningful discussion, advise .

I am also deeply indebted to Mr Sudhir Gupta for his excellent technical and creative assistance, without which this book would not have been possible.

**Author**

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# 1

## Introduction

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The rising demand for meat in developing countries is mainly a consequence of the fast progression of urbanization and the tendency among city dwellers to spend more on food than the lower income earning rural population. Given this fact, it is interesting that urban diets are, on average, still lower in calories than diets in rural areas. This can be explained by the eating habits urban consumers adopt. If it is affordable to them, urban dwellers will spend more on the higher cost but lower calorie protein foods of animal origin, such as meat, milk, eggs and fish rather than on staple foods of plant origin. In general, however, as soon as consumers' incomes allow, there is a general trend towards incorporating more animal protein, in particular meat, in the daily diet. Man's propensity for meat consumption has biological roots. In ancient times meat was clearly preferred, consequently time and physical efforts were invested to obtain it, basically through hunting. This attitude contributed decisively to physical and mental development of humankind. Despite the growing preference in some circles for meatless diets, the majority of us will continue eating meat. It is generally accepted that balanced diets of meat and plant food are most effective for human nutrition.

Quantitatively and qualitatively, meat and other animal foods are better sources of protein than plant foods (except soy bean products). In meat, the essential amino acids – the organic acids that are integral components of proteins and which cannot be synthesized in the human organism – are made available in well