



PROPERTIES OF RAW MATERIALS

BROILER

- Meat type chicken is known as broiler
- Consisted of young female chickens



- Slaughtered when 6 or 7 week
- Weight range 1.13 to 2.04 kg
- High growth rate



 Have white feathers and yellowish skins



HOUSING



- 15-20 °C
- 20 % RH
- 24 hour lighting to 12 hours constant light
- White light to red light
- Energy sources cereals such maize and sorghum





CHICKEN UNLOADING SYSTEM





Live Bird Supply









RECEIVING AND WEIGHTING

- o a bulk weighing of the birds
- o used to determine the payment to the farmer.

UNLOADING

- Automated unloading systems
- the whole modulus is lifted





Shocked

- 🖉 Between 2–5 min
- About 35–50% of the total blood is lost







- ø warm water to loosen the feathers
- performed manually
- single stage or multistage scalding bath
- Hard scalding
- Medium scalding or subscalding
- Soft/semi-scalding





Soft/semi-scalding

- For young broilers
- Not damage the outer layer of the skin
- Easy removal of the feathers

Technique	Water Temperature (°C)	Time (sec.)	Used For
Hard scalding	59-61	45-90	Waterfowl
Medium/subscalding	54-58	60-120	Mature birds
Soft/semi-scalding	50-53	60-180	Broilers, roasters, young turkeys





- Mechanical pickers/pluckers equipped
- Manually
- Between two/three sets of drums or disks covered with rubber fingers
- made out of rubber and contain different levels of a lubricating agent that controls their hardness, elasticity, etc
- the carcass is passed between the rotating disks

(a)





(b)







- Manually
- Automated equipment
- Cut be done between the bones and not through a bone



- manually as the carcasses fall onto a sorting table or
- automatically by transferring the birds to another line

Advantages

- Iabor savings,
- ø better hygiene
- a more even rigor mortis process



- removal of edible and inedible viscera
- manually
- semi-automatically
- fully automatically



Evisceration





- has three basic objectives;
- i) The body cavity is opened by making a cut from the posterior tip of the breastbone to the cloaca (anus)
- ii) The viscera (primarily the gastrointestinal tract and associated organs, reproductive track, heart, and lungs) is scooped out and;
- iii) The edible viscera or 'giblets' (heart, liver and gizzard) are harvested from the extracted viscera, trimmed of adhering tissues, and washed with water.





(a) Vent-Cutter Gun Operated by Plant Personnel, (b to g) Automated Vent Cutting, Showing (b) Positioning of the Carcass, (c) Pulling the Cloaca, (d) Positioning the Carcass Prior to Evisceration, (e) Inserting the Drawing Arm, (f) Opening the Drawing Scoop, (g) Pulling Out the Viscera Pack







- To minimize microbial growth
 - Temperature -6° 1°
 - Takes longer: 2 hours
- More expensive equipment, space, utilities
- Less water
- The most common methods include;
- 1) water-immersion chilling,
- 2) air chilling and

3) spray chilling (which includes air and water).



AIR CHILLING

- large rooms of circulating cold (-7 to 2°C) air for 1 to 3 hours.
- 🧷 Cold air
- Depending on the chilling tunnel capacity and volume
- the chilling time and improve the efficiency of the system.
 - Advantages of using air chilling are
- no moisture pickup and



- veighed, graded
- before or after weighing
- not mandatory
- to facilitate sales
- by a qualified person or with the assistance of a computerized machine vision system.





- different ways to cut up a poultry carcass.
- Ø Depending on market demand
- ø be sold as a whole,
- ready-to-cook bird,
- split into two halves,
- separated into different parts (wings, legs) and
- sold with/without skin and bones (e.g., boneless breast).



Hand deboning

Mechanical Deboning



SPLINTER

 FINAL PRODUCT CAN BE CUTTED INTO DESIRED SIZES WITH DIFFERENT EQUIPMENTS BEFORE PACKAGING.

















POULTRY CARCAS,LEG,BREAST,DEBONED

MICROBIOLOGICAL	CHEMICAL
Total Aerobic Mesophilic Count	рН
Staphylococcus aureus	Ammonia
Escherichia Coli	Thiobarbuturic acid (TBA)
Physchrophilic m/o count	
Clostridium perfingens	
Mold	
Salmonella	
Coliform count	



PROPERTIES OF POULTRY PRODUCTS

- 1)POULTRY CARCASS
- 2) PROCESSED POULTRY CARCASS
 - 2.1)Breast
 - 2.2)Thigh
 - 2.3)Wing
 - 2.4)Boneless

CLASSIFICATION OF CHICKEN CARCASS



According to mass and age of the chicken;

- Broiler Chicken Carcass
- Boiled Chicken Carcass
- Adult Chicken Carcass

TYPES

According to cooling process;

- Chilled(fresh)
- Deep- frozen
- Quick frozen

CLASSES

According to features of chicken carcass

- I.Class
- II.Class
- III.Class

CLASSIFICATION OF PROCESSED CHICKEN CARCASS







BREAST

GROUPS

- Chilled(fresh)
- Deep- frozen
- Quick frozen



2.CATEGORIES

- With skin
- Without skin

3.CLASSES

- I. Class
- II. Class
- III. Class

THIGH

1.GROUPS

- Chilled(fresh)
- Deep- frozen
- Quick frozen



2.CATEGORIES

- With skin
- Without skin

3.CLASSES

- I. Class
- II. Class
- III. Class

WINGS

1.GROUPS

- Chilled(fresh)
- Deep- frozen
- Quick frozen



2.CATEGORIES

- With skin
- Without skin

3.CLASSES

- I. Class
- II. Class
- III. Class

BONELESS

- 1.GROUPS
- Chilled(fresh)
- Deep- frozen
- Quick frozen
- 2.CATEGORIES
- Simple(with skin or no skin)
- Coated(with skin or no)

3.CLASSES

- I. Class
- II. Class
- III. Class

PROPERTIES OF CHICKEN MEAT

- Chicken meat is high in protein than other meats, less fat and calories low.
- It contains more than the fatty acid (oleic, linoleic, as palmitic acid).
- Breast meat is 114 kcal, but a thigh meat is 125 kcal.

- Chewable and digestible easly because of shortness of fibers
- Chicken meat is also a good source of B-group vitamins and iron

PROPERTIES OF BY CHICHEN PRODUCTS

CHICKEN BY PRODUCTS

- Chicken Liver
- Chicken Gizzard
- Chicken Meal
- Chicken Foot

PROPERTIES OF CHICKEN

NUTRITIONS	VALUES
Calories	196 kj
Proteins	9.2 g
Carbohydrates	0.4 g
Fats&Fatty Acids	1.5 g
Cholesterol	0.024 g
Ash	0.3 g
Water	18.8 g

Chicken Meal

- Rendered product from poultry wastes such as;
- head, feet, intestines, blood and inedible tissues
- Hatchery wastes could be included.

PROPERTIES OF CHICKEN MEAL

- Protein content is dependent on the rate of feature in the mixture 55-65%,
- 12-21% ash content, crude fat content varies between 14-30%.
- Calcium from mineral substances is found around 1.8-3.2% and phosphate 1.5-8.5%.
- Lysine content of about 2.6%, methionine content is around 1.1%.