

Chapter-5

Meat Cookery

Learning Objectives:

After Completing this chapter the students would be able to:

- a) introduce meat cookery
- b) explain the slaughtering of meat
- c) list the cuts of poultry/lamb/mutton
- d) state the selection of meat products
- e) describe the variety of meat (offals)

I. INTRODUCTION:

Meat is mostly the muscle tissue of an animal. Most animal muscle is roughly 75% water, 20% protein, 5% fat, carbohydrate and assorted proteins. Muscles are made of bundles of sheath called fibers. Each sheath is creamed with filaments made of two proteins i.e. actin and myosin. In animals these proteins make muscles contract and relax.

Meat and other animal food are better source of protein than vegetable food in terms of both quantity and quality. In meat, the excessive amino acids (the organic acids that are integral components of protein) cannot be synthesized in the human organism, are made available in well balanced proportion and concentration. Plant food does not have vitamin B12. Animal food in particular meat, is rich in iron, which is of utmost importance to prevent anemia, especially in children and pregnant women. Meats which are from livestock are derived from 3 species of animals.

1. Bovine (ox or cow)
2. Ovine (Sheep)
3. Porcine (swine)

These animals are different in shape, size and taste.

The composition of meat, whether from calf, sheep, lamb or swine has both





physical and chemical characteristics. The physical characteristics include muscle tissues and fibrous connective tissues, adipose tissue and bone tissue. The chemical characteristics consist of water, protein, fat, carbohydrate, minerals and vitamins.

Animal muscles are divided into 3 types: skeletal, cardiac and visceral. The skeletal muscle makes up most of the muscle weight on a carcass. The skeletal muscles are the greatest concern for culinarians. The muscles are inter of twined with fibrous connective tissues and fat. As a well fed animal ages, its fat concentration increases. The amount of fat in the carcass is affected by the feeding and handling of the animal.

Marbling affects the juiciness, flavor and to a lesser extent, tenderness of prepared meat. This type of fat lies between the muscle fibres. Protein content in meat is generally grouped into collagen and elastin. Collagen is the protein found in greatest quantity in animal composing up to 20-25% of an animal total protein. Collagen provides strength and support. It also plays a part in the tenderness of the meat. It is readily broken down in cooking with moist heat. Elastin does not breakdown when exposed to moist heat, often referred to as the yellow connective tissue. Elastin must be removed when the meat is cut. Myoglobin provides the meat colour. The amount of myoglobin present and the amount of exposures to oxygen together induce the bright red colour of the meat when butchered. Humans digest 80-90% of meat proteins. All essential amino acids necessary for the growth and maintenance of the human body are contained in a correct combination in all animal proteins. Fat contributes flavour to the meat. Meat is a rich source of zinc, iron, calcium and vitamin B.

II A) SLAUGHTERING OF MEAT

Animals should be kept as clean as possible at slaughter houses. Fasting before slaughter reduces the chances of infection by bacteria and the risk of contamination of the carcass during dressing. Stock should have a rest period after arrival at the slaughter house.

- 1) **Stunning and bleeding:** The animals are rendered unconscious (stunned) by a human method prior to bleeding. stunning also makes slicing (throat slitting) less hazardous. The animals must be unconscious long enough for slicing to be carried out and for brain death to result from the lack of blood supply. Stunning can be done by direct blow to skull, slaughtering mask, free bullet, electrical stunning.
- 2) **Bleeding After Stunning:** The objectives of bleeding are to kill the animal with

minimal damage to the carcass and to quickly remove as much as blood as possible, as blood is an ideal medium for the growth of bacteria.

- 3) Sticking: Sticking is usually done by professionals with a knife and it should be done soon after stunning, when the rate of heartbeat and the blood pressure are high, this assists bleeding.
- 4) Flaying and Cleaning: The animals are hung on hooks with their head downwards to drain out the blood in the carcass. Air is blown to loosen the skin from the flesh and then the skin is removed. The internal organs such as the stomach, intestine and offals are removed and sent to their respective sections for further processing. The carcasses split into hindquarters and forequarters and sent to the butchery section.

B) Cuts of Mutton/Lamb

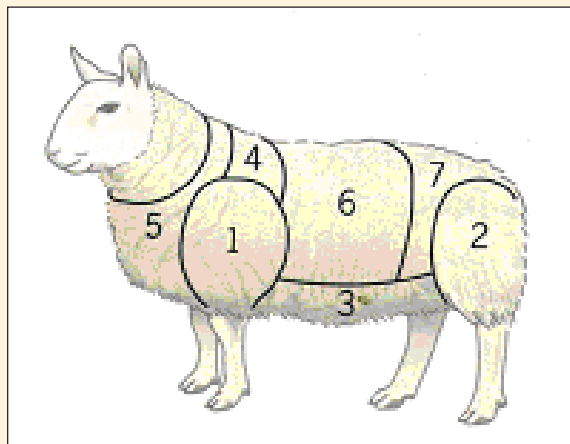


fig. (1)

(1) Shoulder; (2) Leg (two); (3) Breast (two); (4) Middle neck; (5) Scrag end; (6) Best wind rack; (7) Saddle

Table 1: Joints, uses and weights

Joint	Uses	Approximate weight	
		lamb kg	Mutton kg
whole carcass		16	25
(1) shoulder (two)	roasting, stewing	3	4½
(2) leg (two)	roasting (mutton boiled)	3½	5½





(3) breast (two)	roasting, stewing	1½	2½
(4) middle neck	stewing	2	3
(5) scrag end	stewing, broth	½	1
(6) best-end rack (two)	roasting, grilling, frying	2	3
(7) saddle	roasting, grilling, frying	3½	5½
kidneys	grilling, sauté		
heart	braising		
liver	frying		
sweetbreads	braising, frying		
tongue	braising, boiling		

C) Selection of Mutton

- 1) The animal age should be between one to three years and should be tender and of good flavour.
- 2) The flesh is darbee than lamb.
- 3) The fat is white and brittle.

D) Selection Factors of Lamb

- 1) The flesh should be light red in colour and finely grained.
- 2) The fat in lamb should be white or creamy white in colour.
- 3) The bone should be soft and porous.
- 4) The flesh should be evenly fleshed with an even coating of fat.

III. Poultry and Game

All domestic birds prepared in today's kitchen are termed as Poultry. This includes chicken, turkey, ducks, goose, guinea fowl, hen and domestic pigeon (squab). The physical and chemical composition of poultry is similar to that of meats. Poultry has little pigmentation. The word 'game' for culinary purposes means birds and animals hunted for food.

Games can be divided into two types, these are: feathered or furred. The meat of game is generally darker, strong tasting and often tougher than meat from domesticated animals and birds.

Being small and easy to keep Hens have been domesticated for thousands of years, as their size and survival needs are easily manageable. Chicken is an excellent,

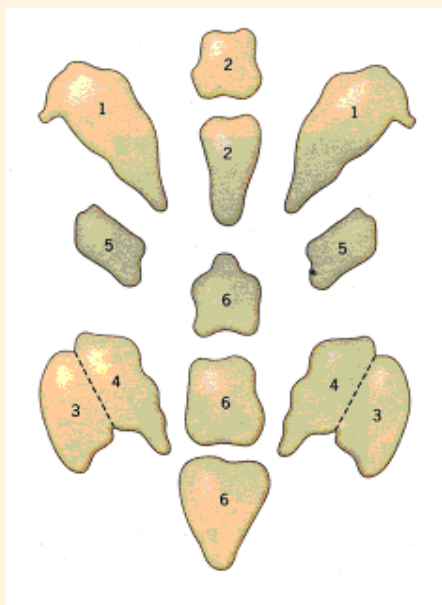
source of protein and contains most of the B vitamin. It is also low in saturated fat. Standard chicken are reared in purpose built chicken houses, where they are free to move around and have constant access to food and water.

(A) CUTS OF CHICKEN

Before cutting the chicken should have two legs that should be attached to the body. There is a breast and two wings.

Cutting the chicken should give two legs, two thighs, two breasts and two wings.

Basic method for cutting up and disjuncting a whole chicken is shown below.



- (4) Drumstick
- (3) Thigh
- (1) Wing
- (2) Breast
- (5) Winglet
- (6) Carcass

(B) Separate the legs from the body

- 1) Cut through a little bit of skin on the side.
- 2) Just bend the leg back till the thigh bone pops out.
- 3) Cut straight down that line.
- 4) Leg should come off.
- 5) Repeat the same thing on the second side.
- 6) Remove the leg out and slice right down.
- 7) Two legs are now removed.





(C) Separating the Wings

- 1) To separate the wings make one cut where the wing joins the breast, clear that skin, and again, check the joint.
- 2) Find where the two connect and separate it.
- 3) Repeat on the other side of the breast again, and through the skin.
- 4) Make one cut and separate the wing.



(D) Separating the Thigh and Leg

- 1) To separate the thigh and the leg pull the skin back and find a little line of fat, where the thigh meets the leg.
- 2) Position knife on top of that line and just slide through.
- 3) It should be to separate the leg and the thigh.
- 4) Repeat again on the other side by finding the little line of fat and slice straight through.



(E) Cut Carcass in Half

- 1) Cut through the cavity of the bird from the tail end.
- 2) Slice through the thin area around the shoulder joint.
- 3) Cut parallel to the backbone and slice the bones of the rib cage.
- 4) Repeat on the opposite side of the back bone.



(F) Removing the Breasts

- Pull apart the breast and the back.
- Cut down through the shoulder bones to detach the breast from the back.
- Cut the back into two pieces by cutting across the backbone where the ribs end.



(G) Cut Breast in Half

- To cut the breast in half, use a strong, steady pressure.
- Cut downward along the length of the breastbone to separate the breast into two pieces.
- The chicken is cut into eight pieces and is ready to cook.

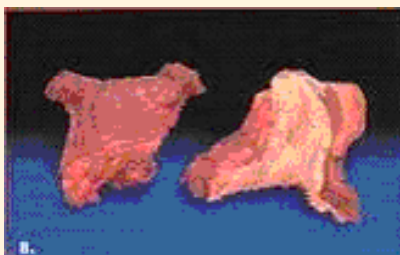


IV. Selection factors of chicken

- 1) The breast should be Plumb and firm.
- 2) The end of the breast bone should be pliable.
- 3) The flesh should be firm.
- 4) There should be no foul odour.
- 5) The skin should be clean without any cuts, blenishes or bruises.

IV. Offals (Variety Meats)

These are known as variety meats which are from the off cuts from the carcass including the edible internal organs, tail, feet and head. It usually means liver, kidneys, sweet breads, tripe and heart. Even when the nutritive value depends on the type of offal, generally it is a good source of animal protein. Liver and kidneys are specially rich source of iron, vitamin-A and vitamin-B complex (also vitamins including folic acid).





VARIETY OF OFFALS

(i) Liver

This has a fine close texture and a pronounced flavor. Calf's (veal) liver has finest texture and lightest flavor. Lambs liver also has a mild flavor. Pigs liver and ox liver are strong in flavor and they have a coarser texture. Chicken, turkey and duck livers are similar to each other in size, flavour and texture. They are significantly lighter in flavour, fine textured and rich in nutrition. They are more versatile than the other types of liver. In comparison, Goose liver is larger and paler in colour.



(ii) Kidney

All kidneys have a distinctive taste. Lamb kidneys are small, tender and comparatively delicate in flavour. Veal kidneys are also very tender. Ox kidney is strongly flavoured and firm in texture. Pig's kidney is also strongly flavoured.



Tongue

Ox tongue is solid, fresh or cured in brine. Veal tongue is popular in France.

(iii) Tail

Ox tail is usually chopped into chunks. Ox tail has a good flavour and is good in soups, stews and terrines.

(iv) Bone Marrow

Found in hollow bones, this is a pale, fatty substance that has full flavour. When poached, the marrow can be scooped out and used to enrich soups, stews, sauces and risottos. It is also served hot as a spread for bread or toast, or as a topping for canapés.

(v) Trotters and Feet

Pig's trotters (feet) and calf's feet can be bought whole or split in half. They can also be used to enrich stews.

(vi) Tripe

This comes from stomach of a cow. Tripe from the first stomach (the rumen) is plain in texture, but that from the second stomach (the reticulum) has the typical honey comb texture. It is easily digestible and nutritious. Tripe has a distinctive flavour not strong but pronounced and able to dominate even spicy sauces.

(vii) Sweet breads

Sweet breads are the thymus glands taken from the neck and heart of young animals such as calves and lambs. They are pale and delicate with a tender meaty texture when braised or boiled.

(viii) Heart

Lamb's heart is the most tender and lightest in flavour. Pig's heart is larger and slightly coarser. Beef or ox heart is big, but not very tender.

(ix) Brain

Lamb and veal brain are pale pink and delicate.

Meat has the right amount of nutrient required by the human body. The three main sources which give the meat richness are beef, pork and mutton. The smaller variety of meat is poultry and game.

Let us Revise :-

1. Stunning : the animal is rendered unconscious prior to bleeding :
2. Offals : The edible internal organ of the carcass which is served as a delicacy.
3. Trotters : Lamb, Calf feet can be bought whole or split they can be used to chicken Stews.

● Review Questions :-

Give short answers for the following :

- (i) Give the important factors to select mutton/lamb.
- (2) List the selection factors to be kept in mind while buying chicken for meat of chicken.
- (3) List the cuts of Chicken.

Explain in detail

- 1 Define offals Explain five varieties of offals.
2. Draw the diagram of, lamb and name its parts.

