

POULTRY

THE TERM POULTRY IS APPLIED TO ALL DOMESTICATED BIRDS AS FOOD AND INCLUDES CHICKENS, DUCKS, GEESE, TURKEYS AND PIGEONS. OF THESE, CHICKEN AND TURKEY ARE THE MOST COMMONLY USED FOR THEIR MEAT.





COMPOSITION OF POULTRY

- ◉ The gross poultry meat composition includes water, protein, fat, calcium, phosphorus, iron, copper and other components important to eating quality. Poultry meat has high content of protein around 21 per cent, fat 4.5 per cent. There is less fat on the meat of young chicken compared to aged chicken and hen. Fat content is influenced by feed, breed and species of poultry. In case of chicken the fat is cutaneous, that is under the skin. Chicken cooked with skin is moist, succulent and flavoured due to fat. Skin may be removed before cooking for people who have been advised for low fat diet. Chicken meat has light meat on breast and wings and dark meat on legs. Light meats have comparatively less fat in breast and wing compared to dark meat (leg meat).

I) MOISTURE:

- ◎ The moisture content of meat from broiler, roaster and hen are 71 % to 74%, 66% and 56% respectively. The turkey meat is high in nutritive value and low in calories compared to chicken. In general, younger birds have higher moisture to skeletal muscle ratio as compared to other ones. **The fat content of meat is inversely proportional to the moisture content.**

2) PROTEIN:

- Poultry meat is highly rich in protein and regarded as a concentrated source of high quality protein. It is higher in protein content as compared to red meats. Cooked poultry meat contains 25-30 per cent protein depending upon the part of the carcass. Proteins of poultry meat are classified under first class category because these contain all the essential amino acids in balanced proportion. As in all meats, - - poultry meat is limited by sulphur containing amino acids. Different cuts of meat vary in their digestibility due to different proportions of connective tissue. Muscle fibers are supported in body by connective tissue collagen, elastin and reticulin fibers which are fibrous tissue.

3) FAT:

- ◉ The fat is deposited around certain organs and under the skin and later marbling with muscle. Unlike red meats, most fat in poultry meat is deposited under the skin. Dietary fat influences body fat of chicken. High energy feed is required by broilers for fast growth. Diet includes animal fat and fat from oil seeds cake component of feed. Broiler has less fat than roaster and hen. The fat content of poultry meat also depends upon the part of the carcass (dead body of an animal). According to Scott (1956) the cooked turkey skin contains 33.8% fat and breast meat contains 6.7-8.3% fat. Cooked chicken meat contains only 1.3% fat. Poultry meat contains a higher proportion of unsaturated fatty acids than the fats from red meats. The proportion of desirable essential unsaturated fatty acids i.e. linoleic acid is more than 60% of the total fat.

- ◎ 4) Carbohydrate: Small quantity of carbohydrate in meat provides texture and eating quality. Conversion of glycogen to lactic acid during post-mortem aging determine the pH of the meat and influence water holding capacity, firmness and colour.
- 5) Vitamins: Poultry meat is a good source of many vitamins, such as niacin, thiamin (vit B₁), riboflavin (vit B₂) and ascorbic acid (vit C). Poultry liver is a rich source of vit A, vit B complex, vit C.

6) MINERALS:

- Poultry meat constitutes nearly 1 % of essential minerals like iron, copper, zinc and selenium in significant amounts.

CLASSIFICATION

- ◎ BROILER OR FRYER:- chicken of 8 to 10 weeks of age either sex, having tender meat with pliable bones, textured skin and flexible breastbone cartilage.
- ◎ ROOSTER:- chicken usually young , of 3 to 5 months old , of either sex , having tender meat , pliable smooth textured skin and breastbone cartilage that may be somewhat less flexible than that of the broiler or fryer.

CLASSIFICATION

- ◉ **STAG:-** a male chicken, usually under 10 months of age with coarse skin , somewhat toughened and darkened flesh and a considerable hardening of the breastbone cartilage.
- ◉ **STEWING CHICKEN OR FOWL :-** a mature chicken, usually more than 10 months of age , with less tender meat than that of rooster and inflexible breastbone tip.

CLASSIFICATION

- ◎ COCK:- a mature male chicken, usually over 10 months of age, with coarse skin, toughened meat and hardened breastbone tip.

SELECTION OF POULTRY

- ◉ When purchasing poultry you should pay special attention to the origin of meat, expiry date and the recommended storage temperature.

- ◉ **Healthy and fresh:-**

The poultry we have on our plates should be healthy, fresh, of good quality and processed in the proper way. Therefore it is important to already be cautious when buying it. When buying food pay attention to its origin and choose the products with top quality and “varuje zdravje” labels. The producer has to guarantee that the food you consume is truly healthy and pristine.

◎ Look and smell :-

In order to enjoy a delicious poultry meal, you should first inspect the product thoroughly before buying it. Poultry needs to be pink or light red in colour, not too pale, as this would indicate that the meat has been on the shelf too long. The meat also has to look elastic and full. When buying fresh meat it is advisable to smell it. In case you detect an unpleasant smell you should choose a different piece or not buy it at all. When buying packed meat, make sure the packaging is intact.

◎ **Know your poulterer:-**

- ◎ It is important to know who you are buying the meat from. Purchases from private poultry farmers and on markets are most risky since the hygiene standards there are often not considered adequately and the meat origin is not always clear. Buying from shops is not absolutely safe either if the seller does not meet all the hygiene standards and guidelines. Especially regarding chicken. All chickens bred by Perutnina Ptuj breeders are fed with all-natural poultry feed, mostly consisting of corn, soya, wheat, minerals and vitamins. Therefore we can say: A healthy chicken for a healthy meal. A healthy meal for a healthy body.
- ◎ Buy fresh

◎ Buy fresh :-

- ◎ In the summer months it is advisable to buy truly fresh meat in smaller quantities, as you cannot refreeze raw meat after you have thawed it. Moreover, in the summer the quality and health of the purchased meat can already be compromised on your way home when the meat can thaw in the summer heat. It is advisable to store frozen meat in the home refrigerator or freezer within 30 minutes after the purchase, making sure it has not been exposed to high temperatures in the meantime. We suggest you use an insulated cooler bag. The meat should be stored in the refrigerator for no more than two days. Check the label on the packed meat; the label on the frozen meat has to state frozen meat and the label on the fresh meat has to state fresh meat. This is important so as to prevent the seller from selling you thawed frozen poultry meat as fresh.

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◎ **Read the packaging labels :-**

- ◎ When buying poultry, or any other food, you should read the labels on the packaging carefully. In the care for its consumers, the European Union has specified the information every producer has to put on the packaging. The information about the expiry date is required by law therefore do not buy meat where the expiry date is not stated. Refrain also from buying packed poultry where the expiry date is illegible. Also check the information regarding the producer or importer, the composition of packaging, the mass, the series and the origin. Health-conscious consumers also pay attention to the list of additives used in the meat preparation

◎ **Information on origin :-**

- ◎ Information on the origin and the meat processing manner have become increasingly important in recent years, as consumers want to know where and how the poultry is bred and the meat processed. More and more people buy the meat with top quality labels, veterinary labels, labels of geographic origin or the “Varuje zdravje” label. The European Union has made the way to a high quality meat easier, as the meat with the EU origin carries standardised labels awarded only to products meeting the required standards.

PRESERVATION AND STORAGE OF POULTRY

- ⦿ Poultry can be preserved by canning , chilling and freezing.
- ⦿ **1.Canning-** In canning, the poultry meat is cooked and filled in the can along with the gravy. The can is placed in a vacuum chamber where the final operation of double steaming is completed. It is transferred to heat sterilized cans at 100 degree Celsius for 30 mints , double steamed and sterilized by cooking in steam under 14lbs pressure at 121 degree Celsius for 60 mints.

◎ **2. *Dehydration***- The poultry meat is cut into pieces and cooked in steam for 30 mins at 10lbs pressure. The cooked meat is passed through meat chopper and the chopped meat dried in a continuous drier. The temperature of incoming air is 65-71.1 degree Celsius and drying taking about 3 hrs. The moisture content of dried meat is about 4-5%. The dried meat is compressed and packed in cans.

◎ **3. *Chilling***- It serves the purpose to protect the meat from spoilage for only a short period. Poultry can be chilled with cold air or by direct contact with ice or ice water and held at 3 degree Celsius , keep well for about 9 days.

◎ **4. Freezing** - Chicken is wrapped in a moisture proof film and is quick frozen. Small poultry such as chicken may be placed in a waxed carton before freezing. If the skin of the poultry dries out unevenly , it discolors and mottles ,disfiguring the frozen bird. The condition is commonly called as “freezing burn”.

◎ **5. Storage** - All poultry is perishable and it is a source of salmonella bacteria , which occurs in the intestinal tract. Fresh chilled poultry should be stored loosely wrapped in the refrigerator at 3 degree Celsius or lower and should be used within 1-2 days.

- Special care and cleanliness is important in handling uncooked poultry to prevent possible cross contamination to other foods.
- Hand utensils and work surfaces in contact with fresh poultry should be thoroughly washed and sanitized after the contact.
- Poultry leftovers should be refrigerated immediately and stored not longer than 1-2 days.



Poultry cookery

- Raw chicken has a little or no flavor, it develops during cooking. The changes that takes place during the cooking of poultry are similar to those of other meats.
- The cooking method is selected on the basis of tenderness of poultry and fat content , both influenced mainly by the age of the bird.
- Moist heat methods are applied to older and tougher birds in order to make them tender and palatable.
- Dry heat methods are applied to young tender birds.

◎ **Broiling-** For broiling the birds placed in the broiler with the skin side down. The whole bird or halves may be broiled. Because of the low fat content of the young birds, basting with melted fat will improve the flavor, palatability and appearance of the preparation.

◎ **Frying-** It is particularly suitable for cooking low fat , young , tender poultry and more frequently used than broiling. The halves of the birds are frequently fried. Before frying they are coated with seasoned flour or beaten eggs and bread crumbs. They are then carefully cooked to prevent over-browning before the meat is tender.

◎ ***Roasting***- Poultry may be roasted , stuffed or unstuffed. When the whole bird is roasted, tender parts such as the breast , may be over cooked before the legs and thighs are coked to get a desired taste. For stuffed birds, it should be continue till the internal temperature of the stuffing reaches 74 degree Celsius. When it roasted without stuffing, it is cooked at an oven temperature of 163 degree till the internal temperature of the thigh muscle reaches 85 degree.

Anti-Nutritional factors of Poultry

- ◉ Compounds that interfere with the intake, availability, or metabolism of nutrients in the animal are referred to as anti-nutritional factors. Their biological effects can range from a mild reduction in animal performance to death, even at relatively small intakes. The subject is complicated by the fact that different species and ages react in different ways to the presence of anti-nutritional factors.
- ◉ The most important anti-nutritional factors to monogastric animals are:

- ◎ **1. Protease inhibitors:** Protease inhibitors can inhibit the activity of proteolytic enzymes and can cause a decrease in digestive efficiency, inadequacy in dietary sulfur amino acids. As a consequence of inhibition of proteolytic enzymes the animals tend to react to the presence of protease inhibitors by secreting more digestive enzymes, which results in pancreatic hypertrophy. In poultry and swine, trypsin inhibitors significantly reduce the digestibility and utilization of amino acids. At least five trypsin inhibitors have been identified.

- ◎ **2.Lectins:** These are glycoproteins noted for their capability to agglutinate erythrocytes and bind sugar components. Lectin content in beans ranges from one to three percent. Lectins are not broken down in the gut, attach to mucosa cells damaging the intestinal wall and reducing the absorption of nutrients. Heat treatment is very effective and necessary in the inactivation of lectins.
- ◎ **3.Saponins:** Although they appear in low levels they can decrease feed palatability.

- ◎ **5.Rachitogenic factors:** These factors are associated principally with genistein (about 0.10% of raw soybeans) which interfere with calcification of bone. Turkeys are particularly sensitive.
- ◎ **6.Phytic acid:** Phytic acid complexes with certain minerals - such as calcium, phosphorus, magnesium, copper, iron and zinc - reducing their bioavailability