

Meat Composition

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A vegetable diet, compared with a meat diet, is usually incomplete in essential amino acids; the vegetable proteins are less easily-digested and remain in the stomach for a shorter period than meat protein, with the

Table of composition

	% net weight
Water	75.0
Protein	19.0
Lipids (fats and oils)	2.5
Carbohydrates (glycogen)	1.2
Non-protein nitrogen	1.65

result that hunger recurs more rapidly. The approximate composition of lean bovine muscle (immediately after onset of rigor mortis) is given in the following table

1. (Protein:

Protein is the most important muscle constituent and is made up of myofibrillar, sarcoplasmic and connective tissue proteins. Myofibrillar protein gives rigidity to the muscle

and forms about 10% of the total protein, the most important type being myosin and actin.

muscular proteins are the water-soluble proteins of the fluid cytoplasm of the muscle cells and include myoglobin muscle pigment, haemoglobin blood

pigments and soluble glycolytic enzymes. Connective tissue proteins, along with the bony segments of the body, form its supporting mechanism. They include collagen, which is insolub

le in water and salt and can be converted into gelatin on heating; elastin, a tough yellow connective tissue; and reticulin, another form of connective tissue not converted to gelatin on heating.

2. Lipids:

The lipids are mostly composed of triglycerides, which are fats and oils, both of which are insoluble in water but soluble in ethyl ether. The lipids also include phospholipids, saturated, monounsaturated and Polyunsaturated fatty acids and other fat soluble substances, including cholesterol, the level of the latter in carcass meat being relatively low, although much higher in liver. Marked differences in intramuscular lipid levels occur in the different species of meat animals. The quantity of fat in all meat animals is very much lower than it used to be, because fat is an expensive tissue to produce and is not desired by the consumer. Differences in breed, sex, age and level of nutrition also vary the fat content in meat.

3. Carbohydrate:

Carbohydrate is present mainly as glycogen (animal starch), which has a major influence on muscle changes after death. Glycogen also occurs in the liver and is especially abundant in horse meat and in the fetus. Its level in the animal body does not vary as much as does fat, although older animals in general have lower reserves of glycogen.

4. Non-protein nitrogen:

Non-protein nitrogen is mainly represented by free amino acids, creatine, nucleotides, inosine monophosphate and carnosine (a dipeptide), some of which, notably the free amino acids and nucleotides, give meat its flavour on cooking.