

International Perspectives

How meat is defined in the European Union and in Germany



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Implications

- Within the European Union, *meat* is, in principle, considered as skeletal muscle deriving from specified animal species, which may include edible offal and blood; the term meat does not include fish and seafood.
- The meat definition becomes more restricted along the meat-processing chain.
- Whereas the meat definition for hygiene purposes comprises all edible parts of the slaughtered animals, for processing aims, meat is restricted to skeletal muscle tissue accompanied by other tissues.
- For declaration purposes, the definition is further narrowed, because threshold values are created for the contained fat and connective tissues.

Key words: definition, European Union, Germany, guidelines, meat, regulations

Within the European Union (EU) and Germany, the term *meat* is defined and described in a very detailed manner in different regulations and guidelines. Due to the fact that all institutions and organizations representing the different groups of the public society, such as consumers, manufacturers and surveillance authorities, scientists and health professionals, etc., had been involved in compiling the content of the regulations and guidelines, the given definition(s) for meat are accepted by all of them, and they are effectual to all of them.

Member states of the EU have to implement European food law. Thus, all regulations and guidelines comply with those enacted by the European Parliament and the European Council. National legal rules may be established only for sectors not regulated by the EU.

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Generally, the meat definition becomes more restricted along the meat-processing chain. Whereas the meat definition for hygiene purposes comprises all edible parts of the slaughtered animals, for processing aims meat is restricted to skeletal muscle tissue accompanied by other tissues. For declaration purposes, the definition is further narrowed because threshold values are created for the contained fat and connective tissues.

Definition of Meat in the European Food Hygiene Law

The most comprehensive meat definition is given in the European meat hygiene law. Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 Apr. 2004 laying down specific hygiene rules for food of animal origin (European Parliament and the Council Regulation of the European Union, 2004) lists in Annex I numerous definitions in connection with the term “meat”:

Among all definitions, the meat definition according to Point 1 is the most extensive one because *all edible parts* of the animals specified in the following paragraph –*including blood*– are enclosed. Animal species include *domestic ungulates*, in particular domestic bovine (cattle), porcine (pigs), ovine (sheep) and caprine (goats) animals, and domestic solipeds (horses), too. Also poultry is included, which means farmed birds, independent of the fact that they are not considered as domestic animals; ratites are excluded. Furthermore, lagomorphs such as rabbits, hares, and rodents as well as wild and farmed game are listed. The term *wild game* includes wild ungulates, lagomorphs, other land mammals, and wild birds that are hunted for human consumption. The prerequisite is that they are considered as wild game according to the national hunting law of the individual member state. Small and large wild game are differentiated, basically including wild game birds as well as lagomorphs and wild land mammals, respectively, living freely in the wild. Mammals living in enclosed territory under conditions of freedom similar to those of wild game are also regarded as wild. Farmed



game in contrast, includes only farmed ratites and farmed land mammals that are not embraced by the term *domestic ungulates*.

Apart from this, Regulation (EC) 853/2004 describes a number of other terms related to meat. A basic classification is the classification according to the product's hygienic susceptibility. Untreated meat in terms of preservation, except for chilling, freezing or quick-freezing, is called *fresh meat*. Vacuum-wrapping or wrapping in a controlled atmosphere package is allowed. If foodstuffs, seasonings, or additives are added to fresh meat, or the processing treatments have been improper to modify the internal muscle fiber structure, the *meat preparation* definition is fulfilled. It is important that the characteristics of fresh meat are still present. If the processing intensity is to such an extent that the cut surface of the product shows that the product has no longer the characteristics of fresh meat, this product complies with the definition of a *meat product*. This grouping (fresh meat, meat preparation, and meat product) forms the classification basis for several other legal norms as the regulation on food additives (European Parliament and the Council Regulation of the European Union, 2008) or regulation establishing a common organization of the markets in agricultural products (European Parliament and the Council Regulation of the European Union, 2013).

Additionally, some other definitions originate from Annex I of the regulation mentioned above. *Minced meat* is considered as boned meat minced into fragments and containing less than 1% salt whereas *mechanically separated meat* (or MSM) means the product obtained by removing meat from flesh-bearing bones after boning or from poultry carcasses, using mechanical means resulting in the loss or modification of the muscle fiber structure. *Offal* means fresh meat other than that of the carcass, including viscera and blood, and *Viscera* stand for the organs of the thoracic, abdominal and pelvic cavities, for the trachea and esophagus, and the crop of birds.

Definition of Meat as Raw Material for Manufacturing Processes

Compared with the meat definition in hygiene law, the one for the description of raw material for manufacturing processes is much more limited. Because the consumer habits and expectations differ within the EU member states, raw material descriptions and customary usage in the meat trade are described on a national basis. In Germany, guidelines for meat and processed meats (Leitsätze für Fleisch und Fleischerzeugnisse, 2015) are part of the "Deutsche Lebensmittelbuch" (German Food Book), which is a collection of guidelines describing the manufacture, composition, and the characteristic properties of food. It is neither a legal norm nor a regulation or act but gives orientation in terms of how to trade and label food, comparable to an objectified expert opinion. They are preferentially applied for legal clearance of the question whether a practice is misleading as defined by the regulations of the food law. It should be mentioned that the "Deutsche Lebensmittelbuch" is based on the Austrian "Codex Alimentarius Austriacus" published in 1891.

Within the "Deutsche Lebensmittelbuch-Kommission" (German Food Book Commission), there are food specific expert committees working out the details of the guidelines, taking into account the European food law as well as international food standards such as the FAO "Codex Alimentarius." Commissioners are representatives of different stakeholders within the food area: scientists, trade and manufacturer associations, consumer groups, surveillance authorities, Federal Ministry of Food and Agriculture, etc. The latter is also publishing the guidelines agreed on.

The general meat definition according to Chapter I resembles that of the hygiene law: Meat is "... all parts and cuts of slaughtered or shot/hunted hematothermic animals that are regarded as fit for human consumption." However, for the commercial manufacture of processed meats, meat only means skeletal muscles with adherent or imbedded fat and connective tissue as well as lymph nodes, nerves, vessels, and pork salivary glands. Phrenic and chewing muscles are included. Partly, meat may contain a distinct portion of bones and cartilages, if the products are usually prepared in the consumer household (e.g., chops) and if meat products are processed from whole muscles (e.g., bone-in ham). Rind may be part of *pork meat* for cuts from the hind leg, from shoulder, breast and belly, and back fat.

Apart from these general settings, the Guidelines (Leitsätze für Fleisch und Fleischerzeugnisse, 2015) characterize in detail meat raw material used for the manufacture of processed meat products in terms of the content of fat and connective tissue.

Beef meat (including veal and "rosè" veal) is categorized into "beef with low level of sinews and fat," meaning the skeletal muscle from cattle naturally containing low amounts of connective and fat tissue (e.g., topside) or accordingly trimmed cuts, such as shoulder clod with sinews trimmed off; "beef with sinews roughly trimmed off"; and "beef rich in sinews" where the sinew portion is not as high as with pure shank meat and chewing muscles.

Pork meat is differentiated into "pork with low level of sinews and fat," which is skeletal muscle from pigs naturally containing low amounts of connective and fat tissue or accordingly trimmed cuts; "pork with fat roughly trimmed off" obtained from slightly fat carcasses where jowls, neck, back, and belly fat as well as leaf fat have been removed; and "pork with high level of fat" similar to slightly fat streaky bacon.

With regard to *poultry meat*, the following categories are defined: "Poultry meat with low ratios of sinews and fat," which is skeletal muscle without skin, e.g., breast file; "poultry meat with sinews roughly trimmed off"; and "poultry meat rich in sinews," which describes poultry meat with skin where the amount of connective tissue is higher than that of meat with roughly trimmed off sinews.

The categories "pure connective tissue" and "pure fat tissue" are described separately. *Fat tissue* is a tissue mainly consisting of fat, which has been removed from meat, and that is derived from visceral cavities, respectively. It does not include snowball fat and ruffle fat. Furthermore, *leaf fat* (also known as pork flare fat) is defined; and *speck* meaning subcutaneous,

Table 1. Maximum values of fat and connective tissue for ingredients which are labeled "... meat" (Leitsätze für Fleisch und Fleischerzeugnisse, 2015).

Species	Fat (%)	Ratio collagen/muscle protein†
Mammals (except for rabbits and pigs) and blends of species where mammals predominate	25	25
Pigs	30	25
Birds and rabbits	15	10

† The ratio collagen/muscle protein corresponds to the percentage of collagen contained in the muscle protein. The collagen content is calculated as the content of hydroxyproline multiplied with factor 8.

mainly rindless fat tissue with residues of skeletal muscle, primarily back fat. Fat from jowl includes imbedded salivary glands; streaky bacon includes pectoral and abdominal muscles and non-lactating mammary glands. *Beef fat* describes fat where depots within visceral cavities are excluded.

Furthermore, definitions regarding fat, connective tissue, sinews, rind (skin), greaves, and gelatin are given. There are also detailed descriptions explaining the meaning of knuckle of pork (Eisbein), pig's head, blood, blood plasma, blood serum, and offal.

The Guideline (Leitsätze für Fleisch und Fleischerzeugnisse, 2015) also contains a list of parts of animal carcasses that must not be used for processed meat products. Heart, tongue, head muscles (except for the chewing muscles), and muscles of the carpal and tarsal joints and of the tail are *not* considered as meat. The same is true for the hide of ruminants, paddywhack (nuchal ligament) and big vessel truncus of cattle, bones and cartilages (as far as they are not part of a meat product), intestines, bladder including urethra, ruffle and ruffle fat, brain, bovine spleen, spinal cord, fibrin separated from blood as well as the red cell blood fraction as a by-product of blood plasma manufacturing. Also fat within bones, mucosa, testes and comb, wattle, ears, and caruncles of poultry did not fulfill the meat definition. In accordance with the EU food labeling law (see below), also "*mechanically separated meat*," as defined by Regulation (EC) No. 853/2004 is not regarded as "meat." Thus, products described and listed in the guidelines must not contain this type of raw material.

Definition of Meat for Declaration Purposes

With respect to the declaration of meat containing end products, the meat definition is still more focused on the skeletal muscle component. Although the EU regulation on the provision of food information to consumers [Regulation (EU) No. 1169/2011] refers to the meat definitions of the EU food hygiene law [Regulation (EC) No 853/2004], Annex VII Part B of the food information regulation provides some maximum fat and connective tissue contents for ingredients designated by the term "... meat." Additionally, the category name "... meat," has to be amended by the name of the animal species from which it originates. Both requirements, threshold values, and animal species declaration were also incorporated into the national guidelines for meat and processed meats (see Table 1). In cases where the maximum values will be exceeded, a change in the labeling structure will result. The labeled list of ingredients consequently contains the position "... meat" as well as the positions "fat" and "connective tissue."

In conclusion, it can be stated that the definition of *meat* within the EU, and particularly in Germany, can be considered a complex matter, and

About the Authors



Ralf Lautenschlaeger studied Technology of Meat Processing at the Humboldt University in Berlin and received his diploma degree in 1984; in 1995, he earned his doctorate from the Technical University of Berlin. For several years, he was working in meat processing, quality management, and sales. He had been managing editor of the German meat trade magazine *Fleischwirtschaft International*. His research work in meat technology covered dry-cured ham processing, high-pressure treatment of processed meat, and dry-aging and packaging of fresh meat. He headed the International Competence Center on Meat Quality at the Max Rubner-Institute in Kulmbach, and since April 2015, he has held the position of a professor for meat processing technology at the OWL University of Applied Sciences in Lemgo, Germany. **Correspondence:** ralf.lautenschlaeger@hs-owl.de



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with no doubt, there is still space for various debates. Nevertheless, these detailed determinations provide a generally accepted basis for creating legal certainty for all stakeholders.

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