

**REGULATION (EC) No 854/2004 LAYING DOWN SPECIFIC RULES FOR THE ORGANISATION OF OFFICIAL CONTROLS ON PRODUCTS OF ANIMAL ORIGIN INTENDED FOR HUMAN CONSUMPTION IS NOT IN COMPLIANCE WITH OFFICIAL ANATOMICAL NOMENCLATURE**

*Verordening (EG) No 854/2004 houdende vaststelling van specifieke voorschriften voor de organisatie van de officiële controles van voor menselijke consumptie bestemde producten van dierlijke oorsprong schikt zich niet naar de officiële anatomische nomenclatuur*

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## ABSTRACT

**In order to protect public health, a series of official controls have to be performed during and after slaughter aimed at identifying diseased animals that have to be excluded from human consumption. All requirements are neatly stipulated in Regulation (EC) No 854/2004. However, the text contains a number of misconceptions and erroneously used terms, which result in a lack of clarity. This lack of clarity could lead to improper inspection and thus be detrimental to public health safety.**

**This paper describes a correct nomenclature and presents proposals to make the regulation more transparent. In addition, the Dutch, French and German translations of the English section of the regulation are discussed.**

## SAMENVATTING

Ter bescherming van de volksgezondheid moet er tijdens en na het slachtproces een reeks officiële controles uitgevoerd worden om zieke dieren, die uit de voedselketen geweerd moeten worden, op te sporen. Alle vereisten zijn keurig neergeschreven in Verordening (EG) No 854/2004. De tekst bevat echter een aantal misvattingen en verkeerdelijk gebruikte termen die onduidelijkheid kunnen veroorzaken. Dit kan mogelijkwijze leiden tot onnauwkeurige inspectie, wat de volksgezondheid kan schaden.

In dit artikel wordt een correcte nomenclatuur beschreven en worden voorstellen geformuleerd om de verordening te verduidelijken. Bovendien worden de Nederlandse, Franse en Duitse vertalingen van de Engelstalige versie van de verordening besproken.

## INTRODUCTION

In order to cope with the potential hazard of meat from diseased animals entering the food chain, all member countries of the European Community are required to organize official controls in slaughterhouses. Not only inspection of the state of health of living animals (ante-mortem inspection) is a requirement, but the carcasses and offal must also be examined after slaughter (post-mortem inspection). Depending on the animal species and age, the post-mortem inspection includes a series of

procedures which involve visual inspection, palpation and incision of carcasses and offal.

A detailed overview of specific requirements is given in Section IV of Regulation (EC) No 854/2004 by the European Parliament and by the Council of 29 April 2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption. However, the text contains several mistakes such as incorrectly spelled and ancient or erroneous terms for lymph nodes that ought to be examined. In addition, the text contains several typing errors.

In this paper a correct nomenclature is discussed, which is based on the official anatomical nomenclature established by the World Association of Veterinary Anatomists (Nomina Anatomica Veterinaria, 2005). Additionally, a number of proposals are presented which could contribute to the clarity of the English, Dutch, French and German sections of the regulation.

The following discussion is based on the terms as described in the English section, with additional reference to the three official Belgian languages, viz. Dutch, French and German. All these sections of the regulation can be found via the following URL's:

[http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l\\_226/l\\_22620040625en00830127.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l_226/l_22620040625en00830127.pdf)

[http://eur-lex.europa.eu/LexUriServ/site/nl/oj/2004/l\\_226/l\\_22620040625nl00830127.pdf](http://eur-lex.europa.eu/LexUriServ/site/nl/oj/2004/l_226/l_22620040625nl00830127.pdf)

[http://eur-lex.europa.eu/LexUriServ/site/fr/oj/2004/l\\_226/l\\_22620040625fr00830127.pdf](http://eur-lex.europa.eu/LexUriServ/site/fr/oj/2004/l_226/l_22620040625fr00830127.pdf)

[http://eur-lex.europa.eu/LexUriServ/site/de/oj/2004/l\\_226/l\\_22620040625de00830127.pdf](http://eur-lex.europa.eu/LexUriServ/site/de/oj/2004/l_226/l_22620040625de00830127.pdf)

The first chapter of the Regulation (EC) No 854/2004 concerning specific requirements for domestic bovine animals is divided into bovine animals under and over six weeks old and contains several misconceptions. These items, which are repeated in the other chapters referring to domestic solipeds, domestic sheep and goats, the domestic swine, poultry, farmed lagomorphs, farmed game and wild game, will be discussed subsequently in the present paper. In addition, one specific topic concerning domestic solipeds will also be elaborated.

## REVIEW OF ERRONEOUS REGULATION FRAGMENTS

Most misconceptions and erroneously used terms occur in the English section of the regulation. The Dutch and French versions present a concomitant problem by designating the lymph nodes by the obsolete and erroneous terms “lymfklier” and “ganglion lymphatique”, respectively. Despite the fact that it can be found in dictionaries (Van Dale, 1995), the Dutch word “lymfklier” should not be used because it means “lymph gland” and should be replaced by the official alternative term “lymfknoop” which is a literal and correct translation of the Latin term *lymphonodus*. Similarly, the old French term “ganglion lymphatique” is obsolete and confusing as a ganglion refers to the nervous system, and therefore it should be replaced by the term “nœud lymphatique” (Barone, 1996).

## Bovine animals under six weeks old

*“Visual inspection of the head and throat; incision and examination of the retropharyngeal lymph nodes (Lnn retropharyngiales); inspection of the mouth and fauces; palpation of the tongue; removal of the tonsils”*

A first error is the use of an incorrect Latin translation of the retropharyngeal lymph nodes. Instead of *Lnn. retropharyngiales*, the term *Lnn. retropharyngei* should be used, i.e. the plural noun of *Lymphonodus retropharyngeus*. Additionally, the regulation does not clearly state whether either or both the lateral and the medial retropharyngeal lymph nodes should be examined. In cattle, the medial retropharyngeal lymph node is a large (3-6 cm long) and constantly present lymph node which can sometimes be accompanied by one or two smaller ones (Schummer *et al.*, 1981; Barone, 1996), while the lateral retropharyngeal lymph node is flat and oval, 4-5 cm in length and can be accompanied in about half of the animals by one to three smaller additional lymph nodes (Schummer *et al.*, 1981).

In the Dutch version of the regulation, the *Lnn. retropharyngei* are said to be located in the pharynx. This misconception is probably due to the fact that the Dutch translation of the term *Ln. retropharyngeus* is “keelholte-lymfeknoop”. However, these lymph nodes are located in the pharyngeal region, but outside the pharyngeal cavity and wall.

*“Visual inspection of the lungs, trachea and oesophagus; palpation of the lungs; incision and examination of the bronchial and mediastinal lymph nodes (Lnn. bifurcationes, eparteriales and mediastinales)”*

The requirement to incise and examine the bronchial and mediastinal lymph nodes, named by the legislator the *Lnn. bifurcationes, eparteriales and mediastinales*, is not unequivocal. The term *Lnn. bifurcationes* not only contains a spelling error, but the plural nominative form *Lnn. bifurcationes* should be replaced by *Lnn. bifurcationis*, which is a singular genitive meaning “the lymph nodes of the bifurcation”. Although *Lnn. bifurcationis* is an official alternative, the term *Lnn. tracheobronchales* should be preferred because this is a collective term for all the lymph nodes that are situated at the places where the major bronchi arise from the trachea.

The term *Lnn. eparteriales* is an obsolete term which was replaced by the term *Lnn. tracheobronchales craniales* almost 40 years ago (Nomina Anatomica Veterinaria, 1968). In fact, the *Lnn. tracheobronchales* consist of the *Lnn. tracheobronchales dextri, sinistri, medii et craniales*. Just as for the retropharyngeal lymph nodes, the

regulation should indicate whether or not all of these lymph nodes have to be examined.

A final remark concerning this topic deals with the fact that the mediastinal lymph nodes consist of the *Lnn. mediastinales craniales, medii et caudales*. As species-specific variations occur (Nomina Anatomica Veterinaria, 2005), the regulation should indicate which mediastinal lymph nodes have to be examined. For instance, the medial mediastinal lymph nodes are only present in ruminants and horses. In cattle they can be composed of three or four lymph nodes which are 1–4 cm in length (Barone, 1996). Furthermore, the caudal mediastinal lymph nodes are very large in the bovine species (Barone, 1996).

*“Visual inspection of the liver and the hepatic and pancreatic lymph nodes (Lnn portales); palpation and, if necessary, incision of the liver and its lymph nodes”*

This sentence is ambiguous as the term *Lnn. portales* apparently refers both to the hepatic and to the pancreatic lymph nodes. However, the liver and the pancreas each have their specific lymph nodes. The major lymph nodes associated with the liver are officially called the *Lnn. hepatici* or *Lnn. portales*, as they are located at the *porta hepatis*, where the portal vein enters the liver. It is worthwhile to mention that in cattle accessory hepatic lymph nodes (*Lnn. hepatici accessorii*) are present at the blunt dorsal border of the liver along the caudal vena cava (Barone, 1996). The lymph nodes associated with the pancreas are the *Lnn. pancreaticoduodenales*, but the regulation does not clearly state whether or not the latter should also be examined.

*“Visual inspection of the gastro-intestinal tract, the mesentery, the gastric and mesenteric lymph nodes (Lnn. gastrici, mesenterici, craniales and caudales); palpation and, if necessary, incision of the gastric and mesenteric lymph nodes”*

To be clear, the comma between *mesenterici* and *craniales* should be dropped. Otherwise, the official sentence could suggest that besides *Lnn. gastrici* and *Lnn. mesenterici*, also *Lnn. craniales* and *Lnn. caudales* exist. The mesenteric lymph nodes, however, are composed of the *Lnn. mesenterici craniales* and *Lnn. mesenterici caudales*.

### **Bovine animals over six weeks old**

*“Visual inspection of the head and throat; incision and examination of the sub-maxillary, retropharyngeal*

*and parotid lymph nodes (Lnn retropharyngiales, mandibulares and parotidei)”*

The linguistic error of the term *Lnn. retropharyngiales* has already been discussed earlier in the text. The term sub-maxillary lymph node is obsolete and, as it refers to the *Lnn. mandibulares*, it should be called the mandibular lymph node (Buda and Budras, 2002). Furthermore, the order of Latin names given between brackets should be adapted to the preceding English terms to avoid any confusion.

In the Dutch section of the regulation, the *Lnn. mandibulares* are said to be located caudally in the pharynx. They are, however, located caudally in the intermandibular region. The lymph nodes confined in the pharyngeal region are the *Lnn. retropharyngei* (cfr. supra). The correct Dutch translation for *Lnn. mandibulares* is “keelganglymfknopen”. Furthermore, the term *Lnn. parotidei* is translated into “oorspeeksellymfklieren”. This term should be replaced by “parotisllymfknopen”, which means “the lymph nodes of the parotid gland”. Alternatively, “oorspeekselymfklierlymfknopen” could be used in accordance with the German translation “Ohrspeicheldrüsenlymfknoten”.

*“Incision of the gastric surface of the liver and at the base of the caudate lobe to examine the bile ducts”*

The caudate lobe of the liver is called “Spiegelse kwab” in the Dutch version and “Spigelschen Lappens” in the German translation of the regulation. These terms are not official and should be replaced by the Latin term *lobus caudatus*, as correctly translated into “caudate lobe” in the English version. The “Spiegelse kwab” is an eponym referring to the Flemish anatomist and botanist Adriaan van den Spiegel, alias Adrianus Spigelius (1578 – 1625). Not only the caudate liver lobe, but also the marking of the lateral margin of the rectus abdominis muscle (*linea semilunaris*) just above the pelvis in man have been named after this eminent scientist (Habel, 1978).

The French version of the regulation is different from all other versions as it states that the “lobe carré” of the liver has to be incised to examine the bile ducts. Since this term refers to the *lobus quadratus* of the liver (Schaller, 1992), it is obvious that the French regulation does not correspond with the other versions, and that the term “lobe carré” should be replaced by “lobe caudé” as defined by Barone (1997).

*“Visual inspection and, if necessary, palpation and incision of the udder and its lymph nodes (Lnn. supramammarii). In cows, each half of the udder must be opened by a long, deep incision as far as the lactiferous sinuses (sinus lactiferes) and the lymph nodes*

*of the udder must be incised, except when the udder is excluded from human consumption”*

Instead of the term *Lnn. supramammarii*, the lymph nodes of the udder are officially called *Lnn. mammarii*. Moreover, also the lactiferous sinuses are erroneously designated as *sinus lactiferes*. This latter term is grammatically incorrect because the plural form of *sinus lactifer* is *sinus lactiferi* instead of *sinus lactiferes*.

### Domestic solipeds

*“All grey or white horses must be inspected for melanosis and melanomata by examination of the muscles and lymph nodes (Lnn. subrhomboidei) of the shoulders beneath the scapular cartilage after loosening the attachment of one shoulder”*

The specific requirement to examine *Lnn. subrhomboidei* in the equine shoulder area is clearly erroneous, since these lymph nodes are only present in cattle, in which they are located ventromedial to the cervical part of the *musculus rhomboideus* (Saar and Getty, 1975; Schummer *et al.*, 1981). This was further confirmed by Muylle and Simoens (1994), who performed a study on ten slaughtered horses and could not find any *Ln. subrhomboideus*. On the other hand, superficial cervical lymph nodes (*Lnn. cervicales superficiales*) are well developed in all horses and it was concluded that “for the detection of equine melanosis, which is usually of epidermal origin, superficial lymph nodes such as the superficial cervical and subiliac lymph nodes should be examined” (Muylle and Simoens, 1994).

### CONCLUSION

Although some of the errors discussed in this paper are trivial (e.g. typing errors), other inaccuracies could cause confusion for meat inspectors responsible for public health safety. In view of clarifying any indistinctness and in order

to cope with recent scientific insights, the legislation should be adapted and rephrased where necessary.

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