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Any attachments relating to these contents can be found in the members area on the BMPA website: www.bmpa.uk.com

Date of this year’s conference - Thursday 13 May 2010 at the Oxford Belfry Hotel. Please note the date in your diaries.

UK AND BMPA ISSUES

1. Approval of Meat Establishments

In last week’s Update, we reported on the Polley report on recommended new arrangements for the approval of meat establishments. At the FSA Board meeting this week, FSA Chief Executive, Tim Smith, briefly referred to the report, noting that its recommendations would be considered in the light of both the various organisational changes that had taken place since the report had been commissioned and the pending moves to bring the MHS ‘in house’ to the FSA.

2. BMPA Wiltshire Cure Specification

Further to the President’s proposal and invitation for companies to submit additional responses by 8 December 2009, the Management Council met on 20 January to discuss this matter. Council recognised that there were a significant number of member companies that support a specification that includes both bone-in and bone-less cuts, and responses highlighted that an exclusion of bone-less raw material would have adverse commercial consequences for a significant number of member companies.

Council noted that the standards have allowed bone-less curing for several years and felt that they should not be changed to exclude it, given that businesses have invested in this method in line with the prevailing standards. However, Council agreed that should there be sufficient support for a distinction between the two variations (bone-in and bone-less) via the use of different category names then this could be considered. The terms “Traditional Wiltshire” for the bone-in specification and “Wiltshire” for the bone-less specification have been suggested, and on this basis a formal letter is being prepared to seek members’ views. The letter will also request that any initial comments on the possible re-categorisation should be sent urgently to the secretariat by close of play Tuesday 2 February, so that the matter can be considered by the Pigmeat Technical Advisory Committee on 3 February.
3. Smoked Skin-on Sheepmeat

At its meeting earlier this week, the FSA Board was briefed on research which the FSA had carried out on the production of smoked skin-on sheepmeat. This indicates that it is possible to produce such meat safely and hygienically in slaughterhouses. On this basis the Board agreed that clearance should be sought from UK Ministers to approach the European Commission to seek a change in EU law to permit production of smoked skin-on sheepmeat for human consumption.

EU AND WIDER ISSUES

4. European De-sinewed Meat Working Agreement

Representatives from BMPA, FSA and Leatherhead Food Research recently attended a meeting at CEN, the European Standards Commission, to discuss a commercial project to develop a CEN Working Agreement (CWA) document which details specifications and test methods for the determination of de-sinewed meat. The project has been developed in part by Histalim, a French laboratory that has developed computer imaging analysis software which identifies cell structure loss. The need for the document arises from the position held by Authorities in other member states whereby any meat which has been separated by a machine is considered to be MSM. This will include meat removed from whole poultry carcases.

The document is voluntary and will be used to facilitate business-to-business trade. Member states that are unable to use this product as meat will also use the document in negotiations with their Competent Authorities. It is thought that Histalim, if successful, with the CWA will apply to have this method validated as a European Standard, which if approved would replace any recognised domestic methods.

BMPA does not support the inclusion of specifications for the ingredient as these should be determined by the processor, and we believe that the working agreement should focus on the analytical method of determination. Attached is a copy of the business plan for the project and the specification and test method document. Whilst the first meeting was open to all interested parties without charge, continued participation in the project will be at a cost per company of €1000 which permits two representatives per company to participate. Agreement on the content of the CWA is based on a voting system and interested companies are encouraged to participate for the purposes of voting. If you have any comments on the specification or test method or require further details on the project please contact Elizabeth Andoh-Kesson eak@bmpa.uk.com by 3 February.

Stephen Rossides
Director

* * *
CEN Workshop Draft Business Plan

“Meat raw material obtained by deboning –
Assessment of the muscle fibre structure - Pork, poultry and rabbit

(WS N 54 - MECBO)

1) Status of the Business Plan

Business plan for approval during the kick-off meeting on 2010-01-21

2) Background to the CEN Workshop

Market environment

The technology to separate meat mechanically from flesh bearing bones was developed around 1955. The original aim was to reduce the sickness rate due to RSI (Repetitive Strain Injury) caused by short cyclic boning work in cutting rooms of meat operations. The use of a press was developed for this purpose and was quite successful. This technology was spread all over Europe and the USA in a reasonably short time.

In the beginning, primitive presses derived from other types of industries were used to separate the meat from the bones, pressing with high pressure (up to 200 ato). It yielded a fine quality meat paste that could be used in cooked sausage recipes only. Over the years gradual technical improvements and pre selection of the different types of flesh bearing bones pressed at much lower pressure (up to 20 ato) produced a coarse type high quality meat that could not any more be distinguished from traditional minced meat (so called 3mm or Baader meat).

The CLITRAVI (Liaison Centre for the meat processing industry in the E.U) estimates that 800 000 tonnes of this raw meat material had been produced in 2008. A very rough evaluation gives 55 % are issued from high pressure and 45% for low pressure. 150 000 tonnes per year are exported to third countries.

But this raw meat material obtained by low pressure does not match the definition of “Mechanically separated meats” in European regulation (EC) No. 853/2004 (annex I):

“Mechanically separated meat or MSM: the product obtained by removing meat from flesh-bearing bones after structure boning or from poultry carcasses, using mechanical means resulting in the loss or modification of the muscle fibre structure.”
This meat raw material, obtained by removing from bones, has been reduced to fragments without significantly modifying the internal muscle fibre structure. Thus, they still present the meat characteristics.

This meat raw material is to be used for processed meat products and meat preparations.

In 2007, HISTALIM, a French laboratory, developed a laboratory system that can quantify precisely the loss or modification of the muscle fibre structure in meat raw material and so be able to distinguish the different types of meat obtained by mechanical boning. After a European study\(^1\) involving 126 professionals, the result was presented to the European Commission.

A European project, LOTIMS has been launched in the frame of Eurostars in order to define and to check this raw meat material. Four partners are involved in the project: HISTALIM (FR), COPENHAGEN UNIVERSITY (DK), AARHUS UNIVERSITY (DK), CAPELEC (FR). The project will end in October 2011. One of its aims is to develop a European normative document in order to make this new tool recognized and to give a specific status to "3mm meat".

**Legal environment**

This meat raw material is controlled by the following three legislative texts:


**Existing standards and standard related activities and documents**

For the time being, there is not any CEN structure working on specifications of meat products. In the food sector, the scope of CEN/TC 275 “Food analysis - Horizontal methods” is as follows:

Standardization of methods for the detection and determination of additives, residues and contaminants in food. Furthermore, standardization of horizontal microbiological analysis methods for all food and animal feeding stuffs and for any other sample that can be the source of microbial contamination of food products. Analyses of human samples are excluded from the scope. In general, CEN/TC 275 does not elaborate standards on terminology but mainly on test methods. Furthermore the scope of CEN/TC 275 includes the analyses of substances which are related to the directive 2002/46 (food supplements) such as carotenoids and minerals.

---

\(^1\) Meat science 81 (2009) 515-522 – Development of a system to quantify muscle fibre destructuration - Laurence Sifre, Bénédicte André, Jean-Philippe Coton
This committee does not elaborate standards for particular food products, standards relating to food specifications and is only concerned with analysis of components linked to food safety. It does not have the appropriate expertise to deal with the topic proposed for this WS.

At international level, the scope of the ISO/TC34/SC 6 “Meat, poultry, fish, eggs and their products” is limited to terminology and methods of sampling and analysis for meat and meat products and does not have the appropriate expertise to deal with this topic.

Moreover, there has been no active work item in this sub-committee for more than 5 years.

3) Workshop proposers and Workshop participants

- Original proposer of the Workshop
  - HISTALIM (in the frame of LOTIMS project)

- Workshop participants:
  - A survey organized between April and June 2009 allowed to contact more than 70 stakeholders (in particular European and national associations or companies). 51% of forms had been returned. 75% of these participants answered they would like to participate in the Workshop. A list of 28 interested partners is given in annex B.

4) Workshop objectives

Based on the market environment described above the objectives of the proposed CEN Workshop are:

- to produce a document which is designed to be used by professionals for business to business transactions (the B2C relations are excluded from the scope of this project);
- to draft a CWA describing the methods of analysis and specifications for meat raw material from pork, poultry and rabbits obtained by mechanical deboning i.e. mechanical removal of meat from bones.

5) Workshop programme

The CWA will be delivered in English and French. The working language of the Workshop will be in English only.

Work in progress

The timetable is the following:
1) Working documents distributed to interested parties registered at the CEN Workshop;
2) Kick-off meeting in January 2010 in Brussels. The draft agenda of this meeting will be the adoption of the Business Plan, adoption of the organization structure (secretariat, chairman …), discussion on the draft CWA, decision on a work program;
3) Drafting of the revised version (4 months);
4) Revised draft distributed to Workshop participants;
5) Publication for an external comment phase for 60 days (June- July 2010);
6) Final Workshop meeting if possible in August 2010, in September at the latest;
7) Publication in English and French.

### Proposed time table

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<td>1. Business plan posted on CEN website</td>
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<td>2. Kick-off meeting (preferably January)</td>
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### 6) Workshop structure

The Workshop structure will consist of :

#### Workshop Chair

The Workshop chair will be appointed during the Kick-Off meeting. The responsibilities of the Chair may be summarized as follows :

- to chair any plenary meeting of the Workshop,
- to manage the workshop consensus process,
- to represent the CEN Workshop in outside meetings,
- to interface with the CEN/CMC regarding strategic directions, problems arising, external relationships, etc.,
- to ensure that the Workshop Agreement is in line with its Business Plan.

Workshop Project Leader

The project leader is responsible for the proper conduct of the work with the help of the workshop secretariat. He drafts document in accordance with the workshop decisions and with CEN drafting rules.

Workshop Secretariat

The Workshop secretariat will be confirmed at the Kick-off meeting. It is expected that its responsibilities will be taken by the French Standards Institute (AFNOR).

The Workshop secretariat shall:

- maintain a register of participants,
- arrange plenary meetings,
- provide expertise in standardization and provide relevant standards to the Workshop when or where necessary,
- produce agendas and reports of the meetings,
- prepare and distribute the draft CWA,
- keep the CEN CMC informed of progress.

Workshop Participants

Any interested party can register to the CEN Workshop without geographical limits. Registration is open during the lifetime of the Workshop and will be closed before the final consensus process is started. The website where the documents of the Workshop will be made available will be communicated to the participants by the secretariat when they register.

7) Resource requirements

All costs related to the participation of interested parties in the Workshop's activities have to be borne by themselves.

The main funding will be provided by:

1) A sponsor : HISTALIM
2) Workshop participants registration at a one-time fee of 1000 Euro per entity. No more than two persons may represent the entity. The number of participants to the Workshop itself is not be limited.

8) Related activities, liaisons, etc.
This CEN workshop is in relation with one of the packages of the European project LOTIMS developed in the frame of Eurostars. This project is managed by four partners HISTALIM (FR), COPENHAGEN UNIVERSITY (DK), AARHUS UNIVERSITY (DK) CAPELEC (FR) and will end in October 2011. CEN/TC 275 shall be kept informed of the development of this CEN Workshop

9) Contact points

**Proposed Chairman:**
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Boulevard Baudouin 18
B – 1000 Brussels
Tel : + 32 2 203 51 41
Fax : + 32 2 203 32 75
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**Proposed Secretariat:**
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B-1000 Brussels
Tel : + 32 2 550 09 39
e-mail : gaid.legall@cen.eu
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# Annex A

## Contact information

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<th>Name</th>
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<tr>
<td><strong>1</strong> HISTALIM</td>
<td>Mr COTON Jean-Philippe Tel : +33 4 67 71 27 65</td>
</tr>
<tr>
<td>126, rue Emile Baudot F 634000 Montpellier <a href="http://www.histalim.com">www.histalim.com</a></td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> CLITRAVI (Liaison Center for the Meat Processing Industry in the European Union) Boulevard Baudouin 18 B – 1000 Bruxelles <a href="http://www.clitravi.com">www.clitravi.com</a></td>
<td>Mr DOBBELAERE Dirk Secretary general Tel : + 32 2 203 51 41</td>
</tr>
<tr>
<td><strong>3</strong> AFNOR</td>
<td>Mrs RUETSCHE Bernadette Tel : +33 1 41 62 88 87</td>
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<tr>
<td>11 rue Francis de Pressensé F- 93571 LA PLAINE SAINT-DENIS Cédex <a href="http://www.afnor.org/">http://www.afnor.org/</a></td>
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## Annex B

### List of stakeholders interested

Survey organised by AFNOR (April to June 2009) – Intention to participate to CEN Workshop

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<td>AM2C</td>
<td>France</td>
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<td>ARAGONESA DE PIENSOS</td>
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<td>PRATT PINET</td>
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<td>ROBERT DAMJAER</td>
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<td>ZWANENBERG FOOD GROUP</td>
<td>The Netherlands</td>
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Annex C

Draft agreement proposed
Meat raw materials obtained by mechanical boning – Specifications and test methods

ICS:

Descriptors:
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Foreword

This document is a working document.
Introduction

Technological progress, changes in market expectations and economic factors have prompted the appearance of a new category of meat raw materials defined in this document as meat raw materials obtained by mechanical boning.

New technologies can be used to retrieve previously inaccessible meat, while producing a raw material of a highly satisfactory quality. If the parameters are correctly controlled, these new mechanical processes can be used to produce meat made essentially of muscle with a relatively well preserved fibre structure.

Due to their destructuration level, these meat raw materials do not match the definition of “Mechanically separated meats” in European regulation (EC) No. 853/2004 (annex I) [2] :

“Mechanically separated meat or MSM: the product obtained by removing meat from flesh-bearing bones after structure boning or from poultry carcasses, using mechanical means resulting in the loss or modification of the muscle fibre structure.”

These raw materials, obtained by removing of bones, have been reduced to fragments and underwent an insufficient processing to modify the internal muscle fibre structure. Thus, they still present the meat characteristics.

These raw materials are to be used for meat processed products. They cannot be considered as minced meat, no more enter in the composition of minced meat.

This document includes the specifications recognised by all the parties referred to in order to define this type of raw meat materials and the test methods used to measure these characteristics.

1 Scope

This document describes the specifications for raw meat materials made with mechanically boned meat and proposes test methods to measure their characteristics.

This document applies to preparations of poultry, pork and intended for further processing. The purpose of this document is to facilitate exchanges between professionals.

The main requirements apply to:

— the microbiological criteria,

— the muscle fibre structure.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NF V 04-417, Meat and meat-based products — Preparation of a section for histological analysis

EN ISO 6579 , Microbiology of food and animal feeding stuffs - Horizontal method for the detection of Salmonella spp.
ISO 16649-1 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of bêta-glucuronidase positive Escherichia coli - Part 1 : colony-count technique at 44° C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucoronide

ISO 16649-2 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of B-glucuronidase-positive Escherichia coli - Part 2 : colony-count technique at 44 °C using 5-bromo-4-chloro-3-indolyl B-D-glucuronate

3 Terms and definitions

For the purposes of this document, the European legislation terms and definitions apply as well as the following ones :

3.1 meat
Skeletal muscles of mammalian and bird species recognized as fit for human consumption with naturally included or adherent tissue. The products covered by the Community definition of "mechanically recovered meat" are excluded from this definition. The diaphragm and the masseters are part of the skeletal muscles, while the heart, tongue, the muscles of the head (other than the masseters), the muscles of the carpus, the tarsus and the tail are excluded.

3.2 meat raw material
meat intended to be used for processing foodstuff

3.3 Meat raw material obtained by mechanical boning
meat raw materials that complies with the specifications of this document

3.4 muscle fibre structure
structure related to the tissue organisation of the muscle made of long cells, known as muscle fibre

3.5 destructuration
loss or modification of the muscle fibre structure

3.6 Meat Destructuration Indicator (MDI)
unit of measurement expressing the destructuration (as a %) of the meat raw materials, as formulated in the bibliography reference [4]

3.7 non-destructured fibres
set of muscle fibre whose structure appears to be unchanged when observed with a microscope

3.8 destructured fibres
set of muscle fibre whose content is "noisy" and shows amorphous zones corresponding to clusters of proteins that have lost all structure when observed with a microscope

3.9 extracellular space
space surrounding each non-destructured muscle fibre corresponding to the discharge of water caused by ageing and treatments
3.10 lacunae
set of spaces that are distinct from the extracellular spaces. Spaces left when the sample is washed as part of its preparation for histological analysis

4 Procedure

The meat raw materials that comply with this document are produced and monitored according to a procedure that formalises:

- the parameters for all the factors influencing destructuration,
- the characteristics of the ambient conditions,
- the check points to carry out during the process,
- the self-checks list required to make sure the specifications (see 6) as well as the additional criteria (see 7) are met,
- the frequency of self-checks,
- the reference allowing to identify the obtained material,
- the keeping and filing rules of the data stemmed from self-checks,
- the procedure validation and approval by the company management.

Before the validation of the procedure, it shall be demonstrated that the meat raw materials obtained comply with the specifications as well as with the possible additional criteria, in a sufficiently repeatable manner.

When a result of a self-check reveals that the specifications or the possible additional criteria are not satisfied, an increase of the frequency of self-checks is required. If, afterwards, others non-corresponding results were obtained, it would be advisable to revise the procedure.

5 Factors influencing destructuration

A number of factors influence the level of destructuration of the meat raw materials. Parameters shall be defined in the procedure for each of these factors. The factors are related to:

- the selection of input material,
- the mechanical boning process,
- the mode of preserving the raw materials produced.

5.1 Choice of the anatomic parts used

Various factors influencing destructuration are related to the choice of the anatomic parts used and are in particular:

- animal species,
- variety and/or sex and/or age of the slaughtered animal, and/or the husbandry practice,
- the cut used,
the kind of packaging,
— mode of preservation (time/temperature combination) prior to production.

5.2 Mechanical boning processes

The mechanical boning process shall be defined by:
— the machine(s) used, including any detachable parts,
— the range for all the possible settings of the machine(s),
— the frequency at which the machine(s) are serviced
— The measure of the temperature with heart of the product at the release of the machine.

5.3 Mode of preserving the raw materials produced

The preservation mode can also impact the level of destructuration. It shall be defined by:
— the maximum time between leaving the machine and packaging/cooling,
— the time necessary to reach the required core temperature,
— the requested preservation temperature,
— for samples that are marketed fresh, the maximum length of preservation at a given temperature.

6 Specifications

Raw meat material obtained by mechanical boning shall meet the specifications defined below.

6.1 Microbiological criteria

— Escherichia coli ≤ 500 cfu / g
— Salmonella :
   — For poultry raw materials intended to be eaten cooked : absence in 25 g
   — For others species raw materials intended to be eaten cooked : absence in 10 g
   — For all species raw materials intended to be eaten uncooked : absence in 25 g

The check shall be made on the basis of methods of analysis as defined in the regulation EC 2073/2005 [3].

6.2 Muscle fibre structure

Check by quantification of the level of destructuration:

result < 58.1% MDI (see 8)
7 Additional criteria

Others specifications can be used by companies. A non exhaustive list is given below. The test methods procedures shall be specified by companies.

7.1.1 Bone and cartilage

Check of the proportion of bone particles in the sample

- by measuring the calcium content

or

- by counting bone + cartilage histological images

7.1.2 Fatty tissue

Check the proportion of fatty tissue by measuring the fat content

7.1.3 Connective tissue

Check of the proportion of connective tissue by determination of hydroxyproline or by analysis of the histological images.

7.1.4 Other foreign tissues

The tissue composition of the material can be estimated during the process by visual tests on the anatomic parts and checked by histological analysis of the composition on the meat raw materials stemming from the process.

8 Quantification of destructuration

8.1 Principle of the method

The destructuration of raw materials is quantified by computer analysis of histological images. The analysis shall be conducted on raw meat materials obtained by mechanical boning into which no ingredients have been incorporated. The sample shall be received by the laboratory under the conditions of preservation that are usually applied when transporting the meat raw material to the processor.

8.2 Preparation of histological sections

The histological sections are prepared using the method described in the French standard NF V04-417, plus the following requirements:

- Analysis of fresh samples shall begin immediately. For frozen samples, a separate part shall be taken upon reception and maintained at a negative temperature for possible subsequent counter-analysis. The analysed sample shall be thawed slowly between 0°C and 8°C.

- A least six samples shall be taken from each product. Precautions shall be taken to make sure that rectangular histological samples measuring about 5 cm² can be taken in a sufficiently repeatable manner in order to facilitate digital data acquisition.
No fixation is necessary if the sample is processed within 5 hours of being completely thawed. If this is not the case, fixation shall occur between 0°C and 8°C for 12 to 36 hours.

Impregnation by solvents and paraffin shall not occur at pressures that are significantly lower than atmospheric pressure.

The histological sections shall be made with an even thickness, with limited overlap of tissues and shall meet the requirements of image analysis.

The histological sections shall be stained using the Calleja’s method. Measures shall be taken to guarantee that the staining is sufficiently repeatable. The mounting medium used shall be compatible with histological image analysis.

In general, the histological sections shall be prepared so as to limit as far as possible all factors that may result in the increased destructuration of the sample.

### 8.3 Image analysis

The digital acquisition of the histological sections shall produce a sufficient number of images per slide to obtain at least 50 correctly segmented images, each representing about 4 mm².

Prior to processing, the images shall be checked in order to discard any images showing:

- preparation artefacts (bubbles, separation, overlap, tearing, dust, etc.),
- section edges,
- one or more factors that interfere with the segmentation algorithm, occupying at least one quarter of the surface of the image.

The image analysis algorithm shall be used to segment and calculate the surface area (in µm²) occupied by the following categories:

- Fundamental tissues (bone, cartilage, elastic connective tissue and nerve tissue, vessels)
- fat cells,
- non-destructured fibres,
- destructured fibres,
- extracellular space,
- lacunae.

Only correctly segmented images shall be included in the calculation of the MDI of the analysed sample.

The MDI shall be calculated on the total surface area occupied by the different segmented categories for all of the validated segmentations.

A 10% Dixon test shall be conducted to detect the presence of slides with extreme MDI values.

### 8.4 Expression of the result

The analysis report shall include:

- the surface area (as a %) occupied by the different segmented categories,
8.5 Interpretation

The test report shall mention the conclusions of the test method and express the compliance of the sample to the specification described in the present document.

9 Labelling

Meat raw materials that comply with this document can be sold as “…… Raw meat materials obtained by mechanical boning”.
Bibliography


