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Guidance on Mandatory Labelling for Mechanically Tenderized Beef

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Food Directorate

Health Products and Food Branch



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Purpose

On May 21, 2014, Health Canada published an amendment to the *Food and Drug Regulations* in Canada Gazette Part II that requires any mechanically tenderized beef (MTB) sold in Canada to be labelled as such, including with safe cooking instructions.

This guidance document is intended to provide information to the food industry on the labelling requirements for MTB sold in Canada. Ultimately, the goal of identifying MTB and including safe cooking instructions on the label is to provide Canadians with the knowledge of what they are buying and how to cook it properly in order to prevent foodborne illnesses related to MTB. These regulations will come into force as of August 21, 2014.

1.0 Health Risk Issues

In 2012, 18 cases of foodborne illness caused by *Escherichia coli* O157 (*E. coli* O157) were reported as part of a Canadian outbreak associated with contaminated beef. During the food safety investigation following the outbreak, five cases were considered to be likely associated with the consumption of beef that had been mechanically tenderized at the retail level.

Mechanical tenderization of meat is a practice that has been used by processors, food services and retailers for many years to improve the tenderness and flavour of beef. The process of mechanically tenderizing meat involves using instruments such as needles or blades to break-down, penetrate or pierce its surface disrupting the muscle fibers, or injecting it with a marinade or tenderizing solution. It is not necessarily apparent by just looking at a mechanically tenderized meat product that it has undergone this process. Mechanical tenderization can also occur at home, as tenderizing tools intended for home use are available to Canadian consumers.

In general, the internal temperature of a steak or other solid cut of beef is not a significant concern given that any harmful bacteria that may be present would normally be on the surface of the meat and would be inactivated during cooking. However, when steaks and beef cuts are mechanically tenderized, there is a potential for bacteria to be transferred from the surface to the centre of the meat. Therefore, there may be an increased risk to consumers from MTB.

In May 2013, Health Canada completed a health risk assessment specifically focused on *E. coli* O157 in MTB (Catford *et al.*, 2013). The results of the assessment showed a five-fold increase in risk from MTB products when compared to intact¹ cuts of beef. The assessment also noted that without labels, it is difficult for Canadians to identify which beef products have been mechanically tenderized.

¹ “Intact” means its internal structure has not been modified, i.e. not subjected to mechanical tenderization or any comminution process.

2.0 Scope of Application

For the purpose of this regulation, MTB refers to uncooked, solid cut² beef that has been prepared by mechanical tenderization, that is to say, a process where the integrity of the beef surface has been compromised by being punctured by blades or needles, or by the injection of a solution or marinade. This includes all solid cuts of MTB regardless of thickness, and therefore includes, but is not limited to, products such as cubed steaks (e.g., fast fry/minute steaks). The regulation only applies to mechanically tenderized **beef**, including veal, and no other species of meat. It does not apply to ground beef or any uncooked beef that has been subject to a comminution process such as grinding, chopping, flaking, mincing, fine texturing and/or mechanical separation.

The objective of this regulation is to identify MTB when it is offered for sale and to provide consistent and appropriate safe cooking information to all Canadians. Therefore, it will apply to all industry sectors selling MTB to other industry members or consumers in an uncooked, solid cut form. This includes, but is not limited to, grocery retailers, butcher shops, meat processors, and importers of MTB. The regulation applies to both fresh and frozen uncooked MTB, as well as both prepackaged³ and non-prepackaged products. It does not apply to advertisements or to menu labelling in any food service establishment (e.g., restaurants, school and hospital cafeterias, catering operations, etc.).

MTB that is packaged on the premises at time of customer selection or purchase (e.g., in a butcher shop or at clerk-served meat counters) will need to be identified as such before the customer selects their desired cut of beef, for example, identification of “mechanically tenderized” on the in-store signs adjacent to the product in the display case. If so desired, the cooking instructions may be displayed at this time; however, it is not required. Once the meat has been packaged to give to the customer, it **is required** that the product carry both the mandatory identification of “mechanically tenderized” and the safe cooking instructions on the principal display panel itself.

2.1. Scope of Application Rationale

This regulation aims to ensure that all MTB in Canada will be appropriately labelled from the time it has been mechanically tenderized and will carry forward the appropriate labelling throughout the production and distribution chain from the processor to the purchaser.

This regulation does not apply to MTB cooked and served at foodservice establishments. It will however, ensure that foodservice establishments that purchase uncooked MTB will receive products that are properly identified and labelled. Safe cooking procedures are the responsibility

² “Solid cut meat” shall be (a) a whole cut of meat; or (b) a product consisting of pieces of meat of which at least 80 per cent weigh at least 25 g each, *Food and Drug Regulations*, section B.14.020

³ “Prepackaged product” means any food that is contained in a package in the manner in which it is ordinarily sold to or used or purchased by a person. *Food and Drug Regulations*, section B.01.001.

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of the food service establishment. Food service establishments that serve MTB may wish to inform their customers that the beef product has been mechanically tenderized, but are not obligated to do so given the customer would receive the product in a prepared form (i.e., cooked).

The scope of the regulation and this guidance document is limited to MTB products only and does not include intact cuts of beef. The process of mechanical tenderization increases the potential for distribution of any pathogens that may be present on the surface of the product by transferring the pathogens beneath the surface and into the beef cut. This does not occur with intact beef cuts since bacteria will remain on the meat surface.

MTB is not easily identified by visual inspection (i.e., by looking at the meat surface). Therefore, without appropriate labelling, the purchaser of uncooked MTB would not be aware that they were purchasing a beef cut that has been mechanically tenderized and that it potentially has pathogens present beneath the surface. Also, they would not have safe cooking instructions to help mitigate the risk of foodborne illness associated with the potential presence of pathogens in MTB.

This regulation only applies to beef **not** pork or poultry. To date, in Canada, *E. coli* O157 outbreaks related to mechanically tenderized meat has only implicated beef products. In addition, pork and poultry products are usually fully cooked when prepared for consumption. Health Canada currently recommends that pork and poultry products be cooked to 71°C and 85°C (for whole poultry), respectively.

Uncooked, non-prepackaged MTB products sold in retail display cases and butcher shops are included in the scope of this regulation because they pose the same risk to consumers as those products prepackaged for sale. Therefore, the requirements ensure that both prepackaged and non-prepackaged MTB products will be identified as mechanically tenderized. Additionally, the requirements ensure that both prepackaged and non-prepackaged MTB will ultimately be labelled with cooking instructions, so that the customer has access to this information at the time of preparation.

3.0 Label Content

Health Canada requires the following statements (as shown exactly in quotations) to be included on the principal display panel⁴:

- a) Identification as **“mechanically tenderized”**
- b) Safe cooking instructions **“Cook to a minimum internal temperature of 63°C (145°F)”**
- c) And, in the case of steaks, an additional safe cooking instruction to help achieve a consistent temperature throughout **“Turn steak over at least twice during cooking”**.

3.1 Label Content Rationale

Clear and prominent identification of MTB with the words “mechanically tenderized” in the common name or elsewhere on the principal display panel will allow consumers to easily identify that the product has undergone a mechanical tenderization process. This addresses the fact that MTB is not easily identified by visual inspection of the product.

However, identification of MTB alone does not address the risk of foodborne illness, since the purchaser may not know the appropriate cooking instructions. Advising consumers to cook MTB to a minimum internal temperature of 63°C (145°F) throughout the entire cut will minimize the risk of foodborne illness linked to the mechanical tenderization process (Gill *et al.*, 2013). At this time, no other temperature/time combination will be permitted on MTB labels under the *Food and Drugs Regulations*.

In the case of MTB steaks, the instruction to “turn steak over at least twice during cooking” (i.e., flipping) will also help to minimize the risk of foodborne illness, as it has been determined that frequently turning steaks over during cooking is effective in achieving a consistent temperature throughout the steak (Gill *et al.*, accepted for publication 2013) and thus inactivating any pathogens which may be present. Although rest time can be considered a contributing factor for the inactivation of pathogens in a steak, turning steak over was determined to be more effective in the overall inactivation of pathogens throughout the steak (Gill *et al.*, accepted for publication 2013).

⁴ As defined in the *Consumer Packaging and Labelling Regulations*, Principal Display Panel means, in the case of a container that is mounted on a display card, that part of the label applied to all or part of the principal display surface of the container or to all or part of the side of the display card that is displayed or visible under normal or customary conditions of sale or use or to both such parts of the container and the display card, in the case of an ornamental container, that part of the label applied to all or part of the bottom of the container or to all or part of the principal display surface or to all or part of a tag that is attached to the container, and in the case of all other containers, that part of the label applied to all or part of the principal display surface. [2.(2), CPLR] Please note that these provisions will eventually be part of the regulations promulgated under the Safe Food for Canadians Act (SFCA).

As defined in the *Food and Drug Regulations*, Principal Display Panel means, in the case of a label applied to a prepackaged product that is subject to the Consumer Packaging and Labelling Act (CPLA) the principal display panel as defined in the Consumer Packaging and Labelling Regulations (CPLR) (see CPLR definition for Principal Display Panel above), in the case of a label applied to a prepackaged product that is not subject to the Consumer Packaging and Labelling Act, that part of the label applied to all or part of the side or surface of the container that is displayed or visible under normal or customary conditions of sale or use, and where the container does not have such a side or surface, that part of the label applied to any part of the container, except the bottom, if any, and in the case of a label applied to a food that is not a prepackaged product, that part of the label applied to all or part of the side or surface of the food that is displayed or visible under normal or customary conditions of sale or use. [B.01.001, FDR]

The recommendation to “turn over” MTB steaks does not apply to larger cuts such as beef roasts since typical cooking practices (e.g., oven roasting) for these larger cuts generally result in more even cooking. Also, roasts or larger cuts of MTB will typically experience longer cooking and resting times, which are contributing factors to reaching a consistent internal temperature throughout the piece of beef.

4.0 Label Format

The term “mechanically tenderized” must be included on the principal display panel or be displayed as part of the common name itself. It must appear in type that is as legible and prominent as the type used for the common name (for prepackaged MTB products and when displayed on non-prepackaged MTB products).

All cooking instruction statement(s), including the additional cooking instruction specific to steak, if applicable, must be present on the principal display panel “in type at least as legible and prominent as that of any other information other than the common name”. This means that the cooking instructions must appear in a manner that is as legible and prominent as other informational text on the principal display panel. The intent of these requirements is to ensure that the cooking instructions will be noticed by the purchaser or consumer.

For the purposes of these requirements:

- “informational text” includes mandatory information, other than the common name, and non-mandatory information related to the product such as claims, but does not include brand names, logos, graphics or other images;
- “prominent” refers to factors such as placement, contrast, colour, as well as type size and type weight.

The entire label must also comply with the *Food and Drug Regulations* and *Consumer Packaging and Labelling Regulations*. The *Consumer Packaging and Labelling Regulations* require a minimum type height of 1.6mm, based on the lowercase “o” for all mandatory information.

It is considered acceptable for all three requirements to appear on one label, which can be applied to all types of MTB products. Therefore, an MTB product that is **not** a steak may be labelled with the additional cooking instruction “turn steak over at least twice during cooking”.

4.1 Label Format Rationale

Declaring the mechanical tenderization process as part of the common name or equally as prominently on the principal display panel will provide an easily accessible place for consumers to look for important safety information. Similarly, the requirement for cooking instructions to be “as prominent as any other type on the principal display panel other than the common name” is intended to ensure prominence and legibility to any person under normal conditions of sale or use by Canadians. This will make it easier for consumers to find the recommended safe cooking instructions, while leaving flexibility for industry to position the statement with other text on the principal display panel.

The presence of consistent label text on MTB products in the Canadian market will allow Health Canada and other organizations to develop and structure effective consumer education activities that reinforce and complement the identification of MTB and associated safe cooking instructions as seen on the label.

5.0 Criteria for Acceptable MTB Labels and Examples

a) All of the following criteria must be met for prepackaged MTB products:

- The identification “mechanically tenderized” must appear either as part of the common name, or elsewhere on the principal display panel.
- “Mechanically tenderized” must be as legible and prominent as the type used for the common name.
- Cooking instructions must appear on the principal display panel.
- Cooking instructions must appear in a manner that is as legible and prominent as other informational text on the principal display panel (refer to section 4.0). If the MTB product is a steak, “turn steak over at least twice during cooking” must appear on the principal display panel in type that is consistent with the mandatory cooking instructions.

b) All of the following criteria must be met for non-prepackaged MTB products:

- The identification “mechanically tenderized” must appear on a label associated with the MTB product when offered for sale. For example, this includes the in-store signs adjacent to the product in the display case.

When the MTB product is not prepackaged when offered for sale but subsequently packaged at the consumer’s request:

- The words “mechanically tenderized” must appear on the principal display panel.

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- If the common name of the product is displayed on the packaged product, “mechanically tenderized” must be as legible and prominent as the type used for the common name. Or, if the common name is not displayed, “mechanically tenderized” must be shown in a manner that is legible and clearly and prominently displayed on the principal display panel, and therefore noticeable to the purchaser or consumer.
- Cooking instructions must appear on the principal display panel.
- Cooking instructions must appear in a manner that is legible and prominent in the context of any other informational text on the principal display panel.
- If the MTB product is a steak, “turn steak over at least twice during cooking” must appear on the principal display panel in type that is consistent with the mandatory cooking instructions.

The examples shown below demonstrate the requirements as set out in the *Food and Drugs Regulations* (B.14.022). This is not meant to be an exhaustive list of all acceptable scenarios. Please note that all other labelling requirements that apply to any meat product sold in Canada still apply.

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Figure 1. Prepackaged MTB steak with a separate label that contains all MTB labelling requirements.



Figure 2. Prepackaged MTB roast with all MTB labelling requirements included on the same label as other mandatory information.



Figure 3a. Non-prepackaged MTB steak that is on display at meat counter with an in-store sign indicating “mechanically tenderized”.



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Figure 3b. Non-prepackaged MTB product that has been subsequently packaged labelled with the MTB labelling requirements.



6.0 References

Catford, A., M-C. Lavoie, B. Smith, E. Buenaventura, H. Couture, A. Fazil and J.M. Farber (2013) Findings of the Health Risk Assessment of *Escherichia coli* O157 in Mechanically Tenderized Beef Products in Canada. *Int Food Risk Anal.* 3:3. doi: 10.5772/56713.

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