CANADIAN MEAT COUNCIL
CONSEIL DES VIANDES DU CANADA

Statement by the Canadian Meat Council on the
CBC Marketplace Episode Entitled "Food Secrets"
Aired November 15, 2013

Marketplace stated that "most tenderized beef has no labels."

Mechanically tenderized beef includes cuts such as some steaks or roasts in which the muscle fibres and connective tissue have been broken using sharp blades or needles. Mechanical tenderization neither adds nor removes ingredients or substances from the meat. The physical breaking of muscle fibres and connective tissue enhances meat tenderness and the eating experience.

Mechanical tenderization is a common practice that has been used for many years by individual consumers, foodservice establishments, retailers and meat processors. Following allegations that mechanical tenderization could transport some surface bacteria to the interior of meat, the Canadian Meat Council announced on May 17, 2013 that its member companies would label prepackaged mechanically tenderized beef products. Furthermore, since July 2, 2013 the Canadian Food Inspection Agency has required the labelling of all prepackaged meat that has been mechanically tenderized by a federally inspected meat plant. The Canadian Meat Council regrets that Marketplace failed to note these facts.

Health Canada encourages the use of point of sale "labels, signage or other means" to identify mechanically tenderized beef cuts that have not been prepackaged by a federally registered meat plant. Marketplace identified a single store that had labelled mechanically tenderized meat, but did not note that a major retail chain labels mechanically tenderized meat in stores located across Canada.

Should consumers be uncertain whether a product has been mechanically tenderized, clarification should be sought from the retailer or foodservice provider. The Canadian Meat Council regrets that Marketplace may not have posed this question. The responses would have provided a basis on which to substantiate the validity of the statement by Marketplace that "most tenderized beef has no labels."

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Marketplace stated that "nitrites may be one reason deli meats are linked to cancer."

Nitrite (NO2-) and nitrate (NO3-) are naturally occurring ions found in the environment and in some foods.

Vegetables are, by far, the major dietary source of nitrate for humans, providing over 85% of daily intake. Vegetables containing the highest levels of nitrate include red beets, spinach, radishes, celery, lettuce, cabbage, fennel, broccoli, cucumbers and leeks.

Nitrate is naturally converted into nitrite, predominately by saliva. Albeit in significantly lesser amounts, other sources of nitrite are cured meat, fish, dairy products and drinking water.

Canada's Meat Inspection Regulations mandate the addition of at least 100 mg/kg of nitrate and nitrite during the preparation of cured meats to prevent spoilage and protect against listeriosis and botulism. Two commonly used sources of the required nitrite are sodium nitrite and cultured celery extract.

Salt (sodium chloride or table salt) containing some sodium nitrate and lesser amounts of sodium nitrite as impurities was used since the time of the ancient Egyptians and Romans as well as the early Europeans to preserve meat. From these early experiences evolved products such as hams, bacon, sausages, bologna, salami and pepperoni.

Today, the use of sodium nitrite is acknowledged by regulatory authorities around the world as an important contributor to food safety. In addition, a rapidly expanding body of more recent scientific research is demonstrating that the advantages of nitrite extend well beyond food safety to include a diverse and critical array of potent benefits for human health.

During the 1950s and 1960s, some animal studies indicated the potential for nitrite to form carcinogenic *N-nitrosamines*. In the case of cured meats, *N-nitrosamine* formation may occur when secondary amines react with nitrous acid produced from nitrite at very high temperatures, for example, when bacon is fried at 170°C.

As potential public health concerns were related to the formation of *N-nitrosamines* rather than to the nitrite, government regulations introduced in the 1970s limited the addition of nitrite to cured meat products and required the inclusion of *N-nitrosamine* formation inhibitors in bacon, such as ascorbic acid (vitamin C), erythorbic acid and alpha-tocopherol (vitamin E).

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From the 1980s to 2000s, the U.S. Food and Drug Agency and the U.S. National Toxicology Program conducted numerous assessments and studies which determined consistently that nitrite is safe at the levels consumed in the diet.

In 2006, a review of various epidemiological investigations that endeavoured to assess the potential carcinogenicity of nitrate and nitrite was conducted by the International Agency for Research on Cancer (IARC). The IARC report concluded that, under certain conditions, the nitrate humans consume could be altered to form carcinogenic nitrosamines. However, newly published cohort studies do not support this conclusion.

Emerging research suggests nitrite from dietary sources can form nitric oxide. Identified as one of the most important cellular signalling mechanisms in the body, maintaining nitric oxide balance is critical for optimal health, such as improved energy, memory, stamina, sexual function and disease prevention. The lack of nitric oxide production can lead to hypertension, atherosclerosis, peripheral artery disease, heart failure and thrombosis, resulting in heart attack and stroke, all of which have been treated by dietary nitrite interventions.

The profound and far-reaching significance of this revelation was of such significance that, in 1998, the Nobel Prize in Physiology or Medicine was awarded for its discovery.

The Canadian Meat Council regrets that Marketplace failed to note the uncertainty associated with the alleged nitrite-cancer linkage and the profound benefits of nitric oxide that are being revealed by emerging research.