

Submission on P1019 – Carbon monoxide as a processing aid for fish

Private submission by:

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I have had 32 years' experience in seafood research but have never worked on carbon monoxide and am not aware of any of the companies that I have worked for have ever used this technology.

However I oppose this FSANZ proposal on the following grounds:

1. The proposal claims that because carbon monoxide (CO) has an ongoing technological function in fish (colouring and/or colour fixing), it should not be permitted to be used as a processing aid. On this basis, many currently approved processing aids would also have to be removed from the list of approved processing aids. For example FSANZ recently added *Listeria* phage P100 as a permitted listericidal treatment. This treatment will reduce the number of *Listeria* on food at the point of treatment but it will also have an ongoing effect of limiting contamination and growth of *Listeria* throughout the shelf life of the food. The purpose of applying CO to fish is to fix the colour of the fish at the time of processing but it will also have the ongoing effect of keeping the colour during the shelf life of the fish. The same could be said of a number of decolourants and bleaching agents. They change the colour at the time of processing but also have the ongoing effect of keeping the colour in its desired state during the shelf life of the product. For FSANZ to change the approach to CO but not to a range of other permitted processing aids would be inconsistent.
2. Changing the status of CO is likely to have implications for other processing aids such as those used for moisture retention (Sackton 2013). This may have major implications for trade, e.g. in the US it may lead to products treated with processing aids no longer being classified as raw fish meaning that tariffs would rise from 0% to 12.5% (Sackton 2013). It seems that FSANZ raising this issue may have already negatively influenced this debate contributing to a possible increase in tariffs on some fish imported into the USA.
3. The information circulated by FSANZ in proposal P1019 is misleading with regard to its acceptance by the USA. The proposal states "The treatment of fish with carbon monoxide gas is not permitted in the USA" (p2) and "The treatment of fish with carbon monoxide gas is not permitted in other countries/regions, such as USA" (p5). While it may be technically true that CO is not specifically "permitted" this statement gives the impression that it is "forbidden" which it is not. Other submitters may have been misled by this statement and supported the proposal on this basis. The proposal refers to Acheson (2007) as presenting the US position and this clearly shows that US FDA does not question the determination of the use of CO to fix colour in tuna as "tasteless smoke" as GRAS (generally recognised as safe). This means that the application of CO to tuna is not forbidden in the US and

companies can use CO without it being treated as an additive. Although the Acheson testimony is referred to in P1019 and submitters had the opportunity to read the submission themselves, many would not have done so and taken the surface reading of P1019 to say that Acheson stated CO is not permitted which he does not say. For my own benefit I made enquiries with the FDA to see whether the position put forward by Acheson in 2007 had changed and it had not (See appendix 1). The use of CO is not forbidden in the US however it is required to be labelled.

4. P1019 makes the claim that CO treatment of fish may have negative impacts on food safety due to its ability to mask bacterial spoilage and thereby increase the risk of histamine poisoning. I have considerable expertise in histamine poisoning (e.g. in July 2012 I served as part of an FAO/WHO 14 member panel of international experts tasked to address the public health risks of histamine and other biogenic amines from fish and fishery products, recommending regulatory limits and associated sampling plans. While P1019 correctly states that “histamine can reach high levels in carbon monoxide treated tuna while the colour remains acceptable” the same can be said of tuna not treated by CO. As stated by Acheson (2007) “There is no scientific evidence that tasteless smoke or CO affects either the formation of histamine or the ability to detect histamine formation through sensory analysis” (see appendix 3 for full text).
5. The argument is made that “carbon monoxide treatment has the potential to make inferior quality fish appear aesthetically more pleasing to consumers.” Colour is one important quality aspect of fish such as tuna. Tuna is prized for its red colour. Thus, rather than hiding poor quality fish CO actually preserves an important quality characteristic of tuna. It is true that CO does not affect the odour and flavour of the fish and these attributes may have deteriorated and CO treated fish that has high colour quality may be decomposed. However colour should not be used as a measure of bacterial decomposition as colour can be negatively affected by many other processes such as freezing. As well state by Acheson (2007), “The most effective means of detecting decomposed fish is by odor.”

To my mind, the biggest issue with regard to the use of CO in fish is one of the consumers’ right to know how their fish has been treated. Because in Australia and New Zealand processors are not required to declare the use of processing aids to customers, consumers are denied the ability to make an informed choice. I would prefer that the US FDA approach where “Seafood products treated with carbon monoxide are required to bear labeling with the ingredient “carbon monoxide.”” However, this should apply to all processing aids, not just CO.

Reference

Acheson D 2007. Statement on FDA Import Protection Plan.

<http://www.fda.gov/NewsEvents/Testimony/ucm109636.htm>.

Sackton J 2013. Carbon Monoxide Issue may explode at US customs. SEAFOOD.COM NEWS 2013(Feb 7): 1.

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Appendix 1. Samuels Statement

Jan 15 2013 statement from Robert D. Samuels, Consumer Safety Officer, Division of Seafood Safety (HFS-325), Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration

“The testimony given by FDA before Congress in 2007 represents FDA’s position and the basis for its position with regard to carbon monoxide in fishery products. But to answer your question directly, FDA has not approved the use of carbon monoxide in fishery products and, as far as I know, has not received a petition from the industry to do so.

A typical response we provide the public (industry, consumers, or others) when inquired about this compound in fish is:

To my knowledge, FDA has never received nor reviewed a GRAS notice (GRN) for the use of carbon monoxide in seafood. The agency has evaluated and responded to GRAS notices regarding the use of carbon monoxide in modified atmospheric packaging of meat products (GRNs 83, 143, and 167) (see <http://www.accessdata.fda.gov/scripts/fcn/fcnNavigation.cfm?rpt=grasListing>). The agency has also reviewed a GRN for the use of tasteless smoke on raw tuna and found no reason to disagree with the conclusion that the use of tasteless smoke on raw tuna before it is frozen to preserve its taste, aroma, texture, and color is GRAS (GRN 15). The response to the latter may be of interest to you (see <http://www.fda.gov/Food/FoodIngredientsPackaging/GenerallyRecognizedasSafeGRAS/GRASListings/ucm154892.htm>).

Recognize that interested parties may make an independent determination that the use of a substance is GRAS. Under the Federal Food, Drug, and Cosmetic Act, there is no legal requirement to inform FDA of an independent GRAS determination.

The statement of identity on the label of the treated fish should declare the product as being a treated product and food introduced into interstate commerce is required to bear a label with the common or usual name of each ingredient (see sections 403(a)(1) and 403(i)(2) of the Federal Food, Drug, and Cosmetic Act). Seafood products treated with carbon monoxide are required to bear labeling with the ingredient “carbon monoxide.” The term “CO” is not a common or usual name for a food or food ingredient and should not be used on the labeling. In addition, when a chemical preservative is added to the food to retain color, such as carbon monoxide, the function of the preservative must be declared in accordance with 21 CFR 101.22(j) (e.g., “carbon monoxide to promote color retention”). As a consequence of inclusion of a preservative, the treated products must not be represented as “fresh” or “fresh frozen” (21 CFR 101.95).

Moreover, the treated product is adulterated if the treatments are used to conceal damage or inferiority in any manner or to make the seafood appear better or of greater value than it is (see sections 402(b)(3) and (b)(4) of the Federal Food, Drug, and Cosmetic Act) such as would be the case if a processor were to apply the treatment or ingredient to a decomposed seafood product. “

Appendix 2 Sackton article

SEAFOOD.COM NEWS by John Sackton Feb 7, 2013

Note: This article has been corrected from the original published article after Sea Delight confirmed that they have not paid any higher duty due to any change in classification of tuna; instead the issue is being discussed at CBP, but at this time is not resolved.

The seafood industry could be blindsided by a sudden lurch in US policy towards CO treated tuna.

Since 2000, the FDA has regarded the use of tasteless smoke, a patented process to deliver Carbon monoxide to tuna to preserve color, as GRAS, i.e. Generally Recognized As Safe. This is a benign classification and is the FDA's way of saying there is no evidence of any risk in using GRAS ingredients in food processing.

At the same time, yellowfin tuna imports, treated and untreated, have been classified under the 0304 US tariff classification, meaning they are considered raw fish or fillets, and no duty is charged.

Sea Delight, a major importer of CO treated Yellowfin tuna, and the rest of the industry face potential demands for millions of dollars in duty, if customs makes a determination to reclassify yellowfin tuna to chapter 1604, which covers prepared and processed seafood.

If this customs classification stands, the duty rate on CO treated yellowfin tuna would rise from zero to 12.5%.

This issue is rapidly developing for the US seafood industry on two tracks. One is possible FDA reconsideration as to whether it will allow CO treatment to continue to come under the 'GRAS' standard. The US is the only major importing country that has not announced a change or banned CO treatment on fish products. Such treatment is not allowed in the EU, by Canada, or Japan, and Australia and New Zealand have just announced they are reconsidering usage as well.

The FDA has asked industry to fund research showing the CO treatment meets the GRAS standard. NFI has encouraged the importers and processors involved to take up this request from the FDA, and be prepared to defend the GRAS status. FDA has taken suggestive steps in their documentation and writing that imply they no longer agree with their prior findings.

But the more immediate issue is customs, which is on a totally separate track. Last year, Sea Delight filed a ruling request involving the scope of the term fillets, and in response, Customs and Border Protection (CBP) proposed a reclassification of frozen tuna treated with tasteless smoke or carbon monoxide to a 'prepared or preserved' item under tariff heading 1604.

Such a change would raise the tariff on frozen yellow fin tuna to 12.5%, from what is now mostly 0%, and would bring in millions of dollars to the US treasury.

In at least one port of entry, customs proposed this reclassification, under which Sea Delight would be required to pay a higher duty, but no final determination has been made. Instead, the classification issue is now being considered at the national level.

Should the reclassification be upheld, the amounts claimed by customs would have to be paid before a court challenge could be filed at the Court of International Trade. Such cases take several years, if past experience is any guide.

Tuna is not the only product treated with carbon monoxide. Most frozen tilapia is treated also, to preserve color, and it is used on other fillets as well. If this reexamination of processing aids, which are normally not considered in setting tariffs, was to spread to other fillets, it could impact the entire industry. Virtually all frozen fillets of some species are treated with moisture retention agents and processing aids in the overseas production process.

Such a major change should not be simply a bureaucratic decision, but should be examined in public by the FDA and Congress.

The prospect of a regulatory change regarding acceptance of carbon monoxide as a processing aid should be handled through normal FDA and congressional channels. It should not be decided by customs, when the prospect of huge cash infusions to the US treasury is sure to be a consideration in their decision.

Sea Delight, who is the subject of the initial rulings, has been canvassing the industry to raise money for a legal challenge if one becomes necessary.

Among the constellation of abnormal risk factors for sharply higher costs facing the industry this year, we now need to add yellowfin tuna reclassification to the shrimp CVD case.

Acheson D 2007. Statement on FDA Import Protection Plan.

Sackton J 2013. Carbon Monoxide Issue may explode at US customs. SEAFOOD.COM NEWS 2013(Feb 7): 1.

Appendix 3. Extract from Acheson testimony p 6

“ ... color change is not a reliable means of screening out decomposed from non-decomposed fish, or of screening out histamine containing from non-histamine-containing fish. Color change routinely occurs as a result of the freezing and thawing process, unassociated with the kinds of abuse conditions that produce either histamine or decomposition.

The most effective means of detecting decomposed fish is by odor. This is a highly effective tool for eliminating fish that are unfit for food because of decomposition. This is the method used by FDA examiners and regulatory examiners around the world. However, it has only limited utility in screening fish, such as tuna, for histamine content. The type of abuse conditions that lead to fish decomposition (e.g., being held at low temperature for extended periods of time) often do not lead to histamine formation in fish, which is associated with high temperature abuse. There is no scientific evidence that tasteless smoke or CO affects either the formation of histamine or the ability to detect histamine formation through sensory analysis.”