

CRITICISM OF THE Draft COMMISSION REGULATION

of

amending Regulation (EC) No 1924/2006 of the European Parliament and of the Council with regard to the list of nutrition claims

(Text with EEA relevance)

CLAIM I] SOURCE OF OMEGA-3 FATTY ACIDS

A claim that a food is a source in omega-3 fatty acids, and any claim likely to have the same meaning for the consumer, may only be made where the product contains minimum 0,3g alpha-linolenic acid per 100g [and per 100kcal], or minimum 30mg of the sum eicosapentaenoic acid and docosahexaenoic acid per 100g [and per 100kcal].

RESPONSE:

1. This claim is unscientific as the evidence since the early 1970s does not support any such biochemical nor nutritional nor health linkage of alpha-linolenic acid with the sum eicosapentaenoic acid and docosahexaenoic acid.

2.. The long chain omega 3 fatty acids include the all-cis-7,10,13,16,19-docosapentaenoic acid: trivial name clupanodonic acid, ω 3DPA, 22:5 ω 3) which in some foods such as meat and offal (e.g. liver and kidneys) from ruminants and large herbivores, is in greater proportion than either eicosapentaenoate (EPA) or docosahexaenoate (DHA) (1). The docosapentaenoic acid is not mentioned and should be.

3. The nutritional relationship and health relevance between alpha-linolenic acid and the different members of the omega 3 fatty acid family have been dealt with in correspondence from Professors Sinclair and Galli, Dr. Von Shacky, Lands, Brenna, Hibbeln and others to Professor Jack Winkler who is making a separate submission. These independent scientists equally have identified the lack of an evidence base in this EU draft regulation. Sinclair showed in 1975 (2) that even in the rat the proportion of alpha-linolenic acid that was converted to docosahexaenoate in the developing rat brain was very low. This fact has been confirmed and amplified by many authors since in rats, baboons and humans in whom the conversion efficiency is much lower. This data has been determined from circulating lipids with the likelihood from the data on rats and baboons that it would be even lower for the human brain. I will therefore leave this topic to their statements in evidence on the universal disagreement with the equation of alpha-linolenic acid to longer chain length omega 3 fatty acids. The alpha-linolenic acid is important in its own right and should be treated as such. The approach is analogous to treating babies purely as precursors and mathematical approximations for adults. Babies are quite different to adults, have their own value and properties, are definitely quite different and indeed may never grow up to be an

adult. Moreover, the number that will grow up to become prime minister will be a very small proportion.

On the grounds of 2 above alone this EU statement should be rejected and re-drafted.

CLAIM II] HIGH OMEGA-3 FATTY ACIDS

A claim that a food is high in omega-3 fatty acids, and any claim likely to have the same meaning for the consumer, may only be made where product contains minimum 0,6g alpha-linolenic acid per 100g [and per 100kcal], or minimum 60mg of the sum eicosapentaenoic acid and docosahexaenoic acid per 100g [and per 100kcal].

RESPONSE

This statement promulgates the same falsehood as in [I] above. Moreover it has no relationship to most real foods and is only relevant to commercial products. Alpha-linolenic acid could be found at or above this level only in a few natural products such as linseeds, linseed oil, a few other commercial oils, and beans of a few legumes (3). The principal primary source is photosynthesis. Thus it is found in green leaves such as grass, cabbage, spring greens etc.

Spinach is an important example and a rich plant source if measured as a proportion of the digestible energy. It contains 0.35g fat /100g plant leaf in the raw state. Of that, approximately 0.2g is alpha-linolenic acid. The 0.6g does not here reflect reality (nor does the 0.3g of claim I) and would deny the ability of teachers to inform students, adults and children that an important value of green foods is that they are rich in alpha-linolenic acid as a proportion of digestible energy, supported by β -carotene, vitamin C and vitamin E etc. This EU regulation will have the responsibility of disseminating ignorance and distortions of the nutritional value of many natural products. Incidentally, alpha-linolenic acid might also be found in the body fat and tissues of animals that eat grass and other green foods but then few commercially raised animals have a diet of grass these days.

Note that this regulation would mean that the primary source of alpha-linolenic acid as in green foods (e.g. spinach) could not even be claimed to be a “source” of alpha-linolenic acid. These two claims (I & II) combined are grossly misleading. They would convey an inadequate understanding of lipid biology with predictably, adverse consequences to consumers’ knowledge and food choices.

CLAIM III] HIGH MONO UNSATURATED FAT

A claim that a food is high in monounsaturated fat, and any claim likely to have the same meaning for the consumer, may only be made where at least 45% of the fatty acids present in the product derive from monounsaturated fat under the condition that monounsaturated fat provides more than 10% of energy of the product.

RESPONSE:

A claim should be precise if it is to have legal standing. The FAO/WHO consultation in 1976 (4) defined the mono-unsaturated fats and gave a considerable amount of space to the difference between cetoleic and erucic acids. These are two fatty acid, monounsaturated isomers of the 22 carbon chain lengths: there was evidence one was cardio-toxic, the other not: a matter of some concern at the time which was dealt with by genetic modification of the rape seed. Using the standard nomenclature as defined in the FAO/WHO report (3) without specifying the various positions of the monounsaturated double bond the following are common monounsaturated fatty acids:

16:1, 18:1, 20:1, 22:1, 24:1. There are also branched chain and odd carbon chain length monounsaturated fatty acids of varying chain length

The above fatty acids are present in different proportions in different foods and as different isomers with different properties. The report probably refers mainly to oleic acid (CH₃(CH₂)₇CH=CH(CH₂)₇COOH) in which the double bond is in the 9 position.

The lack of precision in this regulation is misleading and subject to abuse.

CLAIM IV] HIGH IN PPOLYUNSATURARED FAT:

A claim that a food is high in polyunsaturated fat, and any claim likely to have the same meaning for the consumer, may only be made where at least 45% of the fatty acids present in the product derive from polyunsaturated fat under the condition that polyunsaturated fat provides more than 10% of energy of the product.

RESPONSE:

This claim is unacceptable because it implies it is acceptable and useful to make a claim using a global chemical term to convey a single nutritional message. That is, a single message to cover a variety of different essential nutrients which have

(i) Different individual and nutritional implications (4)

(ii) Exist in 3 families with the balance between the principle two families (ω 3/ ω 6) being important for health (4,5,6). A “food high in polyunsaturated fat” could be disastrously unbalanced (7). A diet (or convenience meal) made up of such unbalanced foods is acceptable to this regulation but could have adverse health implications [7] exposing the EU expert committee to litigation.

(iii) Moreover the ω 3 and ω 6 families contain members that compete in physiological functions (8).

(iv) The proportion of polyunsaturated fat in cod fish meat is about 5% of the energy. So it does not provide more than 10% of the energy. However, much of the lipid is phosphoglyceride which contains 47% Docosahexaenoic acid (9). So this is an important source of a brain specific fatty acid in a phospholipid form. Fish oil contains 8% DHA and about 12% EPA so there is 80% of mostly stearic, oleic and palmitic acids as triglyceride, the physiological fate of which is the lymphatic circulation after absorption, distribution in chylomicrons and adipose fats etc. The phospholipid by contrast is absorbed through the portal route and incorporated preferentially into high density lipoproteins. Studies in baboons have described a greater efficacy of the phospholipid for the developing brain (10). According to this regulation, the highly valuable lipid of cod fish meat is not worth a mention.

(v) The globalisation of the polyunsaturated fatty acids is biologically inappropriate. At 18 carbon chain lengths, the ω 6 family includes linoleic acid, gamma-linolenic acid and cis-9, trans -11, conjugated linoleic acid each possess different biological properties (e.g,11) and occur in different foods. Cyclo-oxygenase products of di-hommo-gamma-linolenic acid and arachidonic acid may operate synergistically to prevent platelet aggregation or adhesion. On the other hand, the eicosanoid products of arachidonic acid may be pro-inflammatory and pro thrombogenic depending on circumstances. Moreover, eicosapentaenoic acid can down regulate the inflammatory and thrombogenic properties associated with arachidonic acid (12). It is unscientific and therefore both meaningless and dangerous to lump all of these separate and opposite functions as one.

CLAIM V] HIGH UNSATURATED FAT

A claim that a food contains high amount of unsaturated fat and any claim likely to have the same meaning for the consumer may only be made where the amount of unsaturated fat is 70% of the total fat content in the product under the condition that unsaturated fat provides more than 10% of energy of the product. "

RESPONSE:

This claim should be re-written with the science in mind. It implies it is acceptable and useful to make a claim using a global chemical term to convey a nutritional message similar to and with the same misleading stance of III and IV.

Both IV and V imply a uniformity of composition and nutritional meaning which does not exist. It entrenches ignorance.. Neither IV nor V, could have any legal value in a court of law as they have no evidence base. Indeed, that criticism applies to all of the above.

CONCLUSION:

This EU set of recommendations is not state of the art and should be withdrawn.

- Its language and tools are those of the state of the art in the 1960s.
- The regulations are flawed to the point that they open the door to litigation.
- The regulations should be re-written in a manner supportable by contemporary knowledge.
- These regulations display an unacceptable reflection of the science and the facts as presently known in a manner that would be damaging to consumers and teachers. For example, its recommendation put fatty acids thought to be cardio-toxic together with others thought to be healthy.

Whilst it is common practice to talk about groups of fatty acids for convenience, it is not acceptable where litigation or health could be involved. To establish wording appropriate to 2009, there needs to be clearly defined objectives aimed at providing meaningful information to the public and legislators. Any text should be then sent for peer review. The present format distorts the science and will mislead. Regulations on labelling should both reflect the science and help the public to a better understanding of it. The failure to arrive at regulations that have a valid evidence base, makes this set of recommendations legally unsafe.

References

(These chosen are by no means exclusive but highlight the historical nature that supports my claim of the terminology used here being state of the art 30 years ago. A new paradigm is required to convey to the public information that is useful, accurate and state of the art in 2009)

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