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COMMENTS OF THE NATIONAL HEALTH FEDERATION (NHF)

Agenda Item 4.5: Codex Committee on Food Additives

The National Health Federation (NHF) was founded in 1955 and is an international consumer organization representing those individuals interested in better health and health freedom. NHF's comments here are intended to address JECFA's findings supporting an Acceptable Daily Intake (ADI) for aspartame of 40 mg/kg of body weight. This would be a mistake since such a level has been shown to be toxic to human health.

Building upon its previous comments orally argued and submitted in writing at the 40th, 43rd, and 45th Sessions of CCFA in Beijing and Xiamen, China, the NHF respectfully submits the following comments on the toxicity of aspartame.

1. Aspartame Contains Methanol and Is a Dangerous Toxicant

Contrary to the highly questionable, industry-funded studies that have fooled some scientific bodies, aspartame and its variations (Advantame and Acesulfame potassium) are well-demonstrated brain and body reproductive toxicants and carcinogens. This effect stems largely, but not entirely, from the artificial sweeteners' methanol effect.

Methanol (methyl alcohol, wood alcohol) is a poisonous substance^{/1} that is released within hours of consumption of an aspartame product,^{/2} after hydrolysis of the methyl group of the dipeptide by chymotrypsin in the small intestine.^{/3}

Absorption in primates is hastened considerably if the methanol is ingested as free methanol^{/4} as it occurs in soft drinks after decomposition of aspartame during non-cooled storage or in other foods after being heated. Regardless of whether the aspartame-derived methanol exists in food in its free form or still esterified to phenylalanine, a very unhealthy percentage of the aspartame intake of an individual will be absorbed as methanol within hours of consumption, if not even sooner.^{/5}

Methanol has no therapeutic properties and is only considered to be a toxicant.^{/6} The ingestion of two teaspoons is lethal in humans.^{/7} Methyl alcohol produces the Methyl alcohol syndrome, consistently, only in humans and no other test animal, including monkeys.^{/8}

The greater toxicity of methanol to man is rooted firmly in the limited biochemical pathways available to humans for detoxification. The loss of uricase, formyl-tetrahydrofolate synthetase,^{/9} and other enzymes^{/10} during the last many thousands of years of human life sets man apart from all laboratory animals including monkeys.^{/11} As a result, there is no generally accepted animal model for methanol toxicity.^{/12} Humans suffer "toxic syndrome" at a minimum lethal dose of < 1 gm/kg, **much** less than that of monkeys, 3-6 g/kg.^{/13} The minimum lethal dose of methanol in rats, rabbits, and dogs is 9, 5, and 7 g/kg respectively^{/14}; ethyl alcohol is more toxic than methanol to these test animals.^{/14}

The United States Environmental Protection Agency in its Multimedia Environmental Goals for Environmental Assessment recommends a minimum acute toxicity concentration of methanol in drinking water at 3.9 parts per million, with a recommended limit of consumption below 7.8 mg/day.^{/15}

This report clearly indicates that methanol "is considered a cumulative poison due to the low rate of excretion once it is absorbed. In the body, methanol is oxidized to formaldehyde and formic acid; both of these metabolites are toxic."^{/16}

In particular, the formaldehyde metabolite of methanol is an acknowledged deadly neurotoxin. Yet, a one-liter aspartame-sweetened beverage contains about 56 milligrams of methanol. Heavy users of aspartame-containing products consume as much as 250 mg of methanol daily, or 32 times the EPA safety limit.

Some have argued that the food additive is no different in having methanol than natural fruits. Yet, the methanol found in fruits and vegetables is bound to pectin, which takes it safely out of the body.¹⁷ So, there is no comparison in toxicity between the naturally sourced fruits and the synthetic sweetener aspartame.

Methanol from aspartame is one of the reasons that these toxicants are unhealthy for humans and should not be permitted at the 40 mg/kg level.

2. Aspartame Is an Unjustified Food Additive

Codex states in its Preamble (REP13/FA) that the use of food additives is justified only when such use has an advantage, does not present an appreciable health risk to consumers, does not mislead the consumer, and **serves one or more technological functions**. And, according to basic GMP principles, the quantity of a food additive added to food shall be limited to the lowest level necessary to achieve the **intended technical effect**.

What exactly *is* the technological function of aspartame that cannot be achieved with safe, natural substitutes such as stevia and Jerusalem artichoke nectar?

3. The JECFA Assessment of Aspartame Is Conflicted and Cannot Be Considered

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) has been implicated in a blatant conflict of interest over aspartame's classification as carcinogenic.¹⁸ JECFA has once again declared that the toxic artificial sweetener aspartame is "safe" at the acceptable daily intake (ADI) amount of 40 mg/kg of body weight.

Yet, JECFA's position stands in stark contrast to that taken by the World Health Organization (WHO) subsidiary body called the International Agency for Research on Cancer (IARC), which in its July 14, 2023, hazard and risk assessments of aspartame classified aspartame as "possibly carcinogenic." So, why don't the two scientific bodies agree on this issue?

As many may recall, aspartame is the sweetener in Diet Coca-Cola and most other "zero calorie" diet drinks. Worldwide revenue projections for artificial sweeteners (including aspartame) for the year 2023 are currently pegged at \$23.4 billion dollars.¹⁹ And that doesn't even include the dollar value of the finished-product sales for, say, Diet Coke, of which aspartame is an integral ingredient. So, aspartame occupies a major market niche in the strategic marketing plans of soft drink companies and food businesses where aspartame is also heavily used as a sweetener. No wonder then that these companies, such as Coca-Cola and Pepsi, have created front groups to influence and control government regulators.²⁰

While a May 2023 WHO guideline also cautions consumers not to use any non-sugar sweeteners for weight control, **industry** studies presented to JECFA and the mainstream media have whitewashed aspartame, just as they were when submitted to the U.S. Food and Drug Administration (FDA), which originally approved the toxic sweetener back in the 1980s. The late Dr. Betty Martini, an authority on aspartame science, repeatedly demolished these feculent industry studies and denounced the rampant conflicts of interest that created them.²¹

Speaking of which, a reporter with the French daily *Le Parisien* recently observed that at least six out of the thirteen JECFA panel members have ties to the industry front group called International Life Sciences Institute (ILSI).²² This observation parallels those of the National Health Federation's where it has seen industry front groups' influence flaunted at Codex Alimentarius meetings amidst their perceived cozy relationships with member-state delegations and Codex science officers.

In the case of JECFA and its recent decision on an ADI for aspartame, we have clear signs of a conflict of interest that render its "scientific" decisions highly questionable. Both the chairwoman and the vice chairman of the JECFA aspartame panel have ties to ILSI, as do four other panel members.

Here are the ILSI-connected JECFA panelists who never should have participated in any way in JECFA discussions and decisions concerning aspartame or any other artificial sweeteners:

- Diane Benford (Chairwoman) – former member of an ILSI Europe expert group
- Richard Cantrill (Vice-Chairman) – former participant in an ILSI Europe panel
- Sue Barlow – former member of the ILSI International Food Biotechnology Committee
- Jean-Charles Leblanc – former member of an ILSI Europe expert group

- Josef Schlatter – former member of ILSI Health and Environmental Sciences Institute (HESI) board of trustees
- Michael DiNovi – former member of an ILSI Europe expert workgroup

4. For Safety Reasons Codex Must Not Approve this ADI for Aspartame

A serious consequence of the mistake of not being aware of the dangerous metabolism of the methanol in aspartame is that when scientists calculated its ADI, they did not include the toxic properties of the methanol in their estimations and it was calculated incorrectly by a factor of 35. If one were to correctly take into account the ADI of methanol, then the ADI for aspartame should drop to 1.14 mg/kg body weight.

¹ Windholz, M., *Merck Index*. 9th ed., Rahway, New Jersey: Merck & Company Inc. (1976).

² Staples, R.E., *Teratogenicity of Formaldehyde. Formaldehyde Toxicity*. JE Gibson, Ed., Hemisphere Publishing Company, pp 51-60 (1983).

³ Oppermarm, JA, Muldoon, E and Ranney, RE, "Metabolism of Aspartame in Monkey," *J. Nutr*, 103:1454-1459 (1973).

⁴ *Ibid.*

⁵ Staples, RE, *Teratogenicity of Formaldehyde. Formaldehyde Toxicity*. JE Gibson, Ed., Hemisphere Publishing Company, pp 51-60 (1983).

⁶ Hadden, L, et al., *Clinical Management of Poisoning*, Philadelphia, Pennsylvania: W. B. Saunders Company (1983).

⁷ Gosselin, RE, *Clinical Toxicology of Commercial Products*, 4th ed. Gosselin, RE, et al., eds., Baltimore, Maryland: Williams & Wilkins (1981).

⁸ Roe, O, "Species Differences in Methanol Poisoning," *CRC Critical Rev. in Tox.*, pp. 275-286, October (1982); Tephly, TR, Watkins, WD and Goodman, JI, "The Biochemical Toxicology of Methanol," *Essay Toxicol.*, 5:149-177 (1974).

⁹ Roe, O, "Species Differences in Methanol Poisoning," *CRC Critical Rev. in Tox.*, pp. 275-286, October (1982).

¹⁰ Goodman, JI and Tephly, TR, "Peroxidative Oxidation of Methanol in Human Liver: The Role of Hepatic Microbody and Soluble Oxidases," *Res. Commun. Chem. Pathol. Pharm.*, 1(4):441-450 (1970).

¹¹ Roe, O, "Species Differences in Methanol Poisoning," *CRC Critical Rev. in Tox.*, pp. 275-286, October (1982).

¹² *Ibid.*; Wimer, WW, Russell, JA and Kaplan, HL, *Alcohols Toxicology*, Park Ridge New Jersey, Noyes Data Corporation (1983).

¹³ Roe, O, "Species Differences in Methanol Poisoning," *CRC Critical Rev. in Tox.*, pp. 275-286, October (1982); Wimer, WW, Russell, JA and Kaplan, HL, *Alcohols Toxicology*, Park Ridge New Jersey, Noyes Data Corporation (1983).

¹⁴ Roe, O, "The Metabolism and Toxicity of Methanol," *Pharmacol. Rev.*, 7:399 (1955). See also RH Nair et al., Mahatma Gandhi U, *Food Chem Toxicol*, 2011.03.02: Rich Murray 2011.03.12

http://rmforall.blogspot.com/2011_03_01_archive.htm (Saturday, March 12, 2011) ;

<http://www.ncbi.nlm.nih.gov/pubmed/21376768>; and Abhilash M, Paul MV, Varghese MV, Nair RH, "Effect of long term intake of aspartame on antioxidant defense status in liver," *Food Chem Toxicol*, 2011 Mar 2. [Epub ahead of print]

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¹⁵ Cleland, JG and Kingsbury, GL, "Multimedia Environmental Goals For Environmental Assessment," U.S. Environmental Protection Agency: EPA-600/7-77-136b, E-28, November 1977.

¹⁶ *Ibid.*

¹⁷ See http://www.mpwhi.com/aspartame_methanol_and_public_health.pdf

¹⁸ Gary Ruskin, "Did a Coca-Cola front group sway a WHO review of aspartame?" *usrtk.org*, July 19, 2023, at <https://usrtk.org/sweeteners/coca-cola-front-group-who-review-of-aspartame/>.

¹⁹ "Revenue of the artificial sweeteners industry worldwide 2018 to 2028," *statista.com*, June 28, 2023, at <https://www.statista.com/forecasts/1201648/revenue-artificial-sweetener-market-worldwide>.

²⁰ For a fuller discussion of this lobbying group created by industry to influence public policy and science, see the excellent article by Stacy Malkan, "International Life Sciences Institute (ILSI) is a food industry lobby group," *usrtk.org*, July 10, 2023, at <https://usrtk.org/pesticides/ilsi-is-a-food-industry-lobby-group/>.

²¹ See, e.g., Betty Martini, "Rotgut Aspartame, Methanol Mania," *thenhf.com*, June 11, 2019, at <https://thenhf.com/rotgut-aspartame-methanol-mania/>. See also the documentary, *Sweet Misery: A Poisoned World*, and the medical textbook *Aspartame Disease: An Ignored Epidemic*, by Dr. H. J. Roberts, M.D.

²² Gaël Lombart, "Nouvelles recommandations sur l'aspartame : les liaisons dangereuses de certains experts avec Coca et Pepsi," *Le Parisien*, July 19, 2023, at <https://www.leparisien.fr/sciences/nouvelles-recommandations-sur-laspartame-les-liaisons-dangereuses-de-certains-experts-avec-coca-et-pepsi-19-07-2023-J3BYCFSOJJG7ZGHJEHFQVR5XFM.php>.