

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

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Agenda Item 2

CRD8

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES

Forty-Ninth Session

Macao SAR, China, 20-24 March 2017

MATTERS REFERRED BY THE CODEX ALIMENTARIUS COMMISSION AND OTHER SUBSIDIARY BODIES

Comments of Egypt, Kenya, Republic of Korea, Turkey, IFAC and IFU

Egypt

Matters Referred by the Codex Alimentarius Commission (CAC39), Matters for action 28th Session of Codex Committee on Processed Fruits and Vegetables (CCPFV 28), Responses to CCFA47 request on the use of “emulsifiers, stabilizers, thickeners” and “xanthan gum” (INS 415) in food categories “14.1.2” Fruit and Vegetable Juices” and “14.1.3 Fruit and Vegetable Nectars”

Egypt POSITION: There is a provided technical justification on the use of xanthan gum in juices and nectars that can support the proposed uses of all noted ingredients in food categories 14.1.2 and 14.1.3.

Specifically, we support adopting a use level for xanthan gum at GMP in fruit and vegetable juices and their nectars. Xanthan gum gives viscosity to beverages and stabilizes the appearance of a cloudy beverage by producing a suspension sufficiently viscous to prevent fine particles from settling. Further, it contributes to the organoleptic properties of the beverage by enhancing mouth feel and flavor release. This is especially important for nectars. In addition, vegetable juices contain particles in suspension that need to be stabilized in order not to sediment. Carrot juice, which is classified under 14.1.2.2, has total solids content around 6%. This is close, for instance, to the solids content of starfruit juice (5.9%). Therefore, xanthan gum can be used in vegetable juices and nectars to prevent fine particles from settling and its use is justified in fruit and vegetable juices and their nectars. Since xanthan gum has no numerical ADI specified the maximum level adopted should be GMP.

Kenya

Issue: Revised Food Additives Section of the Standard for Chocolate and Chocolate Products (CODEX STAN 87-1981). CAC39 requested CCFA to examine the use of gold (INS 175) and silver (INS 174)

Comments: Kenya proposes that both gold (INS 175) and silver (INS 174) should not be included in the GSFA until JECFA completes the safety evaluation of the additives. Their alternative additives should be used in the meantime.

Issue: CCPFV28 replies to the questions posed by CCFA47/48

Comment: Kenya agrees with the replies by CCPFV except in the suggestion of use of colours in French fries. We note that French fries are commonly consumed by children and that there is no technological justification of use of food colour in French fries.

Republic of Korea

Revised Food Additives Section of *Standard for Chocolate and Chocolate Products* (CODEX STAN 87-1981)

In regard to evaluation of gold(INS 175) and silver(INS 174), the Republic of Korea would like to provide our information for use. We permit gold leaf for use in alcoholic beverages and jams. Gold leaf is also allowed to be used in confectionaries, breads, rice cakes and ice cream for surface decoration purpose only. However, silver is not assigned as a food additive and it cannot be used in food due to safety concern.

Turkey

In the report on the 47th session of the Codex committee on food additives in Xian China 23-27 March 2015, recommendation no. 12 (p. 8) deals with thickeners:

[Recommendation 12: The Committee noted the need to add more specificity to the recommendation of the PWG. Therefore, the Committee agreed to ask CCPFV to clarify whether the use of “emulsifier, stabilizer, thickener” in general, and Xanthan gum (INS 415) in particular was technologically justified in food categories 14.1.2 “Fruit and vegetable juices” and 14.1.3 “Fruit and vegetable nectars” in general and in specific sub-categories].

The 28th session of Codex Committee on Processed Fruits and Vegetables (meeting in Washington D.C. from the 12th to 16th September 2016) considered the use of “emulsifiers, stabilizers, thickeners” and “xanthan gum” (INS 415) in Food Categories “14.1.2” Fruit and Vegetable Juices” and 14.1.3 “Fruit and Vegetable Nectars”:

The Committee noted that there were mixed positions for the use of emulsifiers, stabilizers and thickeners in food categories 14.1.2 and 14.1.3. The Committee noted that some countries reported that xanthan gum (INS 415) was not used, as there was no technological need for its use under these food categories. In their view, only pectin (INS 440) was technologically justified for use in certain products in the food categories listed. Other countries reported that xanthan gum, carboxymethyl cellulose and gellan gum (INS 418) were technically justified and being used as a thickener and stabilizer in juices.

Issues/Discussions:

The use of food additives in foodstuffs necessitates not to pose a safety concern to the health of the consumer at the level of use proposed, **existence reasonable technological need** that cannot be achieved by other economically and technologically practicable means and not to mislead the consumer.

Therefore the use of xanthan gum in fruit and vegetable juices is not a technological necessity.

Position:

Turkey doesn't support the addition of thickeners other than those naturally present in fruit and vegetables (i.e. pectin). Xanthan gum is a polysaccharide secreted by the bacterium *Xanthomonas campestris* and it is not naturally present in juices. There is no technical need for the additive xanthan gum in juices and nectars and the addition of xanthan gum or other foreign substances would change the character of fruit and vegetable juices.

International Food Additives Council (IFAC)

This Conference Room Document (CRD) is respectfully submitted by the International Food Additives Council (IFAC). IFAC is a global association representing manufacturers of food ingredients. IFAC appreciates the Committee's consideration of this CRD, which addresses a matter referred to the Codex Committee on Food Additives (CCFA) by the Codex Committee on Processed Fruits and Vegetables (CCPFV) regarding provisions for Table 3 additives with the function “stabilizer” and “thickener” in food categories 14.1.2 and 14.1.3.

Introduction

During the 47th CCFA Session, provisions for Table 3 additives in the General Standard for Food Additives (GSFA) were considered, including those with the function “stabilizer” and “thickener.” With regard to food categories 14.1.2 “Fruit and vegetable juices” and 14.1.3 “Fruit and vegetable nectars,” CCFA asked CCPFV to determine whether Table 3 additives with the “stabilizer” and/or “thickener” function and xanthan gum specifically are technologically justified in these food categories.

This issue was considered briefly during the CCPFV 28 in September 2016 where mixed positions on the use of these materials in food categories 14.1.2 and 14.1.3 were noted. While some countries reported that only pectin was technologically justified, several countries reported that xanthan gum, carboxymethyl cellulose and gellan gum were technically justified and being used as a thickener and stabilizer in juices. The United States of America also reported that there was technological justification for emulsifiers, stabilizers and thickeners and that both xanthan gum and gellan gum were being used in these food categories. Brazil supported this statement as per the use of xanthan gum.

IFAC Position

IFAC strongly supports adoption of provisions for the use of xanthan gum and gellan gum, as well as other Table 3 additives with the function “stabilizer” and “thickener,” in food categories 14.1.2 and 14.1.3 of the GSFA. IFAC believes there is clear technological justification for these additives. These materials have been shown to be safe, have an acceptable daily intake of “GMP” and allow manufacturers to innovate and enhance juice products.

These provisions have languished for several years following the 47th CCFA's referral to CCPFV for technical advice. Products in international trade that fall into these food categories and utilize stabilizers and thickeners, specifically xanthan gum and gellan gum, face trade barriers as a result of a lack of clear,

adopted provisions permitting the use of these substances in products that fall into food categories 14.1.2 and 14.1.3 of the GSFA. Because these materials are technologically justified as explained below and evidenced by the interventions and support from several delegations at the 28th CCPFV and because failure to adopt these provisions is causing barriers to trade, IFAC respectively calls upon CCFA to adopt these provisions as soon as possible, preferably at this meeting, or prioritize their review as part of the work on CCFA prioritization addressed under Agenda Item 8.

Technological Justification for Table 3 Additives with a “Stabilizer” and/or “Thickener” Function Other than Pectin

Table 3 additives with a “stabilizer” and “thickener” function, particularly xanthan gum and gellan gum, are used in several types of fruit (e.g., orange, grape, and apple) and vegetable juices. They are used in clear as well as cloudy juices, juices produced from tropical fruits and also products marketed as “100% juice.”

These additives provide optimal colloidal suspension of solids in juice products (including insoluble materials like pulp) and can improve “mouth feel” and viscosity in these products. Many of these additives function particularly well in high-acid environments that are common in juices and juice concentrates. They are also particularly effective in maintaining homogeneity and distribution of pulp and fruit in juice products, avoiding issues related to separation during production, filling and transportation, and prior to purchase, storage and consumption by consumers. These technological functions help reduce food waste and improve consumer acceptance of many juice products.

Many fruits and vegetables have different varieties which bring diversity in color, flavor, fiber and sugar content, among other factors depending on time of harvest. The use of stabilizers is necessary to obtain a uniform juice product that consumers will accept and is particularly important when the product is sold in clear packaging.

Pectin is commonly used by some juice makers for thickening and stabilization. IFAC understands some non-governmental organizations and the European Union are likely to insist that pectin be the only stabilizer/thickener allowed in products conforming to these food categories. It is IFAC’s understanding that these stakeholders only support the use of pectin due to historical processing practices and because pectin is derived from citrus or other fruits, and object to the use of non-fruit-derived hydrocolloids in juice products despite the fact that these hydrocolloids have similar functionality to pectin and are generally derived from botanical sources or fermentation. While IFAC supports the use of pectin as a stabilizer and thickener in juice products, we also believe the other Table 3 stabilizers and thickeners offer technological functions that make them superior to pectin in certain applications. These additives are not only technologically justified, but offer new and innovative functionality that is helping these food categories expand to meet consumer tastes and regional preferences. They are also helping to address challenges related to longer food distribution networks and the desire of manufacturers to lower the overall impact on the environment.

When using pectins, it is generally recommended that the pectin solution be dissolved in the liquid product at a temperature of 80°C for optimal hydration and activation. Such high temperature processing may be undesirable in some applications, including when the juice is very sensitive to temperature fluctuation, may be less attractive for low impact, ecologically friendly processors, or may be cost prohibitive in some regions of the world. On the other hand, xanthan gum is cold-soluble. The ability to use xanthan gum at lower processing temperatures (e.g., room temperature) supports sustainability and productivity, as manufacturers are able to reduce energy consumption while producing a comparable or superior product to pectin based juice. In other cases, lower processing temperatures simplify processing steps and production time, which in turn reduces production costs, protects workers and provides comparable or superior products.

Several Table 3 alternatives are also superior to pectin because they are tasteless and impart no flavor or added mouth feel in the product. Gellan gum, for example, is completely tasteless and works extremely well in juice applications, whereas the use of pectin could impact the taste profile of the final product. Gellan gum also offers extremely effective stabilization without contributing to mouth feel, which can be particularly important in juice applications where stabilization of insoluble ingredients like pulp is desired but the manufacturer does not want to thicken the juice. At rest, a gellan-enhanced fluid gel has a very high apparent viscosity, but because of the weak molecular associations, the network is easily disrupted, resulting in a low viscosity, smooth pour and light, refreshing mouth feel. Pectin, on the other hand, will impact mouth feel when used as a stabilizer (generally by thickening or gelling the mixture), which may impart undesirable characteristics on the final juice product either through poor pour performance or mouth feel.

Juices are increasingly being looked to by consumers as health foods, and manufacturers are offering a greater variety of multi-component, high-pulp and low-calorie juices. In these products, Table 3 thickeners can enhance body and mouth feel in low-calorie juices without impacting flavor and at much lower usage levels than pectin. They can also help to maintain pulp in solution over a greater period of time at lower usage levels, which can impact consumer acceptance of new products. Given the desire by some

consumers to consume products containing fewer ingredients, this lower usage level is an important consideration for many manufacturers as they develop new and innovative products.

Finally, there appears to be widespread support and technological justification for the use of all Table 3 stabilizers and thickeners in food categories 14.1.2 and 14.1.3. However, opposition exists to expanding the provisions for stabilizers and thickeners in these categories beyond pectin. Per the principles of the “horizontal approach,” which has been applied by the CCFA to numerous other food categories and other additives, if a Table 3 additive is found to be technologically justified in a food category, all other Table 3 food additives with that justified technological function should be suitable for use in that food category.

Conclusion

There are specific functional limitations of pectin that make other hydrocolloids desirable in certain juice applications, including those marketed as “100% juice.” Given the specific technological benefits of Table 3 additives with a stabilizer and thickener function, and considering the principles of the horizontal approach that has been applied by CCFA, IFAC sees no reason why all Table 3 additives with a stabilizer and thickener function should not be permitted in food categories 14.1.2 “Fruit and vegetable juices” and 14.1.3 “Fruit and vegetable nectars.” There is no safety concern, they will not mislead consumers and they are technologically justified. Should CCFA be uncomfortable approving all Table 3 stabilizers and thickeners, IFAC believes clear technological justification exists to recommend approval of the provisions for xanthan gum, gellan gum, carboxymethyl cellulose and pectin.

The lack of adopted provisions permitting the use of these materials in food that fall within these categories is causing trade barriers and should be addressed as quickly as possible. Therefore, IFAC respectfully calls on CCFA to either adopt these provisions at its 49th Meeting or to prioritize their consideration as soon as feasible and no later than the 50th CCFA. Allowing these provisions to continue to languish will only further the trade issues that have been encountered.

International Fruit and Vegetable Juice Association (IFU)

MATTERS ARISING FROM THE 39TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION (CAC39)

B. Matters for action

28th Session of Codex Committee on Processed Fruits and Vegetables (CCPFV28)

Responses to CCFA47 request on the use of “emulsifiers, stabilizers, thickeners” and “xanthan gum” (INS 415) in food categories “14.1.2” Fruit and Vegetable Juices” and 14.1.3 “Fruit and Vegetable Nectars”

18. CCPFV28 noted the mixed positions for the use of emulsifiers, stabilizers and thickeners in food categories 14.1.2 and 14.1.3. Some countries reported that xanthan gum (INS 415) was not used due to no technological need for its use under these food categories. In their view, only pectin (INS 440) was technologically justified for use in certain products in the food categories listed. Other countries reported that xanthan gum (INS 415), carboxymethyl cellulose (INS 466) and gellan gum (INS 418) were technically justified and being used as a thickener and stabilizer in juices.

19. The United States of America reported that there was technological justification for emulsifiers, stabilizers and thickeners and that both xanthan gum (INS 415) and gellan gum (INS 418) were being used in these food categories. Brazil supported this statement as per the use of xanthan gum.

Comments:

The International Fruit and Vegetable Juice Association (IFU) has been for more than sixty years the only representative of the worldwide fruit and vegetable juice and nectar industry. The members of IFU are producers of juices and related products, associations, traders, machinery and packaging producers, public and private scientific institutions from around the world.

IFU is opposed to the addition of other thickeners than those naturally present in fruit and vegetables (i.e. pectin) to juice and nectars.

In 1999 the IFU and others argued against a general permission of additives at GMP level to Juices and Nectars. An inter-governmental task force on fruit and vegetable Juices (TFFVJ) was established which considered which additives to permit in juices and nectars based on the minimum required for technological necessity whilst maintaining the essential physical, chemical and organoleptic characteristics of the product. It was not considered necessary by this task force to include in the list of permitted additives xanthan gum and other thickeners except for pectin. Upon the completion of the task force’s work and in agreement with the CCFA it was agreed to remove the list of additives from the Codex General Standard for Fruit Juices and Nectars (CODEX STAN 247-2005) and include them in table 2 of the General Standard for Food Additives (CODEX STAN 247-2005). This was approved by the CCFA in 2005.

In the report from the 28th session of Codex Committee on Processed Fruits and Vegetables (meeting in Washington D.C. from the 12th to 16th September 2016) the technological justification for the use of emulsifiers, stabilizers and thickeners in food categories 14.1.2 and 14.1.3 was supported by the delegations of the United States of America and Brazil. However, those countries that objected were not listed in the report, though some written objections were submitted prior to the meeting, for example from the European Union and Israel. Verbal oppositions from some countries were additionally articulated during the meeting. We ask that the CCFA in its deliberations takes into account these objections.

In the General Standard for Food Additives (CODEX STAN 192-1995) the justification for the use of additives are listed in section 3.2. Specifically, *“To enhance the keeping quality or stability of a food or to improve its organoleptic properties, provided that this does not change the nature, substance or quality of the food as to deceive the consumer.”*

It is the result of the assessment by the IFU Science and Technology Commission that there is no technical need for the additive xanthan gum in juices and nectars. Fruits and vegetables contain a high concentration of pectic substances which are able to stabilize cloudy fruit juices and nectars and fruit and vegetable purees.

In many fruits the pectin contents are so high that their concentration must be reduced partially.

It is a task of modern fruit and vegetable juice and nectar technology to assure the quality and stability by using physical means instead of additives. Desired levels of viscosity and mouth feel can be achieved by appropriate extraction of pectins from the tissue of fruits and vegetables and/or by blends of juices with 100% purees.

Thickeners may change the sensory properties, especially the mouth feel and the aroma properties.

The maintenance of such properties are specified in section 3.2 *Quality Criteria* of the Codex General Standard for Fruit Juices and Nectars (CODEX STAN 247-2005). Specifically, *“The fruit juices and fruit nectars shall have the **characteristic colour, aroma and flavour** of the juice from the same kind of fruit from which it is made.”*

Very importantly, the addition of chemical substances not otherwise naturally found in fruits would also contradict section 3.3 **Authenticity** in the same standard: *“Authenticity is the maintenance of the product’s essential physical, **chemical, organoleptic** and nutritional characteristic of the fruit (s) from which it comes.”*

Maintaining the authenticity of fruit and vegetable juices and nectars is an important goal for the international juice industry, supporting the interests of the consumer.

Finally, it is worth noting that many countries and regions that have traditionally significant production and consumption of juices and nectars also prohibit the addition of xanthan gum in juices and nectars by law. For example: In fruit and vegetable juices and nectars the addition is not permitted in Algeria, Israel, Eurasian Economic Union (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia), Gulf States and Turkey. In fruit and vegetable juices it is not permitted in South Africa.

In fruit juices and nectars, the addition is not permitted in the European Union and its member states and Switzerland.

Conclusion:

IFU is opposed to the addition of other thickeners than those naturally present in fruit and vegetables (i.e. pectin) to juice and nectars. Such additives are not in-line with the interests of the fruit and vegetable juice industry. It contradicts the quality and authenticity requirements set in the Codex General Standard for Fruit Juices and Nectars (CODEX STAN 247-2005).

The addition of xanthan gum or other foreign substances would change the character of fruit and vegetable juices and endanger their naturalness which is desired by the consumer, nutritional organisations as well as the fruit and vegetable juice industry itself. The presence of native pectins in juices and nectars allows the stabilisation by natural means using modern beverage technologies.