

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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Agenda item 3

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PROPOSED DRAFT STANDARD FOR KIWIFRUIT: TOLERANCE FOR DECAY, SOFT ROT AND INTERNAL BREAKDOWN

Prepared by the Electronic Working Group chaired by New Zealand and co-chaired by Mexico and Iran

Introduction

1. The electronic working group (EWG) was tasked by the 20th Session of the Codex Committee on Fresh Fruits and Vegetables (CCFFV20) with resolving the outstanding issue of tolerances for decay, soft rot and internal breakdown in “Extra” Class (Section 5.1.1) and Class I (Section 5.1.2) of the draft Standard for Kiwifruit¹.
2. The Chairs circulated a discussion paper in February 2018, which framed the issue in the context of the relevant underlying Codex principles. Participants in the EWG (refer Appendix 3) were invited to review and make recommendations for tolerances with due consideration of the principles.
3. Responses were received from nine members. Members proposed amendments and additions to the principles, and comments also indicated a clear divergence of opinions with some members for and some against any tolerance.
4. A second paper was circulated in July 2018 which included amended principles. The Chairs proposed for “Extra” Class a 0% tolerance at export control stage “after preparation and packaging” and as product moves along the distribution chain a tolerance of 1% is introduced. For Class I a 0% tolerance at export control stage and as product moves along the distribution chain a tolerance of 2% is introduced.
5. Responses were received from six members. Members provided comment on whether they would accept the proposed wording. There was little change in view point from the first round of comments.
6. A third paper was circulated in September 2018 in a further attempt to reach a compromise on tolerances for decay. The chairs proposed for “Extra” Class a 0.5% tolerance for decay, soft rot and/or internal breakdown after the export control stage. Similarly for Class I a 1% tolerance for decay, soft rot and/or internal breakdown.
7. Responses were received from seven members. Members provided comment on whether they agreed with the inclusion of the proposed tolerance level. There was an even mix of comments on both sides of the argument also taking into account the views from two of the Chairs.

Conclusions of the EWG

Principles

8. The original EWG discussion paper proposed six principles for developing specific tolerances. All respondents agreed that the principles form a suitable basis to develop specific tolerances. The principles were amended and expanded to incorporate comments from the working group and the principles were then presented in the progress document (June 2018), as accepted by the EWG (Appendix 1).
9. The principles are used as a basis for reporting the views of the EWG in regard to tolerances for decay as follows.

Principle I. The Purpose of Codex Standards

10. It is agreed that the Codex Standards aim at protecting consumers’ health and ensuring fair practices in the food trade. They should facilitate international trade through harmonization of requirements for foods.

¹ REP18/FFV paras 41-42

11. The EWG views on points in the Purpose statement, in relation to tolerances for decay, and the responses from chairs are set out in the following principles.

Principle II: Protection of human health

12. The EWG expressed various views on how a tolerance for rots relates to protection of consumers' health. These can be summarised as follows:

- While the priority of the standard is to define quality aspects and product classification, consumers' health issues are also important in the Standard.
- Relevant standards developed by other Codex committees are referenced in specific sections in the Standard to address this issue, i.e. section 8, Contaminants and section 9, Hygiene.
- The minimum requirements (section 3.1) provide protection of consumers' health by requiring produce to be sound, and eliminating rotting or deterioration that renders produce unfit for consumption.
- Rot is a negative defect. There may be a distinction between rot that renders produce unfit for consumption, and soft rot that does not induce consumer health issues.

13. A view was expressed that due to concerns on possible impact on consumer health rotten fruit should be excluded from "Extra" Class with a zero tolerance. In response, it was noted that if there were reasons for concern regarding detrimental effect of rots on human health that this should apply to all classes, not just "Extra" Class. Known examples of toxin producing rots (e.g. patulin, aflatoxin) are the exception rather than the rule and none are specifically known for kiwifruit. Any individual fruit affected by rot to a major extent is unlikely to be palatable and therefore very unlikely to be consumed.

14. Rot tolerances for Class II are included in other FFV standards and if this were a significant concern it would have been raised previously. The tolerances percentages under consideration is not considered to be a significant risk.

Principle III. Fair practices in the food trade

15. Again the EWG expressed various views. These can be summarized as follows:

- The Standard should not become overly restrictive for exporting countries due to their distance from markets and associated shipping time. Given that quality diminishes with increased storage times, tolerance levels should be equitable in regard to factors such as time and distance from market.
- "Extra" Class produce should retain a differential, namely exceptional or superior quality: transport condition as well as distance from markets is not a consideration. Climate or any other reason may not justify different treatments. An important fair practice in food trade is to ensure that the product quality corresponds to the one indicated on the label. Produce not satisfying the requirements should not be labelled "Extra".
- Current practice should be considered in setting the requirements. In particular the higher costs and investments needed to ensure a distinctive quality along the supply chain should be financially rewarded.

16. In response, it was noted that Codex Standards are a mechanism to facilitate trade against agreed quality classes and as such do not necessarily reward costs and investments. The relative value that a market assigns to these classes is a commercial consideration, not a Codex one.

17. The EWG also expressed concern that inclusion of a tolerance for rots in "Extra" Class would erode the quality differential with Class I and that the producer would not be economically compensated. In response, it was noted that equal tolerances are not envisaged, rather all three classes should allow for a slight deterioration in quality occurring during storage to reflect the reality of international trade. "Extra" Class will remain a premium product as a tolerance for a low level of decay will no more impact on presentation quality than what is current trade practice in Europe under the UNECE Kiwifruit Standard. This allows for 0.5% of "Extra" Class to be composed of Class II fruit, some of which could potentially be rots.

18. Some members of the EWG commented that the Standard should take into consideration current industry practices that are required to produce "Extra" Class product. In response, it was noted that extended cool storage and long distance shipping are considered to be current practice for kiwifruit. The same issues would also apply to other commodities with long storage qualities.

19. While it is commercially viable for high value product to be air-freighted long distances, kiwifruit is a lower value product shipped in high volumes. The additional premium attained for "Extra" Class in kiwifruit would not justify the cost of air transport.

20. Several members commented that near-to-market countries have invested in technology to produce “Extra” class product. In response the Chairs noted that countries that are a distance from market could also invest in the same innovative technology, but due to the distance to market would not gain the equivalent benefits of this investment as nearer to market producers.

Principle IV. Facilitating international trade

21. Again the EWG expressed various views. These can be summarized as follows:

- Codex Standards were established to help facilitate trade and should not become a trade barrier.
- Facilitation of international trade is done via harmonization; the tolerances established within the UNECE have in fact used in international trade for more than 30 years, including the zero tolerance for decay for “Extra” Class Kiwifruit transported long distances.
- Stringent limits for decay may reduce competition from distant countries and may act as a barrier to trade.
- The allowance of a decay tolerance helps to facilitate trade.
- Codex Standards should facilitate trade while the pillars of food safety and fair practice are being upheld.
- The Standard allows for sufficient quality tolerance (decay tolerances in Class I and II). If Codex Standards allow a tolerance for decay in “Extra” Class, they may be replaced by private quality standards.
- Distance from market place limits transport options for “Extra” Class product, this is primarily an issue for countries more distant from premium markets.
- The consumer pays because they are expecting an excellent product.

22. The chair’s response: it was noted that a lack of a tolerance for rots is primarily an issue for countries more distant from premium markets. Zero tolerances for decay effectively limits the trade of “Extra” Class produce to near-to-market producers, which automatically creates an international trade barrier for trading in “Extra” Class product. Fair trade practices would allow trade across all classes.

23. The UNECE Standard for Kiwifruit, since its 2010 amendment, allows a very small tolerance for decay in “Extra” Class, indirectly through the tolerances for Class I and Class II. Class I and Class II allow tolerances for decay.

24. The Scope of the Standard is different to those referred to in the comments. These standards apply to produce “to be supplied fresh to the consumer after preparation and packaging”, whereas the Standard for Kiwifruit defines the quality requirements “after preparation and packaging”, which can be considered to be the original export control stage, and allows for “stages following packaging”. This implies that the standard should define the quality requirements at the stage(s) after packaging, e.g. after storage and transport.

Principle V. Characteristics of the produce; susceptibility to decay

25. Again the EWG expressed various views. These can be summarised as follows:

- Fresh products in the stages after harvest, naturally experience a decrease in quality, have a tendency to deteriorate for physiological reasons. The distance from the production site to the final destination market is the reason for allowing a specific tolerance of rot, decay in Extra Class and classes I and II.
- Fresh products are perishable by nature. In all Codex Standards, this aspect is referred to in section 1, Scope. When applied at stages following packaging, products may show in relation to the requirements of the standard a slight deterioration due to their development and their tendency to perish.
- Tolerances for decay should be established for all classes at prescribed level to allow for biotic and abiotic factors that may impact the quality at different stages along the supply chain.
- “Extra” Class must represent the best quality level.
- A clear distinction of tolerance levels between classes is still necessary.

26. Fundamental to this discussion is that physiologically kiwifruit can withstand extended periods of cool storage. This characteristic has fuelled a demand by consumers for year-round supply of kiwifruit. Similarly, the ability to store kiwifruit is fully utilised to manage crop flow into markets to prevent oversupply, which is in all producers’ interests. However, a consequence of this extended storage is the inevitable development of rots, irrespective of distance to market.

27. With regards to the repeated application of the standards at various points in the distribution chain, it is essential that quality of product at any given point in time not be viewed as immutable. Quality in kiwifruit is not static but a very dynamic process. This has been the predominant theme in the responses received and needs to be given due consideration by inclusion of a suitable tolerance.

28. It has been agreed previously in the Layout for Standards for Fresh Fruits and Vegetables that tolerances should be set according to the nature of the produce. A consensus has been reached, that kiwifruit are susceptible to decay, the level is average, and less so than aubergines. One member expressed the view that the tolerance should be based on specific conditions of production and storage, and should be supported by data.

Principle VI. Concept of “Extra” Class

29. Again the EWG expressed various views. These can be summarized as follows:

- “Extra” Class is superior to the other classes in quality respects only.
- If the requirements for “Extra” class do not guarantee a product of superior or exceptional quality, the international standard will not be used for such products and will be replaced by private standards.
- In order to facilitate international and fair trade, tolerances are needed. This allows for the normal process of physiological changes; “Extra” class is superior to the other classes in quality respects.
- “Extra” Class is a product of Superior category therefore no percentage should be allowed for tolerances for rot.

30. In response to comments that the definition for “Extra” Class states “the flesh must be perfectly sound and not soft”, the Chairs noted that if the fruit has deteriorated it would not meet the minimum requirements of the standards: “sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded”.

Principle VII. Taking work of other international organizations into account

31. The terms of reference of CCFFV includes the following point:

(b) to consult, as necessary, with other international organizations in the Standards development process to avoid duplication.

Principle VIII. Presentation of the standard

32. To implement this principle, CCFFV20 agreed on a Proposed Layout for Fresh Fruits and Vegetables as follows²:

The Committee noted that the Proposed Layout for Standards for Fresh Fruits and Vegetables was a guidance document to facilitate development and discussion of standards for fresh fruits and vegetables. It provided a harmonized presentation and common provisions applicable across fresh fruits and vegetables so that CCFFV could focus discussion on those provisions that are specific to the produce concerned.

Section 5.1.1: “Extra” Class

33. There has been significant disagreement on allowance for a tolerance in “Extra” Class. It has been presented that “Extra” Class should only be for superior product, which would exclude any rot tolerance level example one unit of fruit, a single kiwifruit. However the exclusion of a rot tolerance has the potential to restrict trade in “Extra” Class product, specifically those where distance from the market place must be considered. If a tolerance level is included in “Extra” Class there is potential for industry to use private standards instead of Government led Standards. There is a feeling that the current draft Standard for Kiwifruit allows for sufficient quality tolerance in class I and II. However trade allowances are needed to ensure fair security, fair trade and farmer’s resilience throughout the world, across all classes. There was a general consensus that current trading practices should always be considered.

34. The members that were originally against an introduction of a tolerance in “Extra” Class also rejected inclusion of a rot tolerance of 0.5% in “Extra” Class and accepted a 1% in a Class I. There was a strong view that there is a contradiction with the zero tolerance established in the UNECE Standard for Kiwifruit and it is not consistent with most of the Codex Standards. It is important to note that the UNECE Standard allows for a very small percentage for rot tolerance in “Extra” Class.

² REP18/FFV, para 92

35. The Aubergine Standard, which was adopted by CAC41 in 2018, included in both "Extra" Class and Class I a 1% tolerance for decay, soft rot and/or internal breakdown. CAC41 noted the reservations of several members and also noted that provisions for decay in "Extra" Class were optional and, depending on the nature of the produce, may not be applicable or necessary³.

36. In adopting the Aubergine Standard CAC41 noted the views of members. The inclusion of one percent tolerance for decay in "Extra" class was realistic, reflected existing industry and trade practices for fresh fruits and vegetables due to their perishable nature, and could prevent the rejection or downgrading of entire lots, thereby avoiding food waste⁴. This view has also been reflected in the EWG for the Standard for Kiwifruit. Views were also expressed that if produce did not comply with "Extra" class, it could still meet the requirements of classes I and II; and that a general solution or clearer principle would be required before any new standard could be adopted.

37. In responses to the third paper there was new support of a rot tolerance percentage in "Extra" Class, with the view that the failure to include a rot tolerance would restrict trade and impact on economic return. There was support for a compromise, with amended wording to reflect what was proposed in the second draft.

38. In conclusion, it has been demonstrated that the EWG are still divided on whether a tolerance level should be included in "Extra" Class despite all attempts to reach a compromise on this issue.

Section 5.1.2: Class I

39. There was new support for the percentage of rot tolerance in Class 1. On this basis we consider the EWG has agreed on a tolerance of 1% in Class I.

Section 5.1.2: Point of application

40. There was an opinion that a proposed tolerance for decay at any stage along the export pathway does not reflect current trade practices. In order to facilitate a resolution, the Chairs suggested that for "Extra" Class a 0% tolerance at export control stage "after preparation and packaging" and as product moves along the distribution chain a tolerance of 0.5% is introduced. For Class I a 0% tolerance at the export control stage and as product moves along the distribution chain a tolerance of 1% to introduced.

41. One member proposed an amendment to clarify wording.

State of section 5.1

42. Section 5.1 as developed by the EWG is presented in Appendix 2. Note that the wording in 5.1.1 remains in square brackets in view of the lack of consensus; 5.1.2 includes the 1% figure; and the second paragraph under 5.1.2 includes the wording proposed, in square brackets.

Recommendation to CCFFV21

43. CCFFV21 is invited to consider the conclusions of the EWG and the tolerances for decay, soft rot and internal breakdown in "Extra" Class and Class I to enable progress on the standard.

³ REP18/CAC, para 20

⁴ REP18/CAC, para 18(i)

PRINCIPLES FOR DEVELOPING SPECIFIC TOLERANCES

I. The purpose of Codex standards

1. The purpose of the Codex *Alimentarius* is stated⁵ as follows (emphasis added):

These food standards and related texts aim at *protecting consumers' health* and *ensuring fair practices in the food trade*. The publication of the *Codex Alimentarius* is intended to guide and promote the elaboration and establishment of definitions and requirements for foods to assist in their harmonization and in doing so to *facilitate international trade*.

2. These purposes can be developed further in relation to tolerances for decay, as follows.

II. Protection of consumers' health

3. In consideration of decay and internal breakdown issues, consumer health is already dealt with in the Standard under section 8, Contaminants; section 9, Hygiene; and section 3.1 Minimum requirements, bullet 2:

- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded.

4. Bullet 2 envisages that rotting and deterioration that does not render the fruit unfit for human consumption should NOT be excluded from the Standard. What actually constitutes an "acceptable" level of rot development for safe consumption will vary widely by commodity, grade and pathogen, therefore is best dealt with through a tolerance approach. Several existing standards allow tolerances for rot in Class II.

III. Fair practices in the food trade

5. To ensure fair practices in trade:

- The Standard should not become restrictive for exporting countries due to their distance from markets and travel time. Tolerance levels should be equitable in regard to factors such as time and distance from market.
- Codex Standards must ensure that product labelled as "Extra" Class product complies with the definition of the class. Refer to principle 6 for consideration of "Extra" Class.
- The product quality must correspond to the one indicated in the label/certificate. If due to transport conditions, distance, climate, or any other reasons a product cannot satisfy the requirements, it must not be labelled as such.
- Current practice should be considered when setting the requirements.
- "Extra" Class should not be different to the other grades, in respect to allowing for a slight deterioration in quality occurring during storage. It is necessary to provide for these deteriorations, in order to facilitate fair trade.

6. At CCFFV20, the EU advanced the argument that those countries which are able to successfully supply "Extra" Class product do so by virtue of the major investments they have made in quality systems to achieve this result. However, this ignores the similarly significant investments made by other countries more distant from the market. Deterioration in quality is time dependent, a country that is close to market will by default achieve a higher quality product for an equivalent investment in quality systems relative to a more distant supplier. From a perspective of fair trade, the proximity to market alone should not be the sole determinant of commercial success. An inclusion of a suitable tolerance would ensure fair trading practices are maintained.

IV. Facilitating international trade

7. Fresh fruits and vegetables are perishable, and given that the purpose of the standards is to facilitate international trade the relevant points of application of the standard are at the export control stage and import inspection. Once a consignment has been accepted for conformity to the standard, this decision should not be time bound, or subject to reconsideration at different points along the supply chain. The purpose of the standards within Codex Alimentarius is the establishment of definitions and requirements for foods, to assist in their harmonization and to facilitate international trade, not to regulate within market supply chains. Decisions in relation to management of the supply chain to preserve quality should be left in the commercial environment.

⁵ Procedural Manual, 25th edition, page 25.

8. Given the perishable nature of fresh fruits and vegetables, repeated application of the standard at different points along a supply chain will lead to different outcomes for the same line of produce as it deteriorates. At which point in the supply chain does the responsibility of the maintenance of the quality transfer from the seller (producer) to the buyer? The seller may be held liable for quality of product in the supply chain that is not related to the inherent quality, however instead reflects commercial decisions in relation to maintenance of the quality by the buyer (e.g. store product for extended periods, no refrigeration, etc.). Below is the relevant provision:

“The holder/seller of products may not display such products or offer them for sale, or deliver or market them in any manner other than in conformity with this standard. The holder/seller shall be responsible for observing such conformity.”

9. Since CCFFV20 agreed⁶ to remove from the Standard Layout a proposed reference to the export control stage as the point of application of the Standard, there needs to be some allowance for the deterioration in quality that occurs when applying the Standard at stages after the export control stage. In essence, this is the solution that was offered by Jamaica at CCFV20 and should be considered as an option by the working group.

10. The Scope of the Standard for Kiwifruit envisages that the standard should define the quality requirements at the stage(s) after packaging, e.g. after storage and transport. Some of the existing Codex standards allow for tolerances for decay in “Extra” Class or Class I.

V. Characteristics of the produce; susceptibility to decay

11. Fresh fruit and vegetable quality is not static as produce is inherently perishable by nature. A decline in quality and an increase in decay over time is a consequence of the physiological senescence processes which are induced when the produce is harvested. Produce exhibits a high degree of variability in storage life, not just from crop to crop but also within crops due to varietal differences and crop husbandry. While quality of a lot of produce can be assessed at a single point in time, such as the packing and preparation stage, this quality is not immutable. When re-assessed at subsequent stages in the distribution chain, there will be some deterioration in the quality of the lot due to impact of the senescent processes.

12. In recent Codex Standards, the perishable nature of produce is covered by point 1 “Scope”, in particular in considering that “when applied at stages following packaging, products may show in relation to the requirements of the Standard a slight deterioration due to their development and their tendency to perish”.

13. This reduction in quality and the variability can be addressed through the setting of an appropriate tolerance. The wording in Section 5.1 of the Kiwifruit Standard states:

“At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated.” It is clear from this that tolerances should apply to all classes. Also, from the Layout Standard: “{The tolerances for decay may be established depending on the characteristics/nature of produce and current trade practices.}”

VI. Concept of “Extra” Class

14. “Extra” Class is envisaged as fruit of superior quality. The flesh must be sound. The fruit must be free of defects, with the exception of very slight, superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package. Any soft rots or internal breakdown will not meet this definition, with both affecting flesh soundness, quality and keeping quality. However, “decay” is more problematic in that some forms of decay such as pitting of kiwifruit may meet the criteria of “very slight, superficial defect” not affecting quality or keeping quality. “Decay” is not defined and covers a wide range of disorders which at the other extreme will negatively impact both quality and keeping quality. A further complication arises in that in the incipient stages of development it may not be readily apparent that a particular “decay” may impact on keeping quality at some stage in the future.

15. Given this uncertainty and that in general “decay, soft rots and internal breakdown” is not in keeping with the concept of an “Extra” class, it can be argued that a more conservative tolerance to these disorders may be appropriate.

VII. Taking work of other international organizations into account

⁶ REP18/FFV, para. 89.

16. In accordance to Article 1 (b) of the Statutes of the Codex Alimentarius Commission in the Procedural Manual, Codex Standards should “promote coordination of all food standards work undertaken by international governmental and non-governmental organisations”. When developing standards, work already undertaken by other international organisations should be taken into account.

17. The terms of reference of CCFFV include the following point:

(b) to consult, as necessary, with other international organisations in the standards development process to avoid duplication.⁷

VIII. Presentation of the standard

18. Points 1 and 4 of the General Principles of the Codex Alimentarius in the Procedural Manual; in particular “the food standards [are] presented in a uniform manner” and a Codex Standard “should be drawn up in accordance with the Format for Codex Commodity Standards and contain, as appropriate, the sections listed therein”.

19. To implement this principle, CCFFV20 agreed on a Proposed Layout for Fresh Fruits and Vegetables as follows:

The Committee noted that the Proposed Layout for Standards for Fresh Fruits and Vegetables was a guidance document to facilitate development and discussion of standards for fresh fruits and vegetables. It provided a harmonized presentation and common provisions applicable across fresh fruits and vegetables so that CCFFV could focus discussion on those provisions that are specific to the produce concerned.

⁷ This is from the current terms of reference (Procedural Manual, 26th edition, page 214). An earlier version of the terms of reference was circulated to the EWG in error.

Extract from DRAFT STANDARD FOR KIWIFRUIT**5. PROVISIONS CONCERNING TOLERANCES****5.1 QUALITY TOLERANCES**

Tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated. Produce that fails conformity assessment, may be allowed to be re-sorted and brought into conformity in accordance with the relevant provisions in the *Guidelines for Food Import Control Systems* (CXG 47-2003).

5.1.1 “Extra” Class

Five percent, by number or weight, of kiwifruit not satisfying the requirements of the class but meeting those of Class I. [Included therein is 0.5% tolerance for decay, soft rot and/or internal breakdown.]

5.1.2 Class I

Ten percent, by number or weight, of kiwifruit not satisfying the requirements of the class but meeting those of Class II. Included therein is 1% tolerance for decay, soft rot and/or internal breakdown.

However, tolerances for decay [in “Extra” Class and Class I] shall not be acceptable at the stages of:

- Preparation,
- Packaging, and
- At the export control points.

The minimum requirements in relation to the standard for decay tolerances shall be applicable at points beyond the export control points.

5.1.3 Class II

Ten percent by number or weight of kiwifruit satisfying neither the requirements of the class nor the minimum requirements. Included therein not be more than 2% of in total may consist of produce affected by decay, soft rot and/or internal breakdown.

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