

CODEx ALIMENTARIUS COMMISSION



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Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda Item 5

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEx COMMITTEE ON FRESH FRUITS AND VEGETABLES

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DRAFT STANDARD FOR KIWIFRUIT

(Prepared by the Electronic Working Group chaired by New Zealand and co-chaired by the Islamic Republic of Iran)

Codex Members and Observers wishing to submit comments at Step 6 on this draft should do so as instructed in CL 2017/14-FFV available at the Codex webpage/Circular letters 2017: <http://www.fao.org/fao-who-codexalimentarius/circular-letters/en/>. Comments will only be accepted through the online commenting system within the deadline indicated in the CL.

BACKGROUND

1. The 19th Session of the Committee on Fresh Fruits and Vegetables (October 2015) (CCFFV19) agreed to forward the proposed draft Standard for Kiwifruit to the Commission for adoption at Step 5, and agreed to establish an Electronic Working Group (EWG) chaired by New Zealand and co-chaired by Iran, working in English, to revise the draft Standard taking into account the outstanding issues relating to maturity requirements; provisions concerning sizing; and quality tolerances in “Extra” Class.¹
2. The 39th Session of the Codex Alimentarius Commission (CAC39) adopted the proposed draft Standard for Kiwifruit at Step 5 and advanced it to Step 6 for comments and further revision by the EWG. In doing so, the Commission expressed the following views²:
 - some technical issues related to maturity requirements (Brix / percentage of dry matter), sizing and tolerances, should be further examined by CCFFV;
 - the tolerance for decay in the “Extra” class could be considered in the work on the Standard Layout for Codex Standards for Fresh Fruits and Vegetables instead of in individual standards;
 - the inclusion of hybrids was not a common practice in Codex standards for fresh fruits and vegetables.
3. The Codex Secretariat circulated the draft Standard for Kiwifruit for comments at Step 6 by means of a circular letter (CL) 2016/29-FFV. Comments in reply to this CL were submitted by Colombia, Cuba, Ecuador, Japan, Kenya, Mexico, Saint Lucia and Uruguay³ and forwarded to the Chairs of the EWG.
4. The EWG revised the draft Standard for Kiwifruit based on the Terms of Reference given by CCFFV19, the comments submitted at Step 5 for consideration by CAC39, the views expressed by CAC39, the comments received in reply to CL 2016/29-FFV and further comments provided by the members of the EWG. The list of participants is contained in Appendix II.
5. The chairs issued two papers to the EWG for comment: a Discussion Paper in May 2016, and a Progress Report in August 2016. The Chairs expressed their appreciation for the many helpful comments on the draft Standard received.
6. The EWG’s report below covers all the comments as noted above. The conclusions and recommendations are based on an analysis of the comments, and are described below section by section. The revised draft standard, incorporating these conclusions, is in Appendix I.

¹ REP16/FFV, para. 75 and Appendix V

² REP16/CAC, paras 90 and 91

³ These comments are available upon request from the Codex Secretariat.

MAIN ISSUES DISCUSSED IN THE EWG

Section 1: Scope

7. Two countries proposed changes to this section. However the scope is aligned with the Proposed Draft Layout for Codex Standards for Fresh Fruits and Vegetables. Furthermore the section defines the nature, purpose and range of application of the standard, and seems to be essential. No change is recommended.

Section 2: Definition of Produce

8. Following comments from EWG participants, it is recommended that the name of the fruit is simplified by removing the words "or kiwi", to read:

This Standard applies to kiwifruit (also known as actinidia)

9. It is also recommended that the description of the varieties should allow hybrids between the two named species, and also hybrids derived from at least one of them, and that the phrase "showing kiwifruit characteristics" should be removed. The revised text is presented as follows:

varieties (cultivars) derived from *Actinidia chinensis* Planch and *A. deliciosa* (A. Chev.) C.F. Liang & A.R. Ferguson and hybrids derived from at least one of them, from the Actinidiaceae family

10. The justification for including hybrids is that they account for a significant proportion of commercially traded kiwifruit and that such hybrids are distributed worldwide. In particular it was noted that hybrids, showing kiwifruit characteristics, of *A. chinensis* and *A. rufa* have been produced in Japan and exported.
11. The EWG also took note of views expressed at CCFFV that the standards should be more inclusive and noted that hybrids are allowed in one other standard developed by CCFFV, in the Standard for Passionfruit, which applies to "commercial varieties of passionfruit from the species golden passionfruit/sweet granadilla (*Passiflora ligularis* Juss), purple passion fruit (*Passiflora edulis* Sims forma *edulis*), yellow passion fruit (*Passiflora edulis* Sims forma *flavicarpa*) and their hybrids grown from the Passifloraceae family."
12. On the other hand, other comments expressed the view that the inclusion of hybrids was not a common practice in Codex standards for fresh fruits and vegetables. There was also concern that the presence of hybrids that have different characteristics than Hayward could weaken the standard, especially if all hybrids are considered (even those that will be developed in the future having properties at present unknown to us). The EWG concluded that the justifications outweighed these concerns, and therefore recommended to include hybrids in the provision.

Section 3.1: Minimum Requirements

13. Following comments from EWG participants, it is recommended that:

- The indent on firmness should be clarified to read "adequately firm; **not soft, shrivelled or water-soaked**";
- The requirement "well formed; double/multiple fruit being excluded" should be listed as a separate indent; and
- A new indent "**fresh in appearance**" should be added.

Section 3.1.1: Minimum Maturity Requirements

14. The EWG considered a range of comments on the minimum maturity requirements which had been placed in square brackets. Some comments suggested that the minimum requirements should apply only at packing, and that the reference to harvest should be deleted, in order to be coherent with the scope of the standard. It is proposed that the maturity requirements should state "at harvest and/or packing" as this would satisfy each member countries' maturity requirements as follows:
15. The fruit at harvest and/or packing must have attained a degree of maturity of at least 6.2° Brix or an average dry matter content of 15%.
16. Another comment noted that a kiwifruit with 6.2° Brix is not mature enough for consumption; the standard should ensure that the Brix level will continue to increase, to a minimum of 9.5° Brix when entering the distribution chain.
17. In response it is noted that the minimum maturity requirement states that the kiwifruit must have reached an appropriate degree of maturity...to allow for development of satisfactory organoleptic characteristics". This should ensure that the Brix will rise to the suggested level during storage. It is therefore recommended that the following should be added as a footnote:

18. This should ensure that fruit reach a minimum of 9.5° Brix when entering the distribution chain.
19. One country proposed a minimum maturity of 6.5° Brix, which should apply at the export-control stage. However a minimum of 6.2° Brix is in accordance with the UNECE Standard, and international trade. A minimum of 6.5° Brix may be too strict and may cause problems in some countries. No change is recommended.
20. Another country commented that the °Brix requirement may vary depending on a series of factors, for example for short transits of the fruit from the harvest point to point of sale, 6.2° Brix may be too low; hence it is not advisable to specify such precise parameters. However as described in the scope, the standard is for kiwifruit at export control stage. °Brix can be varied for different purposes such as local market or long distance transport or eating. But in all cases the fruit must attain a minimum maturation of 6.2° Brix before harvest. No change is recommended.
21. One participant proposed including the characteristics: total soluble solids, titratable acidity and colour change. However a minimum requirement of 6.2° Brix was generally agreed by the EWG as being sufficient. Furthermore these additional parameters will vary with different varieties of kiwifruit, making it difficult to set standard limits. No change is recommended.
22. One country also suggested the inclusion of "handling and transport", since the fruit must be of a maturity to avoid any physical damage during these activities. However this point is included in section 3.1, paragraph 2.

Section 3.2.1: "Extra" Class and Section 3.2.2: Class I

23. Following comments from EWG participants, it is recommended that these two sections are restructured so that positive characteristics are covered in the first paragraph of the section and defects in the second.

Section 4: Provisions Concerning Sizing

24. The EWG considered a number of comments in regard to sizing and recommends as follows:
In the first paragraph, the labelling provision should be transferred to section 7.2.4.
25. In section (A), fruit sized by weight, the minimum weights are intended to apply to only the larger, most commonly traded species, *A. chinensis* and *A. deliciosa* and hybrids between these species, and the minimum sizes stated in the UNECE standard should apply. International evidence suggests a direct link between quality and size for both *A. chinensis* and *A. deliciosa*. The section should therefore be worded as follows:

For *A. chinensis* and *A. deliciosa* and hybrids between these species, the minimum weight for "Extra" Class is 90g, for Class I is 70g and for Class II is 65g.
26. One country proposed that a sizing table should be drawn up on the basis of statistics provided by participating countries. However the proposed provisions are considered sufficient to ensure uniformity within the pack; further detail might lead to unnecessary losses during commercialisation. No change is recommended.
27. The draft Standard at Step 5 allowed sizing by diameter. After investigation this has been found to be a complex issue, due to different varieties having different geometry. Fruit of the same weight can have different dimensions. It is therefore recommended to delete the size by diameter option. This will have little effect in practice as the standard allows for existing trading practices to continue (sections 4 and 7.2.4). No change is recommended.
28. In the section on fruit sized by count, now section (B), the labelling provision should be transferred to section 7.2.4, and a uniformity provision should be introduced for consistency with section (A) as follows:

The uniformity of sizing should be consistent with point (A).

Section 5.1: Quality Tolerances

29. The EWG received comments on quality tolerances. However it is proposed to follow the Commission's recommendation that this issue be considered in the work on the Standard Layout for Codex Standards for Fresh Fruits and Vegetables instead of in individual standards. The relevant provisions currently in square brackets should be aligned with the standard layout.

Section 6.1: Uniformity

30. It is recommended that in the second sentence the word “species” should be removed, to read, “... for each variety concerned, uniform in origin.”
31. The second paragraph requires that where part of the contents of the package is visible, the visible part must be representative of the entire contents. One country proposed that the standard should set a minimum percentage of the visible surface. However the provision that the visible part must be “representative” seems preferable to setting a specific minimum percentage of the visible surface. No change is recommended.

Section 6.2: Packaging

32. It is recommended that a provision regarding the use of stickers, offered as an option in the proposed Layout for Codex Standards for Fresh Fruits and Vegetables, should be included as follows:

Stickers individually affixed to the produce shall be such that, when removed, they neither leave visible traces of glue nor lead to skin defects.

Sections 7.1.2 and 7.2.3: Origin of Produce

33. It is recommended that explanatory footnotes should be added to the country of origin mentioned in sections 7.1.2 and 7.2.3 as follows:

The full or a commonly used name should be indicated.

34. One country considered that wording of the two sections was not consistent, and that it was not clear whether what is required is the production area and the place of production, or not. In fact the two sections are consistent. The wording does not refer to the production site, rather the region in which it is located. It is also optional to provide this information. No change is recommended.

Section 7.2: Non-Retail Containers

35. It was noted that the second paragraph, “For produce transported in bulk, these particulars must appear on a document accompanying the goods,” was redundant since this point is covered in the first paragraph. It is recommended that it should be removed.
36. One country noted that the third paragraph (which is now the second paragraph) refers to kiwifruit transported in bulk, whereas the scope of the standard is quality requirements for kiwifruit at the export-control stage after preparation and packaging. However the wording of this paragraph follows the Proposed Layout for Codex Standards for Fresh Fruits and Vegetables. No change is recommended.

Sections 7.1.1 and 7.2.2: Nature of Produce

37. One country proposed that clause 7.2.2 should be worded to allow for a mixture of varieties, as allowed in section 6.1, Uniformity. It is recommended that the clause should be worded with optional plurals as follows:

Name of the produce. Name of the variety(ies) or cultivar(s) (optional).

Section 7.1.1 should be worded correspondingly.

38. Two EWG members proposed that the name of the variety should be mandatory, because there are several distinct varieties of kiwifruit and the variety name is important information to address consumer choices. However the variety name could be a term such as “Hort 16A”, which would not be understood by the consumer. Other descriptors, such as “green” or “gold” are available which can be used if necessary. No change is recommended.

Section 7.2.4: Commercial Identification

39. It is recommended that the three options for size labelling are presented as follows:

- size (if sized), expressed
 - by the minimum and maximum weight of the fruit; or
 - by number of fruit and the net fruit weight; or
 - when sized in accordance with existing trading practices, by the size and method used.

RECOMMENDATIONS

40. The EWG recommends that CCFFV20:

- Note the report of the EWG above; and
- Recommend the Draft Standard for Kiwifruit (Appendix I) to CAC for adoption.

DRAFT CODEX STANDARD FOR KIWIFRUIT
(For comments at Step 6 through <https://ocs.codexalimentarius.org/>)

1. SCOPE

The purpose of the Standard is to define the quality requirements for kiwifruit at the export-control stage after preparation and packaging. However, if applied at stages following packaging, products may show in relation to the requirements of the Standard:

- a slight lack of freshness and turgidity;
- for fruit graded in classes other than the “Extra” Class, a slight deterioration due to their development and their tendency to perish.

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.

2. DEFINITION OF PRODUCE

This Standard applies to kiwifruit (also known as actinidia) of varieties (cultivars) derived from *Actinidia chinensis* Planch and *A. deliciosa* (A. Chev.) C.F. Liang & A.R. Ferguson and hybrids derived from at least one of them, from the *Actinidiaceae* family, to be supplied fresh to the consumer. Kiwifruit for industrial processing are excluded.

3. PROVISIONS CONCERNING QUALITY

3.1 Minimum Requirements

In all classes, subject to the special provisions for each class and the tolerances allowed, the kiwifruit must be:

- intact (but free of peduncle);
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- adequately firm; not soft, shrivelled or water-soaked;
- well formed; double/multiple fruit being excluded;
- clean, practically free of any visible foreign matter;
- practically free of pests;
- practically free of damage caused by pests;
- free of abnormal external moisture, excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste;
- fresh in appearance;
- free of damage caused by low temperature.

The development and condition of the kiwifruit must be such as to enable them:

- to withstand transportation and handling;
- to arrive in satisfactory condition at the place of destination.

3.1.1 Minimum Maturity Requirements

The kiwifruit must have reached an appropriate degree of maturity, in accordance with characteristics of the variety, to allow for development of satisfactory organoleptic characteristics.

The fruit at harvest and/or packing must have attained a degree of maturity of at least 6.2° Brix or an average dry matter content of 15%¹.

¹ This should ensure that fruit reach a minimum of 9.5° Brix when entering the distribution chain.

3.2 Classification

Kiwifruit are classified into three classes, as defined below:

3.2.1 “Extra” Class

Kiwifruit in this class must be of superior quality. They must be characteristic of the variety (cultivar). The flesh must be perfectly sound and not soft, shrivelled or water soaked. Fruit must be round or oval in cross section (not flattened), and the ratio of the minimum equatorial diameter to the maximum equatorial diameter of the fruit must be 0.8 or greater.

They 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.

3.2.2 Class I

Kiwifruit in this class must be of good quality. They must be characteristic of the variety (cultivar). The flesh must be perfectly sound and not soft, shrivelled or water soaked. Fruit must be round or oval in cross section (not flattened), and the ratio of the minimum equatorial diameter to the maximum equatorial diameter of the fruit must be 0.7 or greater.

The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- a slight defect in shape (but free of swelling or malformations);
- slight defects in colouring;
- slight, superficial skin defects, provided the total area affected does not exceed 1 cm²;
- small “Hayward marks” (longitudinal lines) without protuberance.

3.2.3 Class II

This class includes kiwifruit which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 2.1 above. The flesh should not show any serious defects. The following defects, however, may be allowed, provided the kiwifruit retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape including flattened fruit;
- defects in colouring;
- skin defects provided that the total area affected does not exceed 2 cm²;
- several more-pronounced “Hayward marks” with a slight protuberance;
- slight bruising.

4. PROVISIONS CONCERNING SIZING

Kiwifruit may be sized by weight or count, or in accordance with existing trading practices.

(A) For fruit sized by weight:

For *A. chinensis* and *A. deliciosa* and hybrids between these species, the minimum weight for “Extra” Class is 90g, for Class I is 70g and for Class II is 65g.

To ensure uniformity in size, the range in size between produce in the same package that is sized by weight shall not exceed:

- 10 g for fruit up to 85 g;
- 15 g for fruit weighing between 85 g and 120 g;
- 20 g for fruit weighing between 120 g and 150 g;
- 40 g for fruit weighing 150 g or more.

(B) For fruit sized by count:

The uniformity of sizing should be consistent with point (A).

5. PROVISIONS CONCERNING TOLERANCES

5.1 Quality Tolerances

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. Produce that fails conformity assessment, may be allowed to be re-sorted and brought into conformity in accordance with the *Guidelines for Food Import Control Systems* (CAC/GL 47-2003) sections 9, 10 and 27.

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 1% 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 [2%] tolerance for decay, soft rot and/or internal breakdown.

5.1.3 Class II

Ten percent by number or weight of kiwifruit satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by decay should not be more than 2%.

5.2 Size Tolerances

For all classes (if sized), 10% by number or weight of kiwifruit not satisfying the requirements as regards sizing is allowed.

6. PROVISIONS CONCERNING PRESENTATION

6.1 Uniformity

The contents of each package must be uniform and contain only kiwifruit of the same origin, variety (cultivar), quality and size. However, a mixture of kiwifruit of distinctly different varieties may be packed together in a package provided they are uniform in quality and, for each variety concerned, uniform in origin.

The visible part of the contents of the package must be representative of the entire contents.

6.2 Packaging

Kiwifruit must be packed in such a way as to protect the produce properly. The materials used inside the package must be of food grade quality, clean, and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed, provided the printing or labelling has been done with non-toxic ink or glue.

Stickers individually affixed to the produce shall be such that, when removed, they neither leave visible traces of glue nor lead to skin defects.

Kiwifruit shall be packed in each container in compliance with the *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables* (CAC/RCP 44-1995).

6.2.1 Description of Containers

The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the kiwifruit.

Packages must be free of all foreign matter and smell.

7. PROVISIONS CONCERNING MARKING OR LABELLING

7.1 Consumer Packages

In addition to the requirements of the *General Standard for the Labelling of Prepackaged Foods* (CODEX STAN 1-1985), the following specific provisions apply:

7.1.1 Nature of Produce

If the produce is not visible from the outside, each package shall be labelled as to the name of the produce and may be labelled as to the name of the variety(ies) (cultivar(s)).

7.1.2 **Origin of Produce**

Country of origin² and, optionally, district where grown, or national, regional or local place name.

7.2 **Non-Retail Containers**

Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside, or in the documents accompanying the shipment.

For kiwifruit transported in bulk (direct loading into a transport vehicle) these particulars must appear on a document accompanying the goods, and attached in a visible position inside the transport vehicle unless the document is replaced by an electronic solution. In that case the identification must be machine readable and easily accessible.

7.2.1 **Identification**

Name and address of exporter, packer and/or dispatcher. Identification code (optional)³.

7.2.2 **Nature of Produce**

Name of the produce. Name of the variety(ies) or cultivar(s) (optional).

The name of the variety can be replaced by a synonym. A trade name⁴ can only be given in addition to the variety or the synonym.

7.2.3 **Origin of Produce**

Country of origin⁵ and, optionally, district where grown or national, regional or local place name.

7.2.4 **Commercial Identification**

- class;
- size (if sized), expressed
 - by the minimum and maximum weight of the fruit; or
 - by number of fruit and the net fruit weight; or
 - when sized in accordance with existing trading practices, by the size and method used.

7.2.5 **Official Inspection Mark (optional)**

8 **CONTAMINANTS**

- 8.1** The produce covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.
- 8.2** The produce covered by this Standard shall comply with the maximum levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CODEX STAN 193-1995).

9. **HYGIENE**

- 9.1** It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CAC/RCP 1-1969), *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CAC/RCP 53-2003), and other relevant Codex texts such as codes of hygienic practice and codes of practice.
- 9.2** The produce should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria related to Foods* (CAC/GL 21-1997).

² The full or a commonly used name should be indicated.

³ The national legislation of a number of countries requires the explicit declaration of the name and address. However, in the case where a code mark is used, the reference "packer and/or dispatcher (or equivalent abbreviations)" has to be indicated in close connection with the code mark.

⁴ A trade name can be a trade mark for which protection has been sought or obtained or any other commercial denomination.

⁵ The full or a commonly used name should be indicated.

LIST OF PARTICIPANTS

New Zealand (Chair)

Karen Sparrow
 Karen.sparrow@mpi.govt.nz
 Ministry for Primary Industries
 Jacqueline Neave
 Jacqueline.neave@mpi.govt.nz
 Ministry for Primary Industries

Iran (Co-chair)

Nadia Ahmadi nady.ahmadi@yahoo.com
 Institute of Standards & Industrial Research of Iran

Argentina

Silvia Santos
 Senasa
ssantos@senasa.gob.ar

Brazil

Andre Brispo
 Agriculture
andre.oliveira@agricultura.gov.br

Chile

Claudia Espinoza
 SAG
claudia.espinoza@sag.gob.cl

Codex Chile (CCFFV)
ccffv.chile@sag.gob.cl

Croatia

Anita Stefenac
 Ministry of Agriculture
anita.kovacic@mps.hr

Ecuador

Veronica Pilaquinga
 Agrocalidad
veronica.pilaquinga@agrocalidad.gob.ec

Marcia Padilla Paez
 Comercio Exterior
marcia.padilla@comercioexterior.gob.ec

European Union

Denis De Froidmont
Denis.De-Froidmont@ec.europa.eu

Germany

Ulrike Bickelmann
 Agriculture
ulrike.bickelmann@ble.de

Greece

Charikleia Dimakou
 Agriculture
chdimakou@minagric.gr
 Efthymia Skourogianni
 Agriculture
eskourogianni@minagric.gr

Codex Greece

India

Dr SC Khurana
miho_nakada920@maff.go.jp

Consultant
 Codex India
khurana183@gmail.com

Italy

Antonio Fallacara
 Ministero delle politiche agricole alimentari e forestali
a.fallacara@politicheagricole.it

Pallegrino De Ieso
 Ministero delle politiche agricole alimentari e forestali
a.fallacara@politicheagricole.it

Flavio Roberto De Salvador
fr.desalvador@gmail.com

Petra Engel
petra.engel@gmail.com

Japan

Miho Nakada
 MAFF

Codex Japan
codex_maff@maff.go.jp

Korea

Jee Hwa Hong
hongjh19@korea.kr

Mexico

Gabriela Alejandra Jimenez Rodriguez
 Sagarpa
gjimenez@sagarpa.gob.mx

United States

Dorian La Fond
 USDA
dorian.lafond@ams.usda.gov

Kenneth Lowry
 USDA
Kenneth.lowery@fsis.usda.gov

David Ingram
 US Food Drug Administration
David.Ingram@fda.hhs.gov

United Kingdom

Ian Hewitt
 Rural Payments Agency
ian.c.hewett@rpa.gsi.gov.uk