



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON PESTICIDE RESIDUES

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(Prepared by Ecuador and supported by Colombia, El Salvador and Guatemala)

1. Purpose and Scope of the new work

The objective of the new work is to review and modify Group 14 - assorted fruits - inedible peel of the guideline Part of the product to which the maximum residue limits apply and which is analysed (CAC / GL 41-1993), exclude inedible skin from the laboratory MRL determination portion of the analysis.

2. Relevance and timeliness

The habit of consumption of Group 14 products (avocados, mangoes, bananas, papayas, guavas, passion fruits, kiwi fruit and pineapples) it is decisive to carry out the analysis of pesticide residues since the skin is removed, it is pertinent to specify that the part to be analyzed for the detection of pesticide residues does not include the inedible skin. The discussion paper that explains the issue further is detailed in ANNEX 1

3. Main aspects to be covered

The proposal of modification of Group 14 Assorted fruits - inedible peel of the guideline Portion of commodities to which maximum residue limits apply and which is analysed (CAC/GL 41-1993), must qualify the part of the product that applies the MRL, in order to ensure food safety and establish fair trade practices.

4. Assessment against the criteria for the establishment of work priorities

The new work maintains consumer protection from a health point of view and will prevent negative impacts on trade.

The scope of this work is to have a specific qualification for the products of this group, which corresponds to the part of the gross agricultural product to which the MRL applies that has to be prepared as an analytical sample for the determination of pesticide residues, by not specifying that the part to be analyzed is the pulp of the products, it gives the possibility of analyzing the products with the inedible skin.

The world export volume of the products included in Group 14 (avocados, mangoes, bananas, papayas, guavas, passion fruits, kiwi fruit and pineapples) is highly relevant. It can represent 72% of the export volume of the entire world fruit trade.

Production areas are distributed in all Codex regions that have tropical or subtropical climates.

5. Relevance to Codex Strategic Goals

The proposed work falls on 3 goals of the Codex Strategic Plan 2020-2025:

Goal 1.- Address current, emerging and critical issues in a timely manner

The constant updates and modifications to the established standards and guidelines will allow a proactive evolution to meet the interests and needs of Codex Members.

Goal 2.- Develop standards based on science and Codex risk-analysis principles

The risk-analysis principle should prevail in the updates of the regulations in order to protect the health of the consumer ensuring that this does not cause unnecessary obstacles to trade.

Goal 4.- Facilitate the participation of all Codex Members throughout the standard setting process

In the process of modifying this guideline, the active participation of the members is expected since the products described in Group 14 have a wide worldwide distribution.

6. Information on the relationship between the proposal and other existing Codex documents

The group will maintain its relationship with the Classification of Foods and Animal Feeds (CXA 4-1989).

7. Identification of any requirement for and availability of expert scientific advice

A call for data and scientific advice from JMPR may be required.

8. Identification of any need for technical input to the standard from external bodies

Needs for contributions from external bodies have not yet been identified.

9. The proposed timeline for completion of the new work

Approval of new work by the Codex Alimentarius Commission in 2021. Completion of work for final adoption by the Commission in 2025 or earlier.

ANNEX 1

DISCUSSION PAPER ON NEW MODIFICATION PROPOSAL TO “PORTION OF COMMODITIES TO WHICH MAXIMUM RESIDUE LIMITS APPLY AND WHICH IS ANALYZED CAC/GL 41-1993**GENERAL INFORMATION**

1. Codex Committee on Pesticide Residues–CCPR- (CX-718) has the purpose to establish maximum limits for pesticide residues in certain animal feeding stuffs moving in international trade where this is justified for reasons of protection of human health; to prepare priority lists of pesticides for evaluation by the Joint FAO/WHO Meeting on Pesticide Residues (JMPR); to consider methods of sampling and analysis for the determination of pesticide residues in food and feed; to consider other matters in relation to the safety of food and feed containing pesticide residues; and, to establish maximum limits for environmental and industrial contaminants showing chemical or other similarity to pesticides, in specific food items or groups of food. ¹
2. The CCPR has the following related standards: Classification of Foods and Animal Feeds (CXA 4-1989), Recommended Methods of Sampling for the Determination of Pesticide Residues for Compliance with MRLs (CXG 33-1999), Guidelines on Good Laboratory Practice in Pesticide Residue Analysis (CXG 40-1993), Portion of Commodities to which Maximum Residues Limits Apply and which is Analyzed (CXG 41-1993), Guidelines on the Use of Mass Spectrometry (MS) for Identification, Confirmation and Quantitative Determination of Residues (CXG 56-2005), Guidelines on Estimation of Uncertainty of Results (CXG 59-2006), Principles and Guidance on the Selection of Representative Commodities for the Extrapolation of Maximum Residue Limits for Pesticides to Commodity Groups (CXG 84-2012), Guidelines on Performance Criteria for Methods of Analysis for the Determination of Pesticide Residues in Food and Feed (CXG 90-2017) .²
3. The guideline Portion of Commodities to which Codex MRLs apply and which is analyzed (CAC/GL 41-1993) had this latest update at the CCPR thirty third session (Geneva, Switzerland, 5-9 July de 2010). The Committee considered whether the Guidelines on the Portion of Commodities to which Codex MRLs apply and which is analyzed should be kept as a stand-alone document or should be integrated in other more relevant documents that also contain information on the edible portion of the commodity to which the pesticide residue apply. The Committee agreed that, for the time being, the Guidelines should be retained as a single document and that this question be revisited upon completion of the revision of the Classification of Foods and Feeds (para 190).³
4. According guideline CXG 41-1993, Codex Maximum Residue Limits are in most cases stated in terms of a specific whole raw agricultural commodity as it moves in international trade. In some instances, a qualification is included that describes the part of the raw agricultural commodity to which the maximum residue limit applies, for example, almonds on a shell-free basis and beans without pods.
5. In other instances, such qualifications are not provided. Therefore, unless otherwise specified, the portion of the raw agricultural commodity to which the MRL applies and which is to be prepared as the analytical sample for the determination of pesticide residues is as described in 33 groups described on guideline CXG 41-1993.
6. The 33 groups are: group 1 - root and tuber vegetables, group 2 - bulb vegetables, group 3 - leafy vegetables (except brassica vegetables), group 4 - brassica (cole) leafy vegetables, group 5 - stem

¹http://www.fao.org/fao-who-codexalimentarius/sh-proxy/es/?Ink=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeeting%252FCX-701-03%252Fal65_30s.pdf

²<http://www.fao.org/fao-who-codexalimentarius/committees/committee-detail/related-standards/es/?committee=CCPR>

³ CCPR42: ALINORM 10/33/24, available at: http://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?Ink=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FMeetings%252FCX-718-42%252Fal33_24e.pdf

vegetables, group 6 - legume vegetables, group 7 - fruiting vegetables - edible peel, group 8 - fruiting vegetables - inedible peel, group 9 - citrus fruits, group 10 - pome fruits, group 11 - stone fruits, group 12 - small fruits and berries, group 13 - assorted fruits - edible peel, group 14 - assorted fruits - inedible peel, group 15 - cereal grains, group 16 - stalk and stem crops, group 17 - legume oilseeds, group 18 - legume animal feeds, group 19 - tree nuts, group 20 – oilseed, group 22 – herbs, group 23 – spices, group 24 – teas, group 25 – meats, group 26 - animal fats, group 27 - meat byproducts, group 28 – milks, group 29 - milk fats, group 30 - poultry meats, group 31 - poultry fats, group 32 - poultry byproducts, group 33 - eggs.

7. The Group 14 are the assorted fruits – inedible peel: avocados, bananas, guavas, kiwi fruit, mangoes, papayas, passion fruit, and pineapples. The portion of commodity to which the codex MRL applies (and which is analyzed) is:

- Whole commodity unless qualified.
- Pineapples: after removal of crown.
- Avocado and mangoes: whole commodity after removal of stone but calculated on whole fruit.
- Bananas: after removal of crown tissues and stalks

8. However, the habits of consumption of Group 14 products (avocados, passion fruit, bananas, pineapple, kiwi fruit, mangoes, papayas, guavas) should be taken into account when trying to carry out the analysis of pesticide residues in each region that consume them, since the skin is removed; however, it is relevant that it is mentioned in the guideline that the part to which the MRL applies is the whole product without the peel.

9. To demonstrate the relevance of the production and international trade of Group 14 products, statistics of production, export and import areas have been analyzed using sources such as FAOSTAT and various trade statistics portals. Statistics related to trade and that are detailed may not be updated until recent years as the member states may not have yet sent this information.

ASSORTED FRUITS –INDELIBLE PEEL WORLDWIDE PRODUCTION ANALYSIS

10. Group 14 products, which are listed as assorted fruits with inedible peel, are mostly produced in tropical or sub-tropical regions. Analyzing the production areas of banana, avocado, kiwi fruit, mangoes, guavas, papayas and pineapples, the regions of CCASIA, CCAFRICA and CCLAC share the majority of the production area. Table 1 shows the production areas (as of 2019) including all the countries belonging to the Codex Regions.

Table 1.-Fruits (Group 14) worldwide production areas (2019).

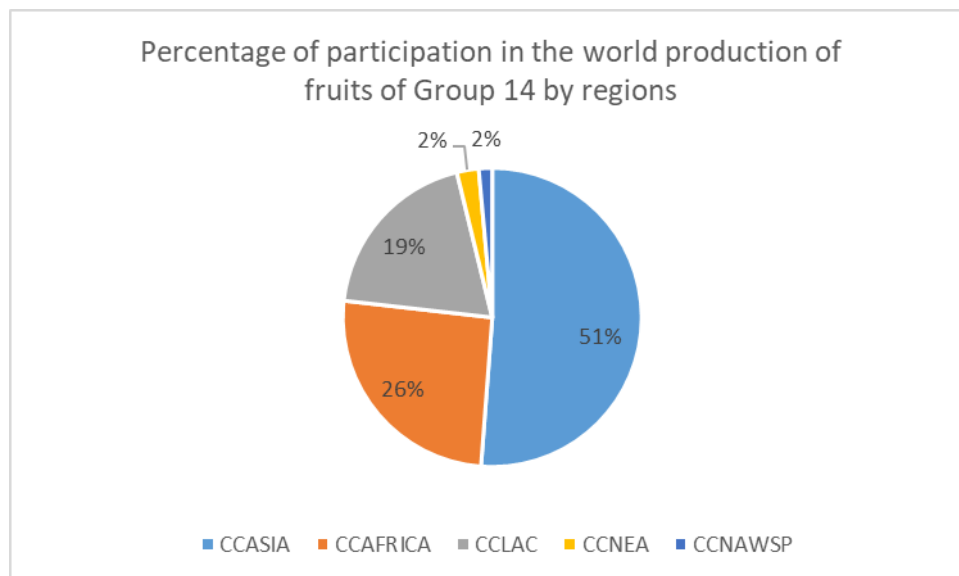
	Banana	Kiwi	Avocado	Mangoes, mangosteens, guavas	Papaya	Pineapples
CCLAC	1,212,775	7,595	463,542	532,525	96,721	249,937
CCNAWSP	103,929	16,881	42,834	14,362	1,368	11,956
CCAFRICA	1,801,469		124,369	868,411	151,352	436,930
CCNEA	96,065	12,780	1,485	200,007	1,871	338
CCASIA	1,910,983	184,655	66,755	3,969,387	210,525	425,621
TOTAL	5,125,221	221,911	698,985	5,584,692	461,837	1,124,782

Source: FAOSTAT, 2021.

Elaborated: The Phyto and Zoosanitary Regulation and Control Agency – Agrocalidad 2021.

11. CCASIA and CCAFRICA share the largest production area for inedible peel fruits. For bananas, the CCASIA and CCAFRICA have the largest cultivated area followed by CCLAC. The CCASIA and CCAFRICA also lead the production of pineapple, papaya and mango. CCLAC is the region that produces avocados the most.

Figure 1.-Percentage of participation in the world production of fruits of Group 14 by regions.



Source: FAOSTAT, 2021.

Elaborated: The Phyto and Zoosanitary Regulation and Control Agency – Agrocalidad 2021.

VARIED FRUITS OF INEDIBLE SKIN: INTERNATIONAL TRADE ANALYSIS

EXPORTS

12. Group 14 products – assorted fruit, inedible peel- are derived from the immature or mature fruits of different kinds of plants, usually shrubs or trees from tropical or subtropical regions. Edible portion is protected by skin, peel or husk. Fruit may be consumed in a fresh or processed form. The edible part is protected by a skin, rind or shell. The fruit can be eaten fresh or processed.

Table 2.-International trade (exports) for products “Chapter 08: Edible fruit and nuts; peel of citrus fruits or melons” (2016-2018).

Product code	Product label	2016	2017	2018
080300	Bananas, incl. plantains, fresh or dried	116,858,562	156,682,726	48,956,749
080390	Fresh or dried bananas (excluding plantains)	19,194,052	20,429,932	24,013,232
080810	Fresh apples	9,130,389	9,321,742	8,421,430
080510	Fresh or dried oranges	7,365,500	7,486,287	7,855,534
080520	Fresh or dried mandarins incl. tangerines and satsumas, clementines, wilkings and similar citrus ...	5,108,893	397,950	174,014
080610	Fresh grapes	4,562,286	4,893,986	4,802,789
080711	Fresh watermelons	4,241,166	4,250,896	4,552,118
080430	Fresh or dried pineapples	3,606,103	3,639,909	3,919,781
080550	Fresh or dried lemons "Citrus limon, Citrus limonum" and limes "Citrus aurantifolia, Citrus ...	3,116,446	3,414,797	3,602,212
080830	Fresh pears	2,687,949	2,818,663	2,735,416
080719	Fresh melons (excluding watermelons)	2,404,229	2,524,811	2,347,332
081090	Fresh tamarinds, cashew apples, jackfruit, lychees, sapodillo plums, passion fruit, carambola, ...	2,236,761	2,991,831	2,956,358
080930	Fresh peaches, incl. nectarines	2,121,212	2,345,783	1,982,298
080450	Fresh or dried guavas, mangoes and mangosteens	1,954,338	2,211,460	2,264,252
080440	Fresh or dried avocados	1,886,415	2,007,412	2,428,232
081050	Fresh kiwifruit	1,728,462	1,573,216	1,666,151
080131	Fresh or dried cashew nuts, in shell	1,517,683	-	1,953,512
080410	Fresh or dried dates	1,437,743	-	-
081190	Frozen fruit and nuts, uncooked or cooked by steaming or boiling in water, whether or not sweetened ...	1,241,697	1,294,093	-
080310	Fresh or dried plantains	1,143,444	1,117,203	1,341,072

Source: International Trade Center, 2021.

Elaborated: The Phyto and Zoonitary Regulation and Control Agency – Agrocalidad, 2021.

13. In international fruit trade, the products belonging to Group 14 (assorted fruits - inedible peel) represent a significant volume as shown in table 3. Taking into account the volume exported in 2016, the total exported of this group (avocados, granadillas, bananas, pineapple, kiwi fruit, mangoes, papayas and guavas) represent 72% of the total volume.

Table 3.-Group 14 products international trade by product code –metric tonnes- (2016).

Product code	Product label	2016
		Quantity
080300	Bananas, incl. plantains, fresh or dried	116,858,562.00
080390	Fresh or dried bananas (excluding plantains)	19,194,052.00
080430	Fresh or dried pineapples	3,606,103.00
081090	Fresh tamarinds, cashew apples, jackfruit, lychees, sapodillo plums, passion fruit, carambola, ...	2,236,761.00
080450	Fresh or dried guavas, mangoes and mangosteens	1,954,338.00
080440	Fresh or dried avocados	1,886,415.00
081050	Fresh kiwifruit	1,728,462.00
080310	Fresh or dried plantains	1,143,444.00
Otros	Others	58,859,774.00
	WORLDWIDE TOTAL	207,467,911.00

Source: International Trade Center, 2021.

Elaborated: The Phyto and Zoonitary Regulation and Control Agency – Agrocalidad, 2021.

14. Guideline **Portion of Commodities to which Codex MRLs apply and which is analyzed (CAC/GL 41-1993)**, describes Group 14 products as assorted fruits - inedible peel that are derived from the immature or mature fruits of different kinds of plants, usually shrubs or trees from tropical or subtropical regions, by this reason their production areas are distributed in several Codex regions. Table 4 details exportation trade in each region for Group 14 products.

Table 4.-International export trade Group 14 products -2016-2019- worldwide (metric tonnes).

		2016	2017	2018	2019
AVOCADOS	CCLAC	1,178,197	1,209,651	1,535,645	1,577,460
	CCASIA	12,006	16,694	21,661	16,278
	CCAFRICA	121,215	121,543	196,256	155,734
	CCNASWP	81,661	70,502	87,560	83,339
	CCNEA	4,747	4,071	7,854	5,388
BANANAS	CCLAC	14,830,553	15,770,509	15,496,241	16,272,704
	CCASIA	2,052,605	3,383,288	4,076,633	3,675,292
	CCAFRICA	520,076	506,467	538,048	557,092
	CCNASWP	573,656	594,472	583,915	593,888
	CCNEA	127,827	175,858	251,040	140,770
KIWI FRUIT	CCLAC	671	1,007	507	771
	CCASIA	24,869	26,393	22,186	29,117
	CCAFRICA	6,308	7,650	660	756
	CCNASWP	597,382	471,630	552,893	543,216

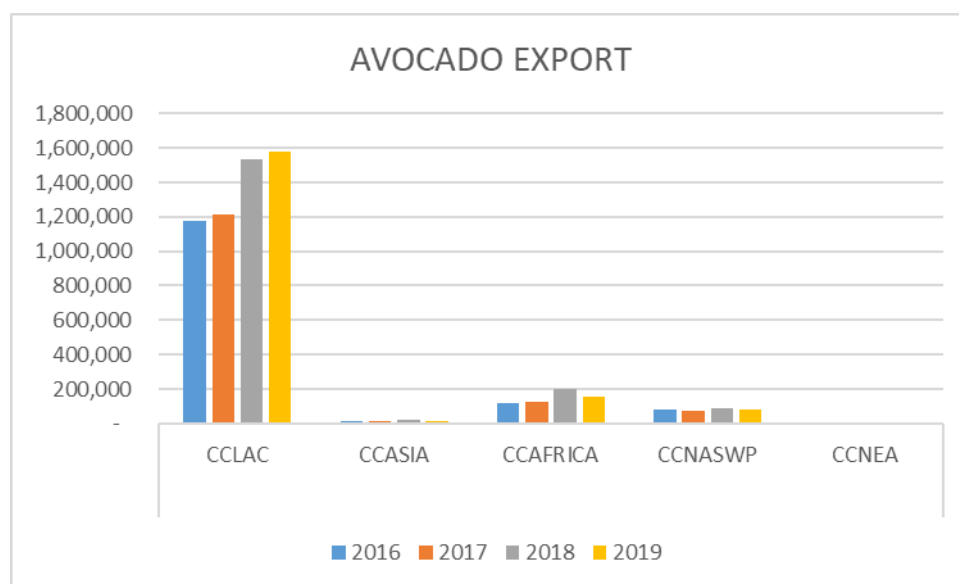
	CCNEA	100,439	119,817	110,542	103,050
MANGOES, GUAVAS	CCLAC	782,244	900,208	877,510	947,526
	CCASIA	581,423	661,091	725,467	750,000
	CCAFRICA	87,833	103,534	92,686	89,595
	CCNASWP	30	28	23	26
	CCNEA	65,563	73,323	54,830	34,446
PAPAYAS	CCLAC	272,868	272,447	267,539	272,911
	CCASIA	51,967	55,259	51,368	54,306
	CCAFRICA	3,597	7,552	12,001	4,629
	CCNASWP	13,402	14,536	14,575	14,555
	CCNEA	197	228	1,167	844
PINEAPPLE	CCLAC	2,335,240	2,486,507	2,649,134	2,556,589
	CCASIA	635,811	580,143	551,487	586,548
	CCAFRICA	33,284	42,940	45,086	50,681
	CCNASWP	120,536	122,031	109,895	106,236
	CCNEA	9,207	10,038	19,289	17,846

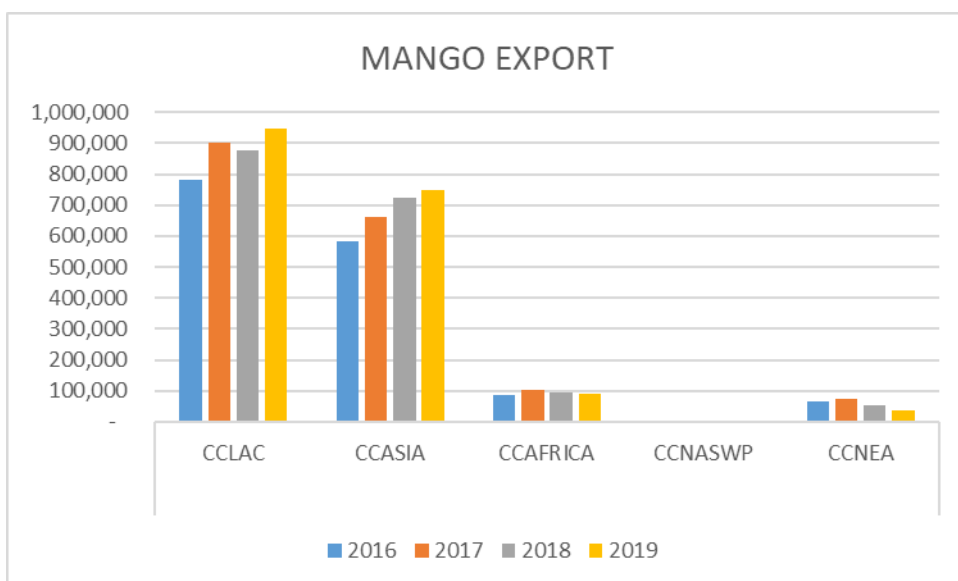
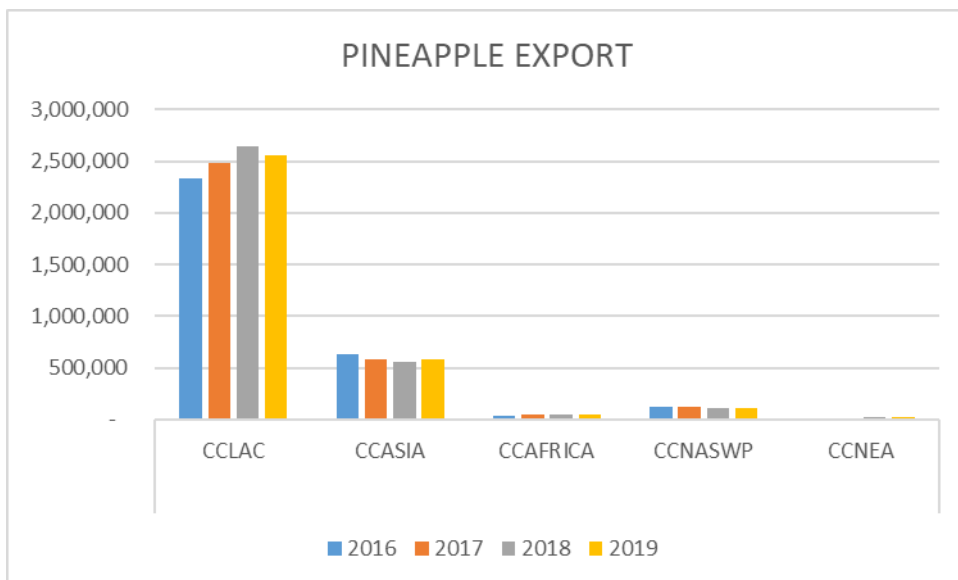
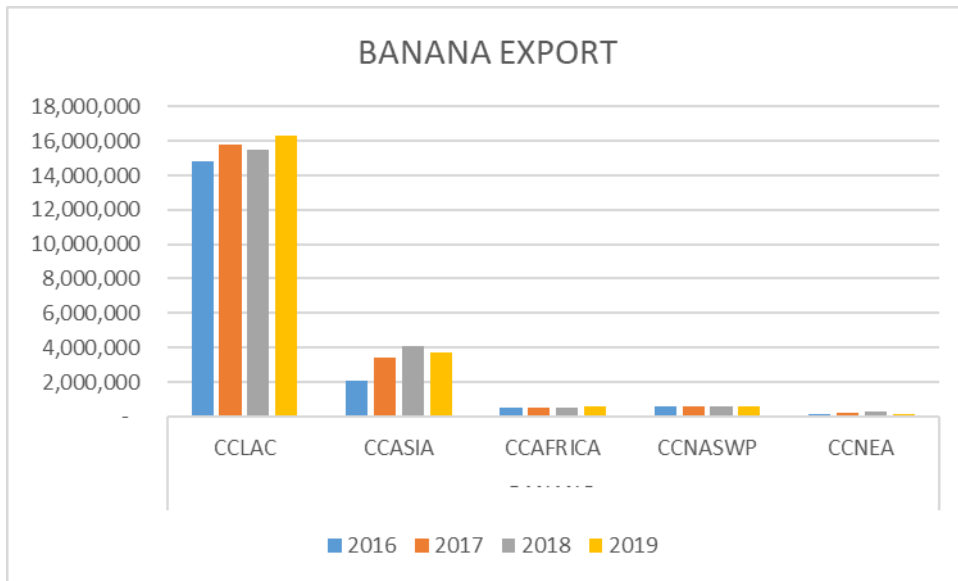
Source: FAOSTAT, 2021.

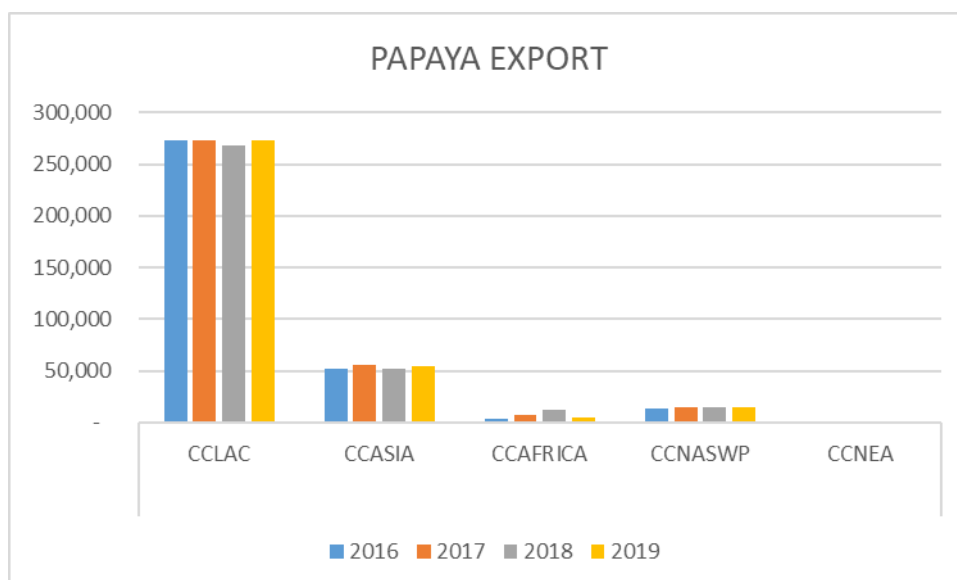
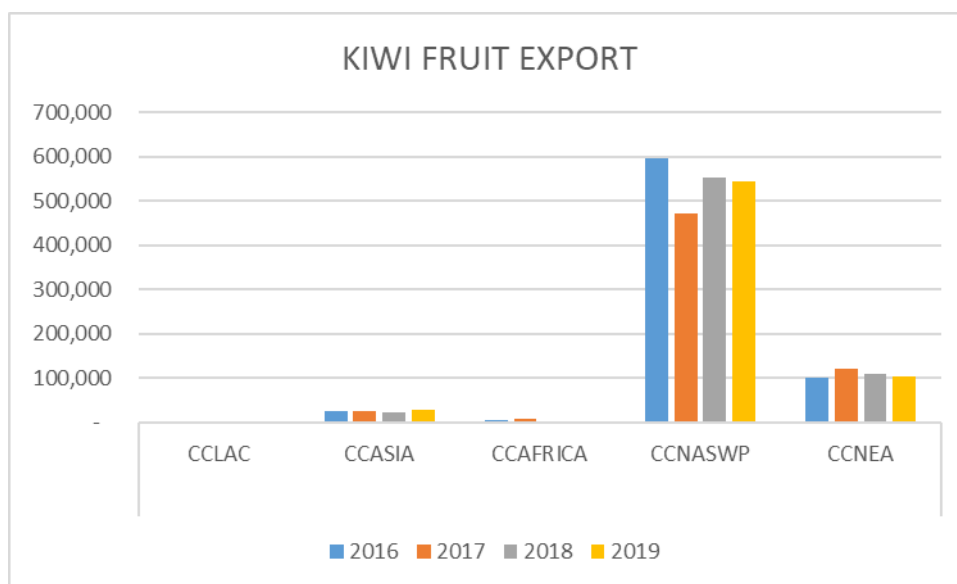
Elaborated: The Phyto and Zoosanitary Regulation and Control Agency – Agrocalidad, 2021.

15. In the trade of group 14 products, the largest volumes stand out (in descending order) for the banana, pineapple, avocado, kiwi fruit and mango items. The CCLAC region brings together some of the largest volumes, with a significant production contribution from CCASIA (mango, banana, pineapple, papaya). The CCNASWP region leads the world kiwi fruit production. (figure 2)

Figure 2.-Export of various inedible peel fruits (avocado, banana, pineapple, mango, kiwi fruit, papaya) by region, years 2016-2019, expressed in metric tonnes.







Source: FAOSTAT, 2021.

Elaborated: The Phyto and Zoonitary Regulation and Control Agency – Agrocalidad 2021.

Table 5.- International import trade Group 14 products -2016-2019- worldwide (metric tonnes).

		2016	2017	2018	2019
AVOCADO	CCLAC	67,007	61,795	82,739	76,471
	CCASIA	126,912	128,837	164,894	149,084
	CCAFRICA	9,419	14,777	19,388	20,353
	CCNASWP	958,732	996,540	1,145,876	1,215,434
	CCNEA	42,066	45,341	47,252	44,285
BANANA	CCEURO	792,750	894,938	1,091,983	1,139,310
	CCLAC	872,050	939,853	859,464	959,313
	CCASIA	2,438,795	2,810,682	3,331,736	3,721,141
	CCAFRICA	122,781	162,297	218,641	226,634

	CCNASWP	5,262,532	5,481,118	5,438,492	5,344,682
	CCNEA	1,329,629	1,477,050	1,235,150	1,148,934
	CCEURO	10,274,639	11,287,305	11,374,485	11,563,765
KIWI FRUIT	CCLAC	74,020	68,487	71,355	64,879
	CCASIA	387,594	360,700	383,427	409,983
	CCAFRICA	10,895	9,936	10,343	12,637
	CCNASWP	134,498	107,624	109,263	111,469
	CCNEA	84,377	60,208	115,939	65,806
	CCEURO	971,124	980,828	931,575	916,406
MANGOES, GUAVAS	CCLAC	15,094	14,115	13,345	12,589
	CCASIA	204,975	250,211	285,183	264,098
	CCAFRICA	12,774	27,166	26,180	16,661
	CCNASWP	446,658	485,497	476,906	493,038
	CCNEA	265,495	264,321	236,177	235,094
	CCEURO	582,978	654,764	756,860	752,506
PAPAYAS	CCLAC	20,511	26,783	25,020	25,223
	CCASIA	35,261	34,314	29,195	32,830
	CCAFRICA	3,698	7,737	11,768	10,446
	CCNASWP	221,588	212,936	203,779	205,564
	CCNEA	18,357	20,264	19,512	20,734
	CCEURO	55,851	62,557	58,021	61,212
PINEAPPLE	CCLAC	92,902	95,692	84,940	83,864
	CCASIA	372,183	430,334	473,321	519,891
	CCAFRICA	9,575	13,795	20,559	14,021
	CCNASWP	1,204,277	1,288,824	1,301,785	1,272,391
	CCNEA	102,980	114,946	103,820	102,438
	CCEURO	1,389,765	1,514,534	1,635,044	1,618,748

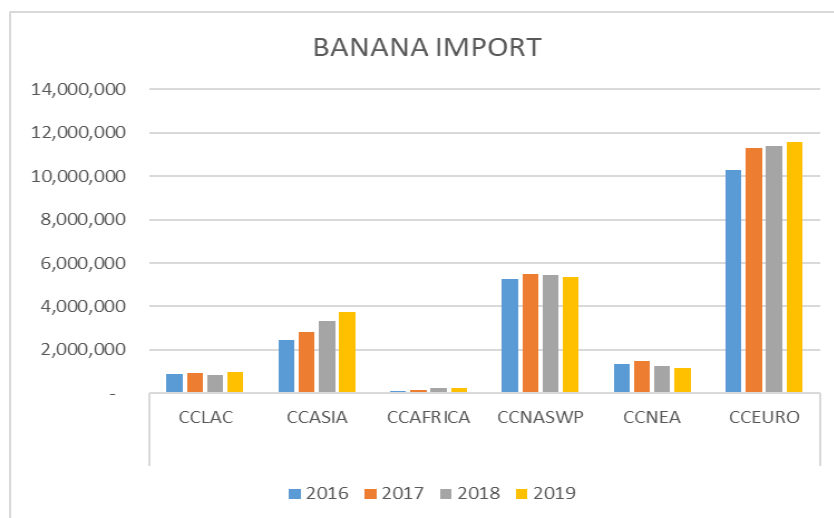
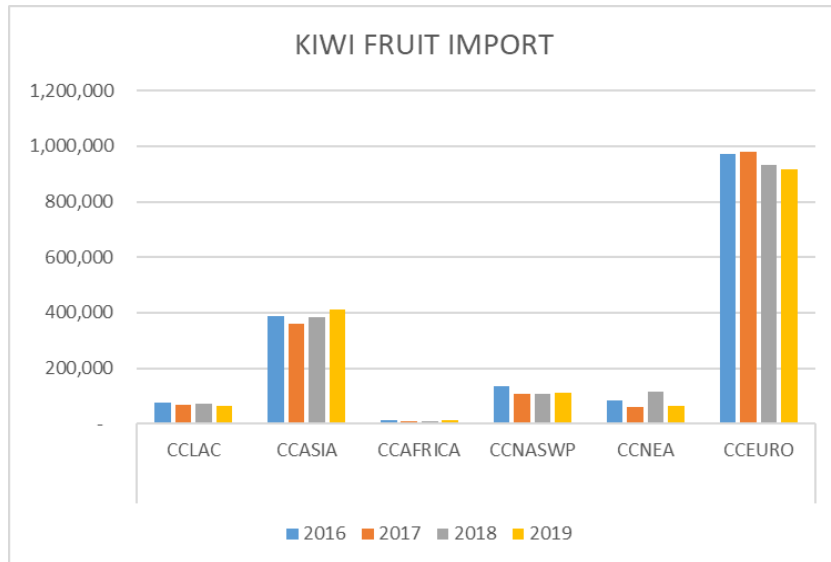
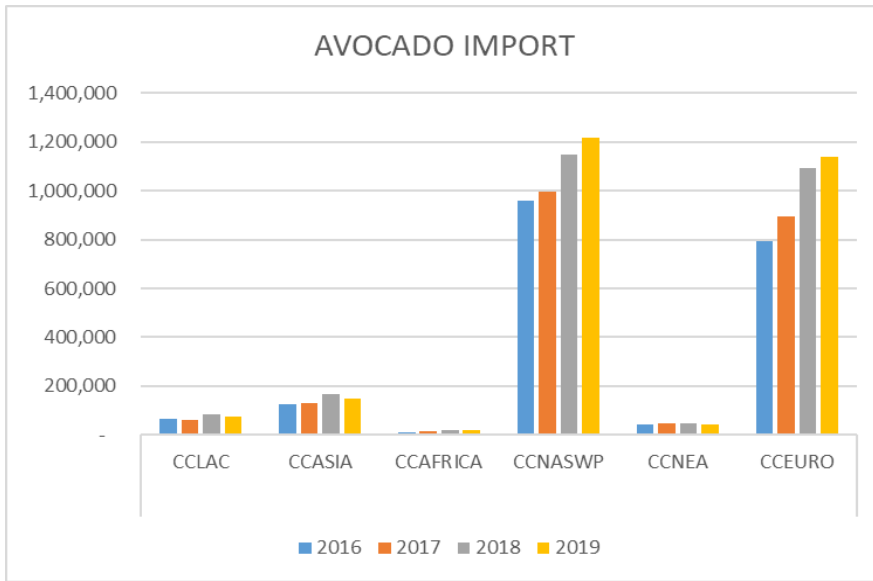
Source: FAOSTAT, 2021.

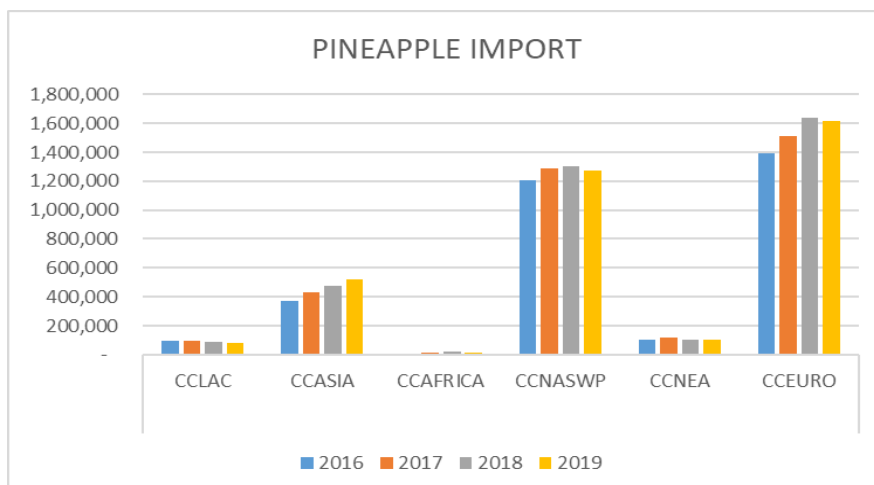
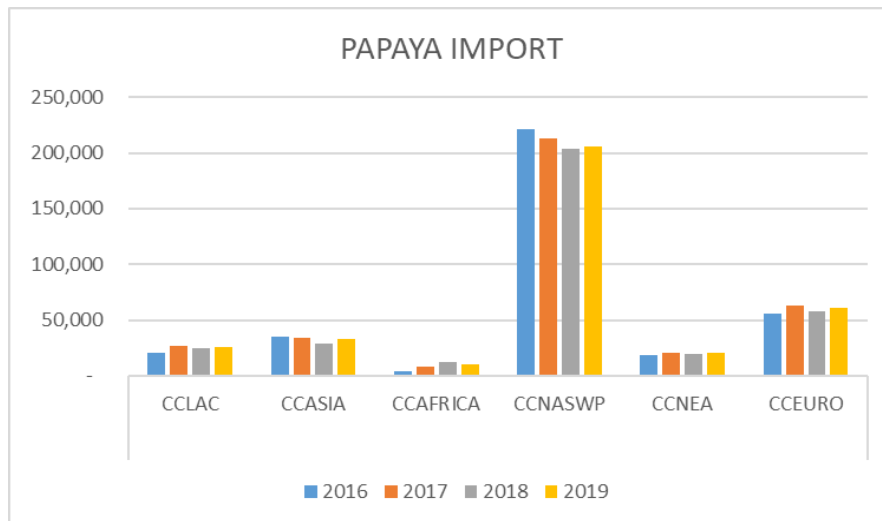
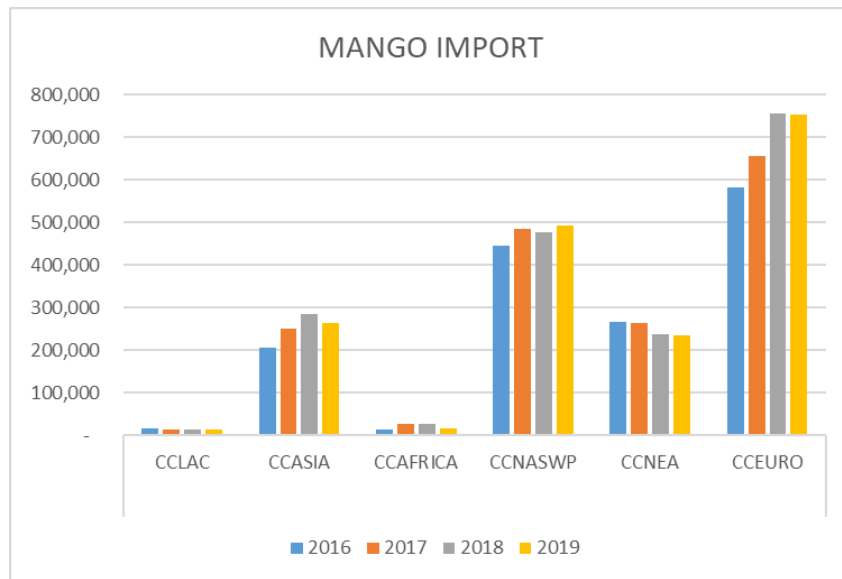
Elaborated: The Phyto and Zoosanitary Regulation and Control Agency – Agrocalidad 2021.

16. Regarding consumption, measured through the importation of these products (Group 14), the region of North America and the Southwest Pacific and Europe import the highest volumes, this mainly due to the fact that their climatic conditions do not favor the production of these crops -more temperate climates- (table 5).

17. The North American and Southwest Pacific region imports a significant volume of avocado, mango, papaya, and pineapple (Figure 3). The European region stands out in the import of bananas, kiwi fruit and pineapple

Figure 3.-Import of various inedible peel fruits (avocado, banana, pineapple, mango, kiwi fruit, papaya) by region, years 2016-2019, expressed in metric tonnes.





Source: FAOSTAT, 2021.

Elaborated: The Phyto and Zoonitary Regulation and Control Agency – Agrocalidad 2021.

PROPOSAL OF MODIFICATION TO "PORTION OF COMMODITIES TO WHICH MAXIMUM RESIDUE LIMITS APPLY AND WHICH IS ANALYZED CAC/GL 41-1993"

18. Most of the production of the Group 14 items occurs in relatively less developed countries, with a strong export vocation. For this reason, as there is no specific selection for the products of this group, in which corresponds to the part of the gross agricultural product to which the MRL applies and which has to be prepared as an Analytical Sample for the determination of pesticide residues, may have a negative impact on these economies, without this implying that consumer health is neglected.

19. For that reason, it is necessary to consider the modification of the **Portion of commodities to which maximum residue limits apply and which is analyzed (CXG 41-1993)**, so that for the group of assorted fruits of inedible peel, it is specified that the part to be analyzed for pesticide residues does not include the skin or peel.

20. The current CXLs related to "Group 14 Assorted fruits - inedible peel" (avocados, passion fruit, bananas, pineapple, kiwi fruit, mangoes, papayas, guavas) have been established based on the edible part.

21. By not considering the analysis of the products without the peel, the MRLs established for them could be exceeded, reaching the conclusion that the food is not suitable for consumption, and thus would lead to obstacles and / or unfair practices in the international trade.

RECOMENDATIONS

22. CCPR is invited to consider whether:

- a) Examine the relevance of starting work for the modification of the Guideline Part of the product to which the maximum residue limits apply and which is analyzed (CAC / GL 41-1993) specifically Group 14 assorted fruits with inedible skin, for modifying "Whole commodity unless qualified" by "Product with peel removed."
- b) Require to the JMPR a request for pesticide residue analysis data performed on the whole product and the product without skin for Group 14 fruits.
- c) Any other views in relation to the information and conclusions provided in this paper.