

codex alimentarius commission



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ESTABLISHMENT OF MRLS FOR PROCESSED AND READY-TO-EAT FOODS

Document prepared by a drafting group consisting of The Netherlands, EC and USA

Summary

Although the practices and policies of the Committee concerning MRLs for pesticide residues in processed or ready-to-eat foods have been considered several times in the CCPR and JMPR, there is no single concise and comprehensive statement to specify when such MRLs or other measures are necessary within Codex, nor one to define the extent to which Processed Foods are subject to the MRLs that apply to Raw Agricultural Commodities (RACs). Given the high volume of trade in processed foods and the Codex goal to protect consumers' health and promote fair trade, CCPR should develop such clear direction. The intention of this paper is to advance a proposal to resolve both of these matters. It is proposed that (1) Guidelines for the application of Codex MRLs for RACs to Processed Foods derived from the RAC should be developed, and (2) Codex pesticide MRLs should be established for a defined set of major Processed Food commodities when pesticide residues concentrate significantly during processing or when necessary for public health concerns. The drafting group for this paper did not yet reach full agreement on a proposal to also incorporate into the MRL listings additional information on residue behavior during processing in the form of generally applicable or substance-specific processing factors. It is recommended that the Committee undertake additional deliberation on the utility and implications of this proposal.

A. Background and Introduction

The Delegation of the United States presented CX/PR 03/17 at the 35th Session, as follow-up to the discussion at the 34th Session that arose out of pending MRLs for malathion (49), thiabendazole (65), and 2-phenylphenol (56). That paper documented the past practices by reviewing existing and pending MRLs for various processed and ready-to-eat foods. The review revealed that sometimes such MRLs have been established, particularly for processed fractions from cereal grains, oils pressed from seed crops, and dried fruits, but that a consistent approach has not routinely been followed.

CX/PR 03/17 recommended that MRLs for raw agricultural commodities (RACs) should apply to all processed or ready-to-eat foods or feeds, and that separate MRLs are required only where residues concentrate on processing. However, the Committee did not reach consensus on this point (Alinorm 03/24A para 206 – 210). The Committee also suggested further consideration of the post-harvest use of pesticides compared to their use in or on growing crops, and consideration of whether the MRLs on Processed Foods serve for enforcement of GAP.

B. Problem definition

The present guideline, stating that if no specific MRLs are set, MRLs for RACs also apply to the processed forms of that commodity, is not clearly expressed and published (it is only stated in the report ALINORM 81/24, but does not appear in the introductory text to the list of Codex MRLs). The guideline is explained in the Explanatory Notes, Section 2, Classification of Foods and Feeds, Codex Alimentarius, Volume 2, Second Edition (reprinted 1998). The practice is also detailed in the FAO Manual on the Submission and Evaluation of Pesticide Residues Data, Second Edition, 2002, page 44. Moreover, the JMPR has reiterated its practice for estimating MRLs for processed commodities in the 2003 Report, General Items. It is also evident that this guideline as such does not adequately cover the present situation where often no or insufficient separate MRLs for processed products have been established. More clear guidance is therefore needed on the issue whether and how MRLs for RACs can be applied to processed products.

An obvious problem is that residue levels could be concentrated in foods by processing, so that the MRL for the RAC might be exceeded in the processed commodity. In CX/PR 03/17 it is suggested that specific MRLs would be required in those cases to avoid disruptions in international trade. In the 35th CCPR it was e.g. mentioned that chilli pepper powder often gives rise to trade problems. It would be very time consuming to develop specific Codex MRLs for chilli powder for all the pesticide MRLs that apply to peppers. Milk could serve as another example. MRLs are set for milk, but international trade is mostly in the form of milk powder or other concentrated or otherwise processed milk products. As an alternative to specific MRLs for some concentrated food items, it could be considered to establish a general rule that concentration effects of processing have to be taken into account in the application of a MRL for a RAC to a processed commodity. A specific description of the procedure to do this would be needed to avoid misunderstandings.

In the case that a processed commodity will contain less residues than the RAC, there might sometimes also be problems associated with applying the MRL for the RAC to the processed commodity. Primarily, this will occur if the dietary risk assessment relied on the belief that most of the residue will be lost in conversion to the processed commodity. For example, for orange juice, if the dietary risk assessment could only be judged acceptable based on a 90% reduction of the RAC residue from peeling, applying the RAC MRL per se to orange juice could lead to public health concerns. This issue is not covered by the existing JMPR policy for estimating MRLs for processed commodities.

In light of the previous discussions, the Delegation of the European Community was asked to prepare an additional paper on this topic to suggest a possible policy approach, in cooperation with the delegation of the United States. Therefore, the present paper also seeks to address the questions that were raised in the report from the 35th Session through discussion of the possible policies that the CCPR could adopt concerning MRLs for processed and ready-to-eat foods and feeds.

Definition of Processed Foods: For brevity, throughout this paper, the term “Processed Foods” refers to human food or livestock feed commodities that are obtained through the industrial modification of one Raw Agricultural Commodity (RAC) and which are traded as such internationally. Processed Foods includes food ingredients such as flour and bran that are obtained through milling of grain and oil seed fractions that result from pressing or other oil extraction procedures. Processed Foods also includes “Ready-to-Eat” foods such as dried fruits, vegetables, and juices prepared from a single RAC through physical size reduction (peeling, trimming, chopping, etc.), washing, or the removal / addition of water (fruit drying or juice production) prior to distribution and sale. The term Processed Foods however does not include foods after the preparatory steps such as washing, trimming, or cooking that may be performed by the consumer immediately prior to food consumption.

There is growing production and international trade of processed foodstuffs derived from several commodities, such as soups, sauces, pizza, casseroles, candy, soft drinks, baked goods, etc. that may be available as packaged grocery items. It will be obvious that these multi-ingredient foods are difficult regarding the judgment of their residue content. The discussion of Processed Food MRLs should not be inferred to envision establishment of MRLs for foods created via blends of several RACs or processed foods. These complex blends of foods are outside the ability of the Committee to integrate the contribution of residues from each component in the recipes used globally. However, processing factors arising from appropriate residue studies may inform local food authorities who seek to understand how RAC residues may transfer into such composite foods and some general guidance about how to handle available data in these cases may be appropriate.

C. Specific Considerations

Post-Harvest uses. The 35th Session of the CCPR (Alinorm 03/24A, para 208) stated that a policy proposal should account for differences in pesticide applications to commodities after harvest as compared to those when the crop is growing. Post-harvest application is not subject to geographic variability, and causes primarily surface residues, compared to in-crop treatments. Because of these matters, residue and processing data from post-harvest treatments may require special technical considerations that influence the conduct and applicability of the study information. From a policy view, if GAP specifies post-harvest treatments, then appropriate RAC and processing data should be presented and reviewed, and the same decision-making procedure can be followed, among the above options, regarding MRL establishment.

In some cases, post-harvest (or even preharvest) treatments are made only to RACs intended for “fresh market” consumption. These treatments are used to preserve or protect the RACs during storage and transit. Although such post-harvest-treated commodities are not planned for processing, sometimes the unexpected occurs, and fruits and vegetables produced for fresh market consumption are re-routed, because of culling, excess supply, or market timing reasons. Therefore, although a “fresh-market only” rationale may in theory support a waiver of processing data, the Committee should weigh whether it has sufficient confidence to do so often.

Enforcement. Codex MRLs are established to ensure the protection of public health in regard to consumption of internationally traded agricultural commodities. National governments have responsibility for enforcement of the label instructions that they have authorized, as well as enforcement of other forms of Good Agricultural Practice. A variety of programs and mechanisms exist to facilitate local enforcement activities. Normally, control of GAP in food commodities will be aimed at RACs. Once a commodity has left the farm and entered into international commerce, the trace back to a potential GAP violation is tenuous at best. Assisting local authorities in their GAP enforcement activities is not a principle purpose for Codex MRLs and should not be the basis for a decision to establish them. However, when residue decreases should normally occur via processing and these are considered significant from a public health point of view, it may be appropriate to incorporate this principle in national residue level enforcement, because abnormally high residue levels in processed products indicate possible transgressions of GAP. In many cases control of pesticide residues in processed foodstuffs will be aimed at imported products, e.g. fruit juices, where the production GAP is outside the control of the national authorities of the importing country and thus the enforcement can only be related to consumer risk. Therefore it will be useful for the protection of international trade when Codex guidance exists about the correct interpretation of residue levels in processed products.

Calculation of Dietary Exposure Estimates. The FAO Manual on the Submission and Evaluation of Pesticide

Residues Data for the Estimation of Maximum Residue Levels In Food and Feed (2nd Edition, Rome, 2002, <http://www.fao.org/ag/agp/agpp/Pesticid/JMPR/Download/faom2002.doc>), provides explicit procedures to calculate the STMR-P to represent the median residue level in processed food commodities for the estimation of chronic dietary exposure and risk. MRLs for Processed Foods are not required to conduct such dietary exposure estimates and risk assessments.

General Approach for the Use of a RAC MRL for a Processed Food. The 35th Session requested additional information about this subject. Two approaches can be considered.

1. The simplest and most obvious approach is to numerically apply the RAC MRL to the Processed Food, provided that the residues do not concentrate. That is, if the MRL for a chemical is 1 ppm on wheat grain, in the absence of other MRLs for the chemical in wheat processed fractions, for instance wheat flour, wheat bran, etc., the allowed residue of the chemical in these processed commodities is likewise 1 ppm. Such a policy is straightforward to apply, since no added information or calculation is needed. This is analogous to the present JMPR acute dietary intake procedure of using the high residue (HR) for the RAC to cover the processed commodity when no data are available on the processed commodity. It will be obvious however that this simple approach does not allow GAP enforcement and also does not cover possible cases of public health concern, when residue decline by processing is a prerequisite for accepting the MRL for the RAC.

2. The alternate approach is to attempt to adjust the allowed residue in the Processed Food by consideration of processing factors. Such processing factors could result from processing data or from standard estimations of the equivalent weight of RAC that was needed to produce the Processed Foods. An illustration of the latter idea (using the above example) is: assuming that flour is 70% by weight of the wheat grain, then the allowed residue of the chemical would be 1.4 ppm (1ppm / 0.7) in flour. The FAO Manual (cited above) recommends this second approach, by stating the following:

“The JMPR is aware that there is a considerable trade in manufactured foods based, for example, on fruits, vegetables, cereals and meat. However, the variety of forms under which the products are offered makes it impossible to recommend MRLs for all possible processed foods. **For this reason the JMPR has specified that, in the case of processed foods for which no MRLs have been recommended, the maximum residue permitted in the processed food should not be greater than the maximum residue permitted in the equivalent weight of the raw agricultural commodity.** (*Emphasis added*) The JMPR frequently estimates maximum residue levels for important Processed Foods and feeds in international trade when residues concentrate in these products at levels higher than in the raw agricultural commodities from which they are derived (e.g. oil, bran, peel, etc.). Even when the estimates are not recommended for use as maximum residue limits or when residues do not concentrate in the processed product, the JMPR will continue to record in its monographs the effect of processing on the level and fate of residues in food. This has been found to be critical for better estimates of dietary intake of pesticides.”

This processing factor approach offers more technical accuracy, but has the disadvantage that its use requires the immediate availability of either specific processing factor information or a list of uniform default processing factors, and expertise in the use of the information. It therefore presents the possibility for delays in obtaining the specific information as well as disputes about the most correct figures, which will be difficult to resolve at the international level when commodities for import arrive. Choosing this option should therefore imply that further practical guidance is given about how to apply processing factors. If the most important processing factors could be added in a footnote to the MRL for the RAC, this would help make the information more readily available. The Committee could urge for a conservative approach in this matter, such as suggesting that some safety factor be applied before concluding that a MRL-violation has occurred. In practice it is not expected that many problems will be encountered, because control of MRLs is primarily in RACs, and processed products will only be sampled and controlled when there are specific reasons to do so.

Present country policies regarding processed products. At present there is no general information about how countries deal with residues in processed products. The USA does not establish national MRLs for processed foods that are below the MRL of the RAC and considers such lower MRLs (which sometimes have been proposed in Codex, e.g. for oil from oil seeds) to be a potential trading barrier. The EC has a general provision for the application of MRLs for RACs to processed foods, taking into account both concentration and dilution factors. Practical guidance about this application is still lacking however. If the Committee desired to know in detail about the past practices and policies of individual national and regional authorities in regard to the establishment of MRLs for Processed foods and feeds, a Circular Letter could facilitate the compilation of that knowledge.

Translation / Extrapolation of Processing Data. Sometimes it is scientifically reasonable to utilize data from one commodity to support MRL or dietary exposure decisions about a similar commodity. Usually, it is desirable to generate data on the most widely consumed commodity, and allow its extrapolation to less commonly consumed related foods. The same may be true in some cases for processing data. For example, a processing factor derived through study of residue behavior when grapes are dried to raisins may also be applicable to other dried fruits. Similarly, data from rapeseed oil may also be applicable to other oil seeds. It would be useful to have specific information about the extent to which processing data may be translated between commodities in the Codex system.

A simple form of extrapolation of processing data would be the use of concentration factors in the processing of a product to calculate appropriate MRLs for the processed product from the available RAC MRLs. This has e.g. been done for the dried chilli peppers., using a concentration or dehydration factor of 10.

Present introductory text for the List of Codex MRLs for pesticides. An introductory text to the list of Codex MRLs for pesticides was last published in Vol. 2 of the Codex Alimentarius, but could not be retrieved in the list of Codex Standards as they are now on the Codex website.

The present text under the heading **Codex maximum residue limits for processed foods** is as follows:

As a rule, Codex MRLs and EMRLs are established for raw agricultural commodities. However, when it is considered necessary for consumer protection and facilitation of trade, MRLs and EMRLs are also established for certain processed foods on a case-by-case basis, taking into consideration information on the influence of processing on residues.

Additional text is provided in the Introduction to Section 2 (Classification of Foods and Feeds), Vol. 2 of the Codex Alimentarius:

In the event that residues are greater in the processed food than in the raw agricultural commodity from which it is derived, a separate MRL should be considered for the processed food. In addition, there are a number of situations where special considerations may be needed:

- (i) when the processed food represents the sole or major food intake of infants and young children;*
- (ii) when toxic interaction or degradation products from pesticides are found in the food during or after processing;*
- (iii) when a significant residue results from a pesticide used in processing or storage practice (including impregnation of wrapping materials).*

Assuming that this is, or should be, an official Codex Standard, it seems to be appropriate to revise it regarding the issue of application of the MRLs to processed commodities and publish it accordingly in the list of Codex Standards, when it is adopted in revised form. It may be necessary to make some other changes in the introductory pages, but these are not addressed here.

D. Possible Policy Options

1. Establish MRLs only for Raw Agricultural Commodities, regardless of the effect of processing on residue levels.

Discussion

Pros: Such a policy is clear and easily understood for implementation. It would streamline the work of CCPR and JMPR since overall fewer MRLs would be needed.

Cons: If changes in residue level caused by processing were completely ignored, the accuracy of dietary exposure assessment would be seriously reduced, which would further complicate the present difficulties for risk assessment, where more refinement is already often needed. Processing data will therefore still be needed for exposure assessment purposes. In the absence of Codex guidance regarding the application of Codex MRLs for RACs to processed commodities, different national policies regarding this issue will probably be followed, possibly leading to unnecessary trade disputes.

2. Consider establishing processed food MRLs on a case-by-case basis, only when CCPR determines they are needed, without any specific criteria. Considerations may include the extent of consumption or international trade, the magnitude of residues or the impact that processing has on the residue level. If no processing data are available, or when the GAP provided indicates processing of treated commodities is unlikely, establish MRLs only on RACs, and disregard the possibility of residues of concern in Processed Foods for that chemical unless they become trade irritants.

Discussion

Pros: This seems to describe the present policy, so its continuation would be effortless. This policy takes full advantage of the experts involved, who may be able to foresee when MRLs are needed and when they are not, leading to efficiencies of effort that written criteria cannot achieve.

Cons: Processing residue data are a standard national requirement for the establishment of RAC MRLs on crops that are normally processed. The establishment of RAC MRLs, which many governments believe apply also to Processed Foods, without reviewing processing data to determine if concentration occurs, can lead to apparent violations. The lack of a systematic process for evaluating residue levels in internationally traded Processed Foods represents a situation that is open to both errors in judgment and scientific criticism, thereby undermining the credibility of the system.

3. Establish MRLs for each significant internationally traded Processed Food that is derived from a RAC for which MRLs are established. This would apply regardless of whether the data indicate that processing leads to reduction, no change, or concentration of residues. Identify a specific list of Processed Foods that are traded in international commerce and consumed to a significant extent. For the RACs from which those listed foods are made, processing residue data would be considered as obligatory data in support of any RAC MRL proposal.

Discussion

Pros: Such a policy is clear and easily understood for implementation: every listed internationally traded food requires a Codex MRL. It would provide the most precise set of residue standards from which to judge import acceptability, dietary exposure, or GAP compliance, since each traded commodity is linked to an explicit MRL. If the acceptable dietary exposure for the chemical involved relied on residue reduction during processing, establishment of MRLs adds transparency and confidence that consumers are doubly safeguarded via MRLs on both RAC and Processed Foods.

Cons: It may be difficult to agree on a list of internationally traded Processed Foods, especially for the “ready-to-eat” category, where the list of foods could theoretically become very large. The JMPR and CCPR workloads will increase, since many additional MRLs will be needed compared to today’s situation. The existence of Codex MRLs for Processed Foods at levels below that for the corresponding RAC will be a substantial difference compared to most national systems, and might cause trade difficulties. Since processing data would be needed more often, submission and data review efforts will increase. The existence of MRLs implies that sampling and analysis methods are available for MRL enforcement, but the applicability of existing methods is doubtful for many Processed Foods. The global variability in processing methods will not likely be accounted for in the available processing data, so that an increase in the violation rate is likely, unless utmost care is taken to develop globally valid processing factors, taking into account the full range of processing procedures that are used throughout the world.

4. Establish MRLs for each significant internationally traded Processed Food that is derived from a RAC for which MRLs are required, but only when the data indicate significant concentration (e.g., 150%) due to processing. Identify a specific list of Processed Foods that are traded in international commerce and consumed to a significant extent. For the RACs from which those internationally traded foods are made, processing residue data would be considered as obligatory data in support of any RAC MRL proposal.

Discussion

Pros: Such a policy is consistent with that of number of governments, and could therefore facilitate harmonization of national and international MRLs. It is easily understood with clear criteria establishing when MRLs are needed on Processed foods. It is efficient because MRLs are established only when they are clearly needed due to concentration of residues. It addresses the perception that today’s CCPR sometimes fails to consider concentration of residues on Processed Foods.

Cons: It may be difficult to agree on a list of internationally traded Processed Foods, particularly for the “ready-to-eat” category. It may be difficult to agree on the numerical threshold that connotes significant concentration – is 150% appropriate? The JMPR and CCPR workloads will increase, since additional MRLs will be needed compared to today’s list. Since processing data would be needed more often, submission and data review efforts will increase. It is debatable whether

chemical-specific studies are needed in all cases, or whether use of standard generic processing factors, due to dehydration for example, might be more efficient.

5. Establish a general Guideline for the application of MRLs for RACs to processed food commodities. This would include a general statement that MRLs for RACs may be applied to processed foods derived from that RAC, taking the concentration, dilution, distribution or disappearance factor of the residue into account. Further guidance could be provided about the correct interpretation of that rule, as part of the evaluation of a substance by JMPR, based on processing studies. Also general guidance could be provided about concentration (e.g. by drying) or dilution (e.g. in the preparation of soft drinks), by developing general processing factors (not chemical specific), for processed foods that are important in international trade. This guidance might take the form of “processing factors” that could be applied locally as needed, starting with the RAC MRL.

Pros: Such a policy is consistent with present legislation in the EC, which would facilitate the development of international guidance about the interpretation of this general approach. The advantage of this type of approach is that all cases can be judged on the basis of available data and common sense, even in the absence of international guidance about the best interpretation. This type of approach is flexible and is in general not inconsistent with existing national or international MRLs for processed products, provided these are based on adequate data. An advantage is also that the list of Codex MRLs can be limited mainly to RAC MRLs, and that no adaptations for processed foods are necessary when the MRL is changed. When more clarity is desired in specific cases, such as vegetable oils, specific international MRLs can be established for important processed commodities, in accordance with the processing factors of the residue.

Cons: The addition of processing factors officially into the Codex MRL system is new and therefore unknown. Do processing factors calculations serve as trading standards for WTO or enforcement, or do they only offer additional scientific information? Will processing factors go through the Step Process for approval like an MRL? How is the choice between use of a Processed Food MRL versus a processing factor made? Some countries may oppose setting processing factors based on dilution or disappearance of the residue and applying these in calculating residue limits in processed products, because it might lead to more MRLs being exceeded and would not be necessary from a public health point of view. Because the application of processing factors involves more opportunity for judgment and interpretation, will it lead to more trade disputes than an MRL would? The workload of the JMPR is expected to be only marginally enlarged, because processing effects are already discussed in detail, as far as data are provided.

E . Possible recommendations for discussion (note that not all members of the drafting group necessarily endorse all of the recommendations)

1. Both Options 4 and 5 have merit as a means for the Committee to provide more clear guidance on residues in Processed Foods, possibly in different circumstances. It is proposed to consider the development of a combination of the two for implementation; the drafting Delegations did not yet have time to fully consider all of the implications of such a combined system.
2. When a procedure is agreed and adopted, the Introductory Text for the List of Codex MRLs should be amended accordingly, to fully explain the Committee’s intention, and made plainly available on the Codex website.
3. The JMPR should be asked to specifically identify processing factors, based on chemical-specific data, which are appropriate to translate RAC MRLs for use with Processed Foods that are in the Codex Classification system. For processed foods where generic information about a concentration factor, such as water loss through drying, etc. can be used, the JMPR should also note these factors, but distinguish them from the chemical-specific information. (This is really a somewhat more formal form of the process that JMPR already follows.)
4. The policy presented as Option 4 should be adopted by the Committee to improve the consistency of MRLs for Processed Foods that are extensively consumed and most widely traded internationally, according to the list in Appendix 1. When the required processing data indicate that residues concentrate during processing to a significant extent (150% is suggested), MRLs

should be established for the chemical in the Processed Foods at an appropriate level above that of the RAC, preferably at the same time as for the RAC.

5. When the data show that residues do not change on processing, no MRL should be established for the Processed Food Commodity. The JMPR should clearly note in their report that RAC MRLs are applicable to the Processed Foods derived from that RAC. Existing Codex MRLs for Processed Foods that are at the same level as RAC MRLs should be deleted on Periodic Review to simplify the list (but a note on the application of the MRL to processed foods should be provided).
6. When the data show that residues are diluted or reduced, the JMPR should evaluate whether incorporation of a residue reduction factor is necessary to provide an acceptable dietary risk assessment. If such reduction is necessary from the view of public health, a Processed Food MRL should be established at the reduced residue level, based on the processing factor, to provide a clear standard. If acceptable dietary risk assessment can be shown without the inclusion of residue reduction factors, then no Processed Food MRL is necessary. However, processing factors could be noted as appropriate to provide readily-available information about the effects of processing.
7. When residue data or other information indicate that residues concentrate significantly (>150% is suggested) in Processed Foods from RACs other than those listed in Appendix 1, the Committee should consider whether processing factors are an appropriate means to convey this information. In the example of chili powder, or other spices, where in general it is anticipated that consumption would not give rise to dietary exposure of concern, the extent of concentration may be useful information for monitoring programs and should also be used in the application of the RAC MRL to the processed product.
8. The acceptable level of residue in Processed Foods, from trading standard and public health perspectives, will be the MRL of the RAC from which it is derived on a direct numerical basis, taking into account a processing factor when this has been considered to be applicable, unless a specific higher or lower MRL level is established.
9. The Committee should investigate whether processing factors, included in footnotes to the MRL List or other places, would have status as trading standards. What procedure would be followed to advance them through the Codex process? What impact would their inclusion have on other Codex Committees? Would their inclusion in the JMPR report serve the same purpose?
10. The Committee should determine a list of Processed Foods that are traded internationally and consumed to a significant extent. A tentative list is attached in Appendix 1; these are the processed commodities for which Codex pesticide MRLs have previously been established, with some proposed additions. They are therefore considered to be relevant internationally traded Processed Foods. This list can be used as a starting point for a Circular Letter to governments, asking for confirmation of these foods and addition of any others they see as appropriate. From time to time, the list should be considered for revision.
11. The Committee should decide that processing data are henceforth an obligatory component of the supporting information needed to establish RAC MRLs for the crops listed in Appendix 1, as amended by consideration of the responses to the CL. Without processing data, the indicated RAC MRLs cannot be advanced beyond Step 6. The data must address the impact of processing on residues for the listed Processed Foods from each crop. The Committee should update the list from time to time as appropriate, providing sufficient lead-time so that the data can be available for any added commodities.
12. The Committee's procedure for post-harvest uses of chemicals should be the same as for preharvest cases. Residue data consistent with GAP must be provided for the RACs involved, and processing data are needed if such treated foods could be processed into commodities traded in international commerce and consumed to a significant extent.
13. The Committee should establish a list of important traded processed products for which the use of generic concentration factors might be useful for the application of RAC MRLs to the processed product, and should request the JMPR to establish appropriate generic processing factors.

14. Processing studies are also important for dietary risk assessment even in cases where no MRLs will be set. When processing data are provided, reductions that arise during processing should be taken into consideration during exposure assessments, as they are now. The Committee should ask the JMPR to review and restate their procedure for evaluating the dietary exposure contribution of Processed Food where processing data are not going to be required.

Appendix 1. RACs for which Processing Data are Required to Advance a Proposal for RAC MRL(s)¹

RAC Code	RAC Name	Processed Code	Processed Name
Cereals			
GC 645	Maize	OR 645	Maize oil, Edible
GC 649	Rice	CM 649 CM 650 CM 1205 CM 1206	Rice Husked Rye Bran, Unprocessed Rice Polished Rice Bran, Unprocessed
GC 650	Rye	CF 1250 CF 1251	Rye flour Rye whole meal
GC 654	Wheat	CF 1210 CF 1211 CF 1212 CM 654	Wheat germ Wheat flour Wheat whole meal Wheat Bran, Unprocessed
Fruit			
FB 269	Grapes	DF 269 DF5263	Dried grapes (=currants, raisins, and sultanas) Raisins
FB 1235	Wine Grapes		Wine
FC 1	Citrus fruits	AB 1	Citrus Pulp, Dry
FP 226	Apple	AB 226	Apple Pomace
		DF 226	Apple, dried
FS 14	Plums (incl prunes)	DF 14	Plums, dried (Prunes)
FS 247	Peach	DF 247	Peach, Dried
FT 295	Date	DF 295	Dates, Dried or Dried & Candied
FT 297	Fig	DF 297	Figs, Dried or Dried & Candied
FT 305	Olives	DM 305 OC 305 OR 305	Olives, processed Olive oil, Virgin Olive oil, Refined
Oil Seeds			
SO 495	Rapeseed (canola)	OC 495 OR 495	Rapeseed oil, Crude Rapeseed oil, Edible
SO 691	Cotton seed	OC 691 OR 691	Cotton seed oil, Crude Cotton seed oil, Edible
SO 693	Linseed	OC 693	Linseed oil, Crude
SO 697	Peanut	OC 697 OR 697	Peanut oil, Crude Peanut oil, Edible
SO 702	Sunflower seed	OC 702 OR 702	Sunflower seed oil, Crude Sunflower seed oil, Edible
VD 451	Soya bean	OC 541 OR 541	Soya bean oil, Crude Soya bean oil, Edible
Other			
VR 596	Sugar beet	DM 596	Sugar beet molasses
GS 659	Sugar cane	DM 659	Sugar cane molasses

¹ Reasoned scientific justification for extrapolation of existing chemical-specific processing information among dried fruits and vegetable oils is acceptable.