

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
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JOINT OFFICE: Viale delle Terme di Caracalla 00153 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

Agenda Item 7 (b)

CX/PR 08/40/6  
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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON PESTICIDE RESIDUES

Fortieth Session

Hangzhou, China, 14 - 19 April 2008

#### DISCUSSION PAPER ON THE PROCEDURES FOR SEPARATION OF MILK FAT FROM WHOLE MILK

(Prepared by IAEA)

#### INTRODUCTION

1. The JMPR 2004 stated that methods should be made available for whole milk and milk fat (both with a practical LOQ)<sup>1</sup>. The fat should preferably be separated by physical means, not by chemical solvent extraction, because in solvent extraction residues are extracted from both the aqueous and the lipid phase.
2. The Committee at its 38<sup>th</sup> Session had considered this matter (ALINORM 06/29, paras 183-188) and noted that physical fat separation is not a common practice in milk and milk products residue analysis, and that current practice of analyzing liquid milk products is based on the analysis of the whole product.
3. The Delegation of Australia requested clarification on whether it was necessary to also analyze fat if analysis of whole milk indicated conformity with the MRL. The Delegation of the Netherlands indicated that analysis of whole milk would suffice and analysis of milk fat would be required for milk products such as cream or butter.
4. The Committee agreed to send a Circular Letter asking for information on the current analytical practices concerning the separation of whole milk and milk fat and the methodology for the determination of fat soluble pesticides in milk and milk products.
5. At the 39<sup>th</sup> Session while considering this matter, the Committee noted that in Australia different procedures were used by laboratories for the separation of fat from whole milk, and that in the United States fat was not separated from whole milk for the determination and monitoring of pesticides. As few replies had been received to the Circular Letter, it was proposed to ask for further information on current practices. The Delegation of Australia expressed the view that authoritative guidance on a reliable procedure for the physical separation of milk fat from whole milk was necessary and supported further work in this area.

<sup>1</sup> Pesticide residues in food. 2004. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper 178.

Working documents will be uploaded onto the Codex website:

[www.codexalimentarius.net/web/index\\_en.jsp](http://www.codexalimentarius.net/web/index_en.jsp)

Delegates are kindly requested to bring with them to the meeting all documents which have been distributed, as the number of additional copies which can be made available at the session is limited.

6. The Committee agreed that a Circular Letter would be sent to request information on current practices for the analytical determination of fat-soluble pesticides in milk and milk fat, for further consideration at the next session.

## BACKGROUND

7. Different approaches are used for determining fat-soluble pesticide residues in milk, and analytical results are not expressed unambiguously. In the case of fat-soluble pesticides, MRLs have been established for whole milk and also for milk fat. The JMPR recommends MRLs for milk fat based on the physical separation of milk fat. As the fat solubility of pesticides vary, the extent to which they partition into the fat phase of milk also vary. Consequently, the method of extraction of fat from whole milk affects the analytical result when determining compliance with an MRL for milk fat. See CCPR agenda item 10 (ii) Milk and Milk Fat Maximum Residue Limits (CX/PR 08/40/1 [ftp://ftp.fao.org/codex/ccpr40/pr40\\_11e.pdf](ftp://ftp.fao.org/codex/ccpr40/pr40_11e.pdf)). Information provided in response to circular letters is that fat is usually separated from whole milk by solvent extraction rather than by physical means. It is incorrect to compare results obtained for residues in milk fat obtained by solvent extraction with the Codex MRL for milk fat. The expression of the results in relation to whole milk or to milk fat is not handled uniquely. The non-equivocal expression of the results may lead to problems especially in international trade. This topic should be discussed during the meeting of the Ad Hoc Working Group. The outcome from the Ad Hoc Working Group discussions will help guide discussion concerning the regulatory approach to pesticide residues in milk under CCPR agenda item 10 (ii).

8. Comments were submitted by Australia, Argentina, Canada and the International Dairy Federation (IDF), the latter summarizing current practices in Germany, New Zealand, and The Netherlands. Argentina uses methods for pesticide residues both in whole milk and in the fatty phase obtained by solvent extraction of milk. Canada, Germany, New Zealand and The Netherlands determine pesticides in milk fat obtained by solvent extraction of whole milk. The respective methods referred to were not described in greater detail by the IDF, whereas the contribution of Germany provides detailed analytical procedures.

9. Australia considers the primary concern for CCPR should be how Codex MRLs for whole milk and milk fat are to be interpreted for regulatory and monitoring purposes. Accordingly Australia proposes a solution to ensure a consistent regulatory approach. Particularly authoritative advice regarding an efficient method for the physical separation of milk fat from whole milk should be given since CL 2007/15-PR did not directly address this matter.

## AUSTRALIA'S PROPOSAL

10. The potential regulatory issue mentioned above will not arise if for regulatory (and monitoring) purposes, irrespective of the fat-solubility of a pesticide, whole milk is tested and the result compared with the MRL for whole milk. Australia recommends that CCPR formerly adopt this approach. It could be effectively implemented by adding a suitable note against the MRL for whole milk in all cases where MRLs are established for both whole milk and milk fat. The suggested wording for a suitable note is: ***"for monitoring and regulatory purposes, whole milk is to be analysed and the result compared to the MRL for whole milk"***. This proposal is consistent with, and will serve to emphasise, the Codex Classification of Foods and Animal Feeds that states for milk the portion of the commodity to which the MRL applies and what is analysed is the whole commodity. This proposal is to be discussed under CCPR Agenda Item 10 (ii).

## RECOMMENDATIONS

11. At the upcoming fortieth meeting the CCPR Ad Hoc Working Group should take into consideration the information provided by several parties to further elaborate and recommend unified practices for the determination of pesticide residues in whole milk/ milk fat so that the expression of analytical values will be unequivocally applicable within the Codex system. Advice to be issued essentially should define how to express analytical results based on whole milk or milk fat, respectively.

12. As it can be taken for granted that laboratories apply fully validated methods, it should be left open which analytical procedures are used as long as analytical values given can be interpreted unambiguously referring to whole milk or milk fat.