codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Via delle Terme di Caracalla 00100 ROME: Tel. 5797 Cables Foodagri

ALINORM 78/17

CODEX ALIMENTARIUS COMMISSION
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REPORT OF THE NINTH SESSION OF THE CODEX COMMITTEE ON FATS AND OILS

London, 28 November - 2 December 1977

INTRODUCTION

1. The Codex Committee on Fats and Oils held its Ninth Session in London from 28 November to 2 December 1977 under the chairmanship of Mr. A.W. Hubbard of the United Kingdom. The session was opened by Sir Charles Pereira, Chief Scientist, Ministry of Agriculture, Fisheries and Food, who welcomed the participants on behalf of the Government of the United Kingdom.

2. The session was attended by representatives from 31 countries and observers from 10 international organizations. The list of participants including officers from FAO and WHO and the Committee Secretariat is contained in Appendix I to this Report.

ADOPTION OF THE AGENDA

3. The Chairman introduced the agenda by advising the Committee that the working paper for Item 4, Conference Room Document No. 1, containing Extracts from the Report of the Joint FAO/WHO Expert Consultation on the Rôle of Dietary Fats and Oils in Human Nutrition, had only been tabled that morning and therefore member countries would have had little opportunity to study it in depth. Detailed discussion of the implications of the recommendations of the Expert Consultation would best await the publication of the full report after which the Secretariat would circulate for comments a paper based on observations at the present session on those items of direct interest to the Committee. Government comments would be sought and the matter discussed at the next (10th) session of this Committee.

4. As some of the participants in the Joint FAO/WHO Expert Consultation on the Rôle of Dietary Fats and Oils in Human Nutrition were present also at this session of the Codex Committee on Fats and Oils, delegates would have the opportunity to ask them questions under Agenda Item 4. Other discussion on the implications of the Expert Consultation's recommendations could be accommodated at the relevant Agenda Items.

5. Time for discussion of the possible draft standard for marine oils had not been put on the Agenda but as many member countries had sent delegates with a particular interest in marine oils, discussion would be allowed at Agenda Item 12 (Other Business).

6. The delegation of United States stated that they had distributed to each delegation copies of a proposed graphical method for the identification of commercial oils and fats by GLC. Whilst this was to be discussed at Agenda Item 9a, the delegation of the United States suggested that a brief verbal introduction to the method might be useful to the Committee and requested that time be made available for this purpose when convenient to the Chair. It was agreed that a verbal introduction could be made after luncheon on the first day of the session. The Committee adopted the Provisional Agenda (CX/FO 77/1) with the above minor amendments.

MATTERS OF INTEREST ARISING FROM THE 11TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES

Acceptances of Step 9 Standards

7. The Committee was informed that in the period of time between this session of the Committee and the previous one Egypt had accepted with specified deviations all Step 9 Standards for edible vegetable oils except those for rapeseed and mustardseed oil. Canada had accepted all Step 9 Standards for edible vegetable oils except those for rapeseed, mustardseed, sesameseed and olive oil, and the General Standard for Oils and Fats. The state of acceptance of all Codex Standards at Step 9 had been compilated as of March 1977 and had been issued to Codex Contact Points recently (CAC/Acceptances).

Codex Alimentarius Commission (11th Session - ALINORM 76/44)

8. It was reported that the Commission had endorsed an amendment to the Procedural Manual to facilitate adopting editorial or substantive amendments consequential to provisions in similar standards already at Step 9 by adoption at Steps 5 or 8 as appropriate. This had facilitated the inclusion of scope sections to the Codex Standard for Vegetable Oils at Step 9 (paras 101 and 371(b)).

9. The Committee noted that the Commission has asked that the attention of Commodity Committees be drawn to the need to define the exact meaning of food additive provisions (para 118).

10. It was reported that the Commission had endorsed the carry-over principle elaborated by the Codex Committee on Food Additives and contained in Appendix IV to ALINORM 76/12 (para 121).

11. Concerning the inclusion of contaminant provisions, the Commission had underlined the need for such provisions and had instructed Commodity Committees to provide information on levels of contaminants in products for which standards were being developed (para 123).

12. The Committee was informed of Maximum Limits for Pesticide Residues relevant to Codex Standards for Fats and Oils which were included in the Fourth and Fifth Series of the Recommended International Maximum Limits for Pesticide Residues (CAC/RS 65-1974 and CAC/RS 71-1976).

13. The Commission had advanced the Proposed Draft Standards for Low Fat Spreads and for Low Erucic Acid Rapeseed Oil to Step 6 of the Procedure. It also had approved the circulation at Step 3 of the Amendment Procedure for Step 9 Standards of the revised version of the General Standard for Fats and Oils not covered by individual standards on its scope being changed to cover both fats and oils for direct consumption and for use as ingredients in other foodstuffs (paras 367-371).

14. The Commission had adopted the proposed procedure for the determination of moisture content in margarine at Step 8, subject to the endorsement by the Codex Committee on Methods of Analysis and Sampling (see also para 84).

Codex Committee on Food Additives (11th Session - ALINORM 78/12)

15. The Committee had endorsed the additive provisions in the Proposed Draft Standards for Vegetable Oils now at Step 5 (Appendices VI to X to this Report) and for Low Erucic Acid Rapeseed Oil, and sought further information on those in the Draft Standard for Low Fat Spreads. The Committee had further endorsed the provisions for arsenic, copper and iron and temporarily endorsed the provision for lead in the above mentioned standards (paras 57-62 and Appendices IIIand IV).

Codex Committee on Food Labelling (12th Session - ALINORM 78/22)

16. The Committee had endorsed the labelling provisions of the Draft Standard for Low Erucic Acid Rapeseed Oil (para 55).

17. Guidelines on Date Marking and Claims had been finalized for approval by the 12th Session of the Commission (para 37 and Appendices II and III).

18. The Committee had decided that the Codex Committee on Fats and Oils should consider declarations of fat content, percentage of poly-unsaturated fatty acids, date marking, lot identification and exemptions from labelling requirements for small units in relation to Low Fat Spreads (paras 53, 54).

Codex Committee on Food Hygiene (13th Session - ALINORM 78/13)

19. The Committee had endorsed the hygiene provisions in the Draft Standards for Low Fat Spreads and for Low Erucic Acid Rapeseed Oil (para 27).

Codex Committee on Methods of Analysis and Sampling (10th Session - ALINORM 78/23)

20. The Committee had discussed and proposed ways and means of dealing with methods of analysis which would eventually lead to revised requirements and criteria.

REPORT OF THE JOINT FAO/WHO EXPERT CONSULTATION ON THE ROLE OF FATS AND OILS IN HUMAN NUTRITION

21. The Committee had before it Conference Room Document No. 1 containing extracts from the above Report. The representative of WHO introduced the item by recalling that at the 8th Session of this Committee a summary of the effects of feeding rapeseed oil containing high levels of erucic acid to various species of animals had been given (ALINORM 76/19, para 4). During the 8th Session it became apparent that because of the work that was being undertaken information on the following matters was required:

(i) the health implications of erucic acid and other components of rapeseed oil;
(ii) the labelling of the poly-unsaturated fatty acid content of low fat spreads.

Also at the 8th Session the Committee had been advised that an ad hoc group of experts would be convened by FAO and WHO to consider these and other matters. A Joint FAO/WHO Expert Consultation on the Rôle of Dietary Fats and Oils in Human Nutrition had met in September and Conference Room Document No. 1 dealt with the matters of interest to this Committee. The representative of WHO continued that it was not easy for the Expert Consultation to come to an agreement on the specific wording of the conclusions which were reached.

22. Concerning the health implications of Brassica derived Oils the representative of WHO paraphrased what he considered to be the major conclusions:

(i) short-term intake by several animal species of Brassica oils with high erucic acid causes transient diffuse myocardial lipidosis. The accumulation of triglycerides in the heart is directly proportional to the amount of erucic acid in the diet;
(ii) long-term intake by the rat of Brassica oils with high erucic acid induces focal necrotic lesions leading to fibrotic changes in the heart muscle;
(iii) studies in the rat on Brassica oils low in erucic acid show that they permit growth to the same extent as do other fats and oils;
(iv) long-term feeding of Brassica oils low in erucic acid has in some, but not all laboratories, been reported to increase necrotic lesions in the myocardium above background levels, but the severity was less than found with high erucic acid rapeseed oil;
(v) a controversy still exists as to whether the long-term lesions caused by Brassica oils low in erucic acid are due to the erucic acid which is still present or to some other factor;
(vi) it would therefore seem prudent for populations in which fat constitutes a high proportion of dietary energy to reduce the erucic acid in Brassica oils and/or blend Brassica oils with other fats and oils. This may be of special importance in the case of children.

On the topic of the health implications of long chain fatty acids in marine oils, the representative of WHO commented that:

(a) continuous feeding to experimental animals receiving a high fat diet, of partially hydrogenated marine oils containing high proportions of docosenoic acid induces cardiac lipidosis;

(b) no harmful effect has been attributed to the intake of unprocessed marine lipids by man;

(c) however, the Consultation concluded that it would be prudent for populations in which fat constitutes a high proportion of dietary energy to recommend the blending of partially hydrogenated marine oils with other fats and oils.

23. With regard to labelling, the Consultation recommended that food products contributing significantly to total fat intake, be labelled to indicate the content of total fat and percentages of saturated, cis- mono-unsaturated, trans- and all cis- poly-unsaturated fatty acids in the fat. Cholesterol content should be given as mg per 100 g of the product.

24. In inviting questions or observations from the floor the Chairman reminded the Committee that no firm decisions could be expected. Canada was concerned that paragraph (b) to the background section of Conference Room Document No. 1 did not reflect accurately the discussions of the 8th Session reported in ALINORM 76/19, paras 56-58. The attention of the chair was drawn to the Canadian view that no evidence was presented at the Expert Consultation that rapeseed oil affected humans adversely.

25. The observer from the International Association of Fishmeal Manufacturers (IAFMM) welcomed the Report on the health implications of long chain fatty acids in marine oils in pages 13-15 of Conference Room Document No. 1 as being a carefully balanced statement on the subject. However, he believed that recommendation 10 on partially hydrogenated marine oils (on page 21 of that document) did not present a complete picture of the considerations of the Report. He also questioned why particular mention had been made of "children" in recommendations 9 and 10 but discussion had not been given in the body of the report to the particular importance of children. The representative of WHO pointed out that a general recommendation on page 16 of Conference Room Document No.1 concerned this point. Explaining the justification of special mention of children in recommendations, participants in the Joint FAO/WHO Expert Consultation commented that this statement came from considerations concerning nutrition of the young by the Consultation and was mainly concerned with the rôle of essential fatty acids and a feeling that possible nutritional problems would be more severe during growth.

26. The observer from IAFMM also asked for confirmation that the animal experiments referred to in recommendation 10 meant the transient cardiac lipidosis found in the rat. It was understood from a member of the Expert Consultation present that this was so; the Expert Consultation did look at data from other species but did not extrapolate the results to man.

27. The Committee limited itself to taking note of the recommendations of the Joint FAO/WHO Expert Consultation and the explanations given by the WHO representative and those experts present who had participated. It was agreed that the Secretariat would circulate to governments a paper for comments as outlined in paragraph 3 of this Report.

REVISION OF THE GENERAL STANDARD FOR EDIBLE FATS AND OILS NOT COVERED BY INDIVIDUAL STANDARDS AT STEP 4

28. The Committee considered the revised version of the above General Standard which had been circulated to governments as Appendix IV of the Report of the 8th Session (ALINORM 76/19), taking account of comments received (CX/FO 77/2).

29. Discussion of the Scope Section was linked with general consideration of the additive provisions, because although it had been agreed at the last session that the Standard should cover products for direct consumption, and those going to form part of manufactured products as ingredients, there had been no final decision as to what additive provisions were required to take account of the new situation. The particular problem was the question of emulsifiers being added to fats and oils which it might be argued had altered the fat or oil to a new kind of product. The delegation of the United States stated that they would have difficulties in their country if emulsifiers were not allowed, because they considered the resultant products still to be fats and oils. The delegation of the United Kingdom suggested that the answer to the problem was not to prohibit the use of additives, other than those provided in the Standard, but to require their declaration in the name of the product, rather

than to attempt to list additional additives such as emulsifiers in the additive section of the Standard. This view led the Committee to consider whether, even though it had been agreed at the last session, to expand the scope to cover oils and fats as such and those which include additives to enable them to be used for special purposes, such a decision was still acceptable. The delegation of Switzerland suggested that the scope should only cover fats and oils for direct consumption, but if a fat or oil was used as an ingredient in a compound food the additional additives permitted by the end product specification of that food should be listed in the accompanying documents to the manufacturer of such a food. The delegation of the United Kingdom together with the delegations of the Netherlands, Greece, Sweden, the Federal Republic of Germany and Ireland were in agreement to limiting the scope to cover oils and fats as such with possible allowance for labelling declaration of specialized additives. The more restricted scope was accepted by the Committee, although the delegation of the United States expressed their reservations about the solution.

30. At the suggestion of the Secretariat the wording of the scope section was amended editorially without altering its substance.

Description

31. The suggestion that the general description (Section 2.1) should be amended to refer to "tri-glycerides" was discussed in some depth. However, as several delegates pointed out, problems could be created in relation to the references to "other lipids" i.e. mono- and di-glycerides would need to be included. It was finally decided to leave the reference as "glycerides" and to amend the rest of the section by transposing the last two sentences with a minor editorial modification.

32. In discussing the description of virgin fats and oils (section 2.2) it was agreed that these were only of vegetable origin and should be so described. In addition, the delegation of the Netherlands suggested that the "heat" reference needed qualifying to "moderate heat" to limit the severity of this treatment and the delegation of Spain suggested a further improvement by amending to read "adequate thermal conditions". The Committee decided that whilst there was merit in both suggestions they could lead to further difficulties. It was agreed that the reference to heat treatment should not be modified.

33. The Chairman pointed out that this Section would, in fact, be included in the Secretariat paper to be prepared on the implications of the Expert Consultation's findings and recommendations as one specifically referred to thermal treatments and processing (see para 3).

Food Additives

34. Concerning the additives included in Section 4, the representative of FAO reported that the status of endorsement of certain items had been changed (ALINORM 76/12, Appendix II). BHA, BHT and propyl, octyl and dodecyl gallates and the mixtures of any or all of the above were now "temporarily endorsed" (previously "endorsed") and phosphoric acid, dimethyl polysiloxane and oxystearin were now "endorsed" (previously "temporarily endorsed").

35. The delegation of Switzerland, supported by the Netherlands and Belgium, considered that the anti-foaming agent should only be allowed in an oil labelled "for deep-frying". The delegation of France agreed with the written comment of India that the anti-foaming agent should not be allowed. In addition, the delegations of Switzerland and France, supported the written comment of India that the crystallization inhibitor should not be allowed. The delegation of the United States pointed out that both of the above additives were included in the additive provisions of all individual oil standards and should, therefore, remain in the General Standard. The Committee agreed with this view. The delegation of the Netherlands restated their reservation. The delegation of the Federal Republic of Germany was opposed to the long list of additives included at present considering that only beta-carotene, natural and synthetic tocopherols, ascorbyl palmitate and citric acid and its sodium salt should be allowed.

36. The delegation of the United States requested that two extra additives be included - the antioxidant TBHQ (tertiary butylhydroquinone) at a maximum level of 200 mg/kg and the crystallization inhibitor polyglycerol esters of fatty acids at a maximum level of 2 000 mg/kg. The delegation of Australia supported the inclusion of TBHQ. The Committee requested that TBHQ be assessed by the Codex Committee on Food Additives and agreed, subject to this assessment, that TBHQ be included in the list of additives. The delegations of Switzerland and the United Kingdom were not convinced of the need or technological justification of polyglycerol esters of fatty acids as a crystallization inhibitor and it was agreed that the delegation of the United States would supply more information on this before it was included in the additive section. The delegation of Belgium was of the opinion that when any new additives were recommended for inclusion, information on need and technological justification should be provided.

37. The delegation of the Federal Republic of Germany expressed doubts as to what was included in "other synthetic flavours" in the flavours section; the inclusion of artificial flavours would be unacceptable. The representative of FAO commented that a sub-group of the Codex Committee on Food Additives was at present considering generally the matter of flavouring provisions and that this matter was best left until the sub-group had completed its discussions.

Emulsifiers

38. The Committee agreed that this section be deleted in view of the revised scope of the draft (see para 29).

Contaminants

39. The written comment from Poland (CX/FO 77/2, para 6), concerning the necessity of setting maximum residue levels of catalysts used in hydrogenation, received support from the delegations of Egypt, France, Switzerland and Sweden but this provision was thought unnecessary by the delegation of the United States. As hydrogenation catalysts are but one of a group of processing aids, the delegations of Sweden, Switzerland and Finland were of the opinion that maxima for all processing aids should be included. The Chairman pointed out that this was in accord with a request from the Codex Committee on Food Additives (ALINORM 78/12, para 123) that Commodity Committees elaborate provisions for processing aids in all commodity standards. The Committee agreed that this should be the subject of a Circular Letter to governments requesting comments on the need and number of processing aids required by the Committee on Fats and Oils that would be issued after the Twelfth Session of the Commission had discussed the request for information and definition of processing aids made by the Codex Committee on Food Additives. It was decided that the comments from governments should also be requested as to whether any processing aid provisions, if adopted, should appear in the food additives section or contaminants section of standards bearing in mind the definition of contaminants in the Procedural Manual and that for processing aids as discussed and proposed by the Codex Committee on Food Additives (ALINORM 78/12, paras 120-124).

40. With regard to the maximum level of iron (6.4) and copper (6.5), the delegation of Sweden was of the opinion that the maxima for non-virgin oils should be reduced to 0.1 mg/kg (from 1.5 mg/kg) and 0.01 mg/kg (from 0.1 mg/kg) respectively. The Committee, however, made no change in these provisions.

Hygiene

41. On a question from the delegation of Ireland concerning the necessity for the reference to the health of animals at the time of slaughter (see Section 2.1 - Descriptions), the representative of FAO quoted the Recommended International Code of Hygienic Practice for Processed Meat Products (CAC/RCP 13-1976) which in itself contained reference to other relevant codes. The delegation of Norway supported by the United States considered that these hygiene provisions at present incorporated in the description of edible fats and oils should instead be included in the hygiene section and further that reference to "a competent authority recognized in national legislation" should be replaced by one to the Recommended International Code of Hygienic Practice for Processed Meat Products. For ease of reference, the delegation of the United States considered that the exact reference as to where this Code could be found should be included. The Committee agreed to leave Section 2.1 unchanged but to attract attention to the Recommended International Code of Hygienic Practice for Processed Meat Products in Section 6 - Hygiene.

Inclusion of an Erucic Acid Level Limitation

42. Speaking generally for the European Economic Community (EEC) their observer drew the Committee's attention to the fact that the EEC had a Legal Directive limiting the maximum level of erucic acid in oils and fats intended as such for human consumption, and in foodstuffs containing added oils and fats. He suggested that the Codex General Standard for Fats and Oils not covered by individual standards should include a similar provision with a level limitation of 5%.

43. There was general discussion of the suggestion from the delegation of Canada, supported by Sweden, that total docosenoic acids, rather than specifically erucic acid, should be prescribed. The delegation of the United Kingdom in amplification of the EEC observer's remarks drew the Committee's attention to the fact that the EEC Directive related to direct consumption products only, and did not prevent oils and fats being circulated in trade for other purposes or being mixed. The delegation of the United Kingdom suggested that it might be wiser to postpone a definite decision and the proposal for the time being. The delegation of the United States supported the United Kingdom and felt that there were a number of problems that needed to be considered and therefore it would be premature to make a definite decision at this stage.

44. The FAO representative drew the Committee's attention to the fact that development of regulations covering limited geographical areas, had and could cause problems if related to the whole world, because of the widely different dietary patterns concerning fats and oils. It was important therefore to take a very cautious approach to standard requirements which might directly or indirectly be based on the nutritional status of a limited population. The representative felt therefore that it would not be in the interests of consumers at large to include the EEC observer's suggested addition to the standard, without further consideration of differing dietary habits. He thought this matter might have to be left to national or regional prescriptions as was the case with vitamins and other nutrients.

45. It was decided that this matter would form part of the paper that would be circulated about the implications for the Committee's work of the findings and recommendations of the Expert Consultation. Countries would be specifically asked to comment on the proposal (see para 3).

Labelling

46. Conference Room Document No. 2 (considered at Agenda Item 3) contained guidelines for date marking of prepackaged foods as drafted by the Codex Committee on Labelling. The delegations of the Federal Republic of Germany, Australia, Switzerland, the Netherlands, New Zealand and Senegal were all in favour of including in the standard a provision for "minimum durability". The delegation of Sweden supported this as long as suitable storage instructions were also displayed.

47. The delegation of Norway questioned whether, as the Committee was considering the General Standard which also encompassed movements of oils in bulk, date marking was a suitable provision to be included.

48. The delegation of the Federal Republic of Germany considered lot identification relevant to this standard and was supported in this by Australia, Switzerland, Sweden, the Netherlands and New Zealand.

49. The Committee decided to include provisions for both date marking (minimum durability) including, where necessary, the requirement for suitable storage instructions, and lot identification. The delegation of Switzerland was of the opinion that similar provisions should be added to all standards elaborated by the Committee on Fats and Oils, not solely the General Standard. The Committee concurred with this view and requested the Codex Secretariat to arrange for these amendments to be incorporated in the Step 9 Standards.

50. There was considerable discussion on the wording of Section 7.1.1 (Name of the Food) in the revised General Standard. The delegations of the United States, Sweden, Belgium and France considered that oil or fat from a single source should be designated by that source name and that oil and/or fat mixtures may be designated for example "edible oil" and "salad oil" unqualified as long as the complete list of oils and/or fats comprising the mixture appeared in the list of ingredients (7.2.1). The delegation of Egypt emphasized the importance and necessity of having the complete list of oils on a label indicating the specific types of fats and oils used in the product.

51. Further debate included opinions from the delegation of Spain who considered that the percentage of each constituent oil or fat in a mixture should be shown when it could be proven analytically; the delegation of Italy suggested that the content of linoleic acid in the mixture be given. The delegation of Ireland foresaw difficulties in proving or checking the validity of an oil designated as being from a single source. The delegation of Sweden commented that for oil or fat mixtures the fat content of the product should be declared in g per 100 g and the average content of both saturated fatty acids and linoleic acid should be declared as a percentage of the total fatty acids. The delegation of the Netherlands, on the other hand, favoured the use of the generic terms "vegetable" and "animal" to describe oils and fats and considered that individual oils and fats in a mixture need not be declared but if reference is made to the presence of any one oil or fat then that oil or fat should be present in an amount of at least 20% and that all other oils and fats in the nixture should be declared in descending order of proportion.

52. It was finally agreed that Section 7.1.1 should remain unchanged, the only amendment being the addition of the words "in the case of mixtures..." at the beginning of the second sentence. It was also agreed to make no change in the provision for a complete listing of ingredients. Class names would be permitted only for food additives. The delegation of the Netherlands restated that in their opinion it would be misleading to the consumer to declare an oil in the list of ingredients if only present in a low amount (e.g. below 20%) without declaring its percentage.

Status of the Standard.

53. On the proposal of the delegations of the United States, Canada and Switzerland the Committee agreed to advance the revised version of the General Standard for Fats and Oils not covered by individual standards to Step 5. The above Standard is contained in Appendix II to this Report.

CONSIDERATION OF THE DRAFT STANDARD FOR LOW FAT SPREADS AT STEP 7

54. The Committee had before it the above draft standard as contained in Appendix IV of ALINORM 76/19 and comments received as set out in documents CX/FO 77/3 and CX/FO 77/3-Add.1. The Chairman introduced this item by drawing the Committee's attention to the multiplicity of fat spreads being and likely to be marketed with varying compositions. He also drew attention to products based on milk fat and those where the fat content was a combination of both milk and vegetable fats. In this rapidly developing situation since the last meeting, he asked whether the Committee considered there should be a change in the scope of the standard to cover all the different types of similar products.

55. The delegation of the United Kingdom pointed out that there might be some problems within the Codex as to what Committee should deal with the various spreads. It was thought, however, that the terms of reference made it clear that this Committee should deal with vegetable fat based products and the Committee on Milk and Milk Products should theoretically deal with milk fat based products. The Chairman suggested that the Standard, in view of the agreement to its being drafted in line with that for margarine, should only cover products in which the fat content was "not mainly derived" from milk. The delegation of the United States felt that this Committee should deal with all margarine-type and other mixtures only excluding those solely derived from milk fat. The delegation of the United Kingdom preferred to refer to products mainly derived from milk fat. The delegation of the United States also reminded the Committee that a similar problem arose at the last session of the Committee on Milk and Milk Products when imitation milk products were considered and it was left that the Commission would decide whether those should come within its terms of reference.

56. It was agreed that also in this case the Commission should be asked to decide under whose terms of reference the products in doubt should come, and that in the meantime the Committee would solely deal with the margarine-type products as defined in the Product Definition of the Draft Standard.

Name and Description

57. There was considerable discussion about the name and nature of the product. The delegation of Yugoslavia and others proposed that a very simple name be coined that would easily identify the product. This was particularly relevant for the Netherlands, France, Belgium and Greece because of difficulties in translating "Spread" into their respective languages. There was a multiplicity of suggestions related to the nature of the product. The delegation of Japan pointed out that they considered this type of product to be a dietary food, suggesting it being named as a low calorie fat spread, a proposal with which the delegation of Canada had some sympathy. It was also suggested that the fat content range should be expanded to cover more products. Although it was tentatively agreed at one stage that the product should be entitled "Minarine (containing X% fat)", this did not prove entirely acceptable particularly to the delegation of the Federal Republic of Germany. The Committee decided that the title of the Standard should be provisionally changed to "Reduced Fat Margarine", and that the text and labelling provisions of the Standard should be changed on the following basis:

(a) The name "Minarine" should be reserved exclusively to products with a fat content range of 39-41%.
(b) That an alternative name to "Minarine" could be used for products with a fat content range of 39-41% in accordance with the law of the country or countries in which the product was sold, in a manner so as not to mislead the consumer.
(c) All other products with fat contents other than 39-41% should be marketed as "Reduced Fat Margarine" with a statement of the percentage (%) fat content.

58. The delegations of Ireland, Belgium and Switzerland could not entirely agree with the proposal because they objected to the use of the word "margarine" even when qualified by "Reduced Fat" as this would be in conflict with both national legislation and the Codex Standard for Margarine. The Chairman noted that if the name Reduced Fat Margarine was adopted for this standard consequential amendments would be required in the Standard for Margarine.

Methods of Analysis

59. It was agreed that the methods of analysis as in the Codex Standard for Margarine (CAC/RS 32-1969) should be included.

Colours and antioxidant synergist

60. It was noted that the Codex Committee on Food Additives had asked this Committee to consider and advise upon the maximum levels for certain additives (ALINORM 78/12, paras 57-61). It was agreed that the Committee on Food Additives should be advised of the maximum levels as follows:

Colours

Beta carotenes	25 mg/kg
Bixin, norbixin or annatto extracts singly or in combination) ..	20 mg/kg (calculated as total bixin or norbixin)
Turmeric or curcumin	5 mg/kg (calculated as total curcumin)

Antioxidant Synergist

Calcium disodium salt of EDTA	100 mg/kg

The use of carotenes was limited to beta-carotene because it was the only substance for which an ADI had been established and the others were not generally needed for the product. As pointed out by the delegation of Switzerland all maximum levels should be calculated on the pure substance as the active principle.

Status of the Standard for Reduced Fat Margarine

61. In view of fundamental changes that had been made in the draft it was decided that the Standard should be retained at Step 6 of the Procedure, and be circulated for comment and consideration at the next session. The revised Draft Standard is contained in Appendix III to this Report.

CONSIDERATION OF THE DRAFT STANDARD FOR LOW ERUCIC ACID RAPESEED OIL AT STEP 7

62. The Committee had before it the above Draft Standard as contained in Appendix XIII to ALINORM 76/19 and document CX/FO 77/4 containing government comments. In introducing this item, the Chairman read to the Committee the Scope Section which, it had been agreed by the 8th Session (and subsequently adopted by the Commission at its 11th Session), should be added to the vegetable oil standard already developed and being elaborated by the Committee (see ALINORM 76/19, para 11). The delegation of Switzerland was concerned that specific reference to "direct consumption" should be made in this particular standard and it was agreed that in this instance the Scope Section would read:

> "This Standard applies to edible low erucic acid rapeseed oil for direct consumption but does not apply to ...." etc.

The delegation of Canada expressed a strong reservation on the inclusion of reference to "direct consumption" because if this qualification was applied to the Scope Section of one oil, it should apply to the Scope Section of all Standards for Oils.

63. The Committee decided that further elaboration of the draft Standard should be undertaken although some doubts were expressed by the delegations of Japan, Norway and Switzerland. The representative of WHO, in answer to the delegation of Egypt who wished to know the latest WHO position concerning the health aspects of rapeseed oils quoted the relevant recommendation of the Joint FAO/WHO Expert Consultation on the Rôle of Dietary Fats and Oils in Human Nutrition (see Conference Room Document No. 1, page 21, item 9).

64. From the written comments received the Chairman suggested that, on the question of an appropriate maximum level of erucic acid for this standard, 5% appeared acceptable. No delegation was opposed to this and the delegations of New Zealand, the Federal Republic of Germany, Sweden, Denmark, Switzerland and Canada specifically voiced support for this level. A 5% maximum level of erucic acid was, therefore, adopted by the Committee.

65. The observer of IUPAC reported to the Committee on the question of a suitable method of analysis for erucic acid which had been referred to an ad hoc working party convened by the delegation of the United States after the 8th Session of this Committee (ALINORM 76/19, para 36). He stated that IUPAC methods II.D.19 and II.D.25 (under consideration by this Committee for establishing guideline fatty acid compositions in standards for fats and oils) were suitable for quantifying erucic acid in rapeseed oils. He pointed out, however, that this would probably not be the case for mixtures of rapeseed and other (particularly hydrogenated marine) oils. The delegation of the United States confirmed the above report.

66. The Chairman pointed out that in establishing a 5% maximum level for erucic acid other identity characteristics and guideline fatty acid composition could be established. The delegation of Canada undertook this task and prepared values for identity characteristics which have been included in the Draft Standard.

67. Concerning the appropriate level of brassicasterol (as a percentage of total sterols) which should be included as an identity characteristic in the standard, several delegations presented ranges which, in their experience, were typically found. It was pointed out by the observer of IUPAC that only a minimum level was required to render brassicasterol an identity characteristic in this standard. This view was accepted by the Committee and it was decided that a requirement for "not less than 5%" brassicasterol be included in the standard.

68. The delegation of Australia proposed that the antioxidant TBHQ (tertiary butylhydroquinone) be included in the standard. The Committee agreed to this.

69. The delegation of Canada proposed that because low erucic acid rapeseed oil was derived from markedly different cultivars a new name for an essentially new type of oil would be appropriate. This proposal found no favour with the Committee. It was further decided that the "coined or fanciful" synonyms for low-erucic acid rapeseed oil in Section 1 of the draft (Description) should be deleted.

70. It was realized that with the establishment of a separate standard for low erucic acid rapeseed oil certain provisions in the Codex Standard for Rapeseed Oil (CAC/RS 24-1969) might need review. The Committee agreed to consider this at a future session.

Status of the Standard for Low Erucic Acid Rapeseed Oil

71. Advancement of the standard was deferred pending consideration of the report from Canada concerning identity characteristics. The Draft Standard as revised by the 9th Session was retained at Step 6 and is contained in Appendix IV to this Report.

CONSIDERATION OF METHODS OF ANALYSIS FOR THE CODEX STANDARD FOR OLIVE OILS (CAC/RS 33-1970)

72. The Committee had before it working paper CX/FO 77/5 containing the present state of development of the proposed methods of analysis for (a) tocopherols, (b) fatty acids at position-2 in the triglycerides and (c) sterols. There was some discussion of various methods that had recently been developed for the determination of total tocopherols and individual tocopherols. The observers of the IOOC, IUPAC and EEC and the delegations from Italy and Spain briefly explained the benefits and shortcomings of the various methods after which the observer of the IOOC agreed that in consultation with the EEC he would attempt to present the next session of the Committee with a single acceptable method.

Fatty Acids at Position-2 /IUPAC II.D.27/ and Sterols /IUPAC II.C.8/

73. At the 8th Session of the Committee it had been decided that the numerous comments received on these methods should be forwarded to IUPAC for consideration. This had been done. Although no published texts had been received from IUPAC for the Committee's consideration it was agreed to refer these, when available, to the Codex Committee on Methods of Analysis and Sampling.

74. In discussing what levels could be included in the Standard for Olive Oil for fatty acids at position-2 and sterols, the Committee agreed that values of "not more than 2% palmitic acid" and "not less than 93% beta-sitosterol" respectively should be circulated for comments. The delegation of Spain expressed reservation about these limits. It was pointed out by the delegation of Greece that the limit for beta-sitosterol was highly sensitive to the packing material used in the GLC column, more polar packing materials being able to resolve Δ 5 avenasterol from the beta-sitosterol peak. The delegation of Greece considered that, scientifically, this was a more satisfactory situation. The delegation of Greece also suggested that storage and certain refining processes employed for olive oil could also influence the glyceride structure thus making a position-2 fatty acid provision premature until further studies into this phenomenon had been undertaken. The observer of IUPAC agreed that this effect could be caused by both steam refining and re-esterification - oils processed by the former technique allowed by the Standard and by the latter technique not. The Committee decided to accept the IUPAC offer assisted by Italy, IOOC and the EEC to re-examine the methods in the light of comments and the final methods would be referred directly to the Codex Committee on Methods of Analysis and Sampling for endorsement.

IDENTITY CHARACTERISTICS BASED ON GLC RANGES

USA Proposed Method for use of GLC Fatty Acid Ranges as Identity Criteria

75. The Committee had before it working document CX/FO 77/6 and Conference Room Document No. 4. At the 8th Session of the Committee it had been agreed that fatty acid compositions be sent to the United States for testing by the method for authenticating commercial fats and oils based on their fatty acid composition discussed at that session. The delegation of the United States reported that they had tested 275 samples and that by using a new graphical method that had been developed, they had been able to correctly identify 269. A representative of the delegation of the United States (Dr Tallent) demonstrated and explained the method to the Committee with the aid of Conference Room Document No. 4. It was decided that the United States should prepare a revised paper on their method which would be circulated for comment and detailed consideration. It was also decided that in view of improved techniques and other improvements it might be the right time for the Committee to consider whether GLC identification should be a mandatory identity criterion in standards. Comments would be asked for in circulating the paper prepared by the United States so that this question could be discussed at the next meeting. The Committee joined with the Danish delegation in expressing their thanks to the delegation of the United States for the excellent work they had done.

Methods of Analysis

76. It was agreed that IUPAC methods II.D.19 (preparation of fatty acid methyl esters) and II.D.25 (gas liquid chromatography of fatty acid methyl esters) should be referred to the Codex Committee on Methods of Analysis and Sampling when the published texts were available.

CONSIDERATION OF THE PROPOSED DRAFT STANDARDS FOR COCONUT, RED PALM AND BLEACHED PALM, PALM KERNEL, GRAPESEED AND BABASSU OILS AT STEP 4

77. The Committee had before it the above Proposed Draft Standards as contained in ALINORM 76/19, Appendices VI to X and working paper CX/FO 77/7 containing government comments on those standards. The delegation of Italy had distributed at the meeting an additional paper (see Appendix V to this Report) showing typical ranges of sterols found in some vegetable oils. In written comments, Italy had proposed that sterol ranges should be introduced into all vegetable oil standards, as another check on the authenticity when fatty acid or other identity characteristics were unable to uniquely identify an oil. There was some support for this and it was decided that the interest shown warranted serious discussion at the next session of this Committee.

78. Because of the action taken during discussion of the method for the use of GLC fatty acid ranges as identity characteristics (see para 75) proposed by the United States it was agreed that it would be important to circulate quickly, for comment, the fatty acid compositions of the five vegetable oils considered here. It was agreed that the best way to achieve this would be to circulate these data together with the paper to be prepared by the United States.

79. The Proposed Draft Standards were considered in detail. The changes agreed by the Committee are shown in the revised drafts at Appendices VI to X to this Report. It was agreed to note that the need for Reichert and Polenske values (3.1.6 and 3.1.7 in the drafts for coconut, palm kernel and babassu oils) would be reconsidered if and when fatty acid composition provisions became mandatory. It was also agreed that the draft for edible red palm oil and edible bleached palm oil should be retitled "Edible Palm Oil" and that the description section should be phrased so as to include both red and bleached palm oils.

80. The Committee noted that the temperature at which determinations of relative density were quoted in these standards (with the exception of grapeseed oil) was not that appearing in other Codex Standards for fats and oils at Step 9 ($40^{\circ}C/20^{\circ}C$ or $20^{\circ}C/20^{\circ}C$). Information from governments would be requested for values of relative density at the usual temperature of determination and in the meantime this provision would exhibit square brackets in the revised drafts.

81. The delegations of the Federal Republic of Germany and Switzerland suggested that the amended Scope Section as agreed earlier for the draft Low Erucic Rapeseed Oil Standard (restricting the scope to oils "for direct consumption" only: see para 62) was applicable to the five oils considered here. The Committee did not agree with this suggestion.

Status of the Standards for:
- Edible Coconut Oil
- Edible Palm Oil
- Edible Palm Kernel Oil
- Edible Grapeseed Oil
- Edible Babassu Oil

82. The Committee decided to advance the above standards to Step 5.

AMENDMENTS TO METHODS OF ANALYSIS INCLUDED IN STEP 9 STANDARDS

83. The Committee had before it a paper prepared by the Secretariat indicating the changes in references of methods of analysis included in Step 9 Standards that had been developed by the Committee (CX/FO 77/8). It was recognized that both methods and references had been changed since the standards for fats and oils were developed, and that there was a need for a complete review of the situation. It was agreed that the Secretariat should consult with the organizations responsible for developing methods of analysis (EEC, AOAC, AOSC and IUPAC), and prepare a paper for circulation, to enable the Committee to consider the matter and decide the action necessary at its next session.

84. The FAO representative reported that the Codex Committee on Methods of Analysis and Sampling had now endorsed with one amendment (ALINORM 78/23, para 74) the proposed procedure for the determination of the moisture content in margarine which would be issued as an amendment to the Codex Standard for Margarine (CAC/RS 32-1969).

OTHER BUSINESS

Marine Oils

85. The delegation of Canada reported to the Committee the results of its coordination of preliminary work in relation to a possible standard for these products (ALINORM 76/19, para 58). In fact there had been very little response and the delegation of Canada had received insufficient material to take the matter further. The delegation of Canada also reported that the marine oil traders felt that there was no need for a standard.

86. The Committee discussed the question of developing a standard for marine oils. Based on the fact that marine oils are not yet offered prepackaged to consumers at retail level the Committee came to the conclusion that no standard was needed at this point in time. This was supported by the observer from the International Association of Fishmeal Producers who reported that there was no significant international trade in marine oils except fish liver oils for sale direct to the consumer. The delegation of Norway further pointed out that any such oils that might be in circulation would be covered satisfactorily by the General Standard.

DATE AND PLACE OF THE NEXT SESSION

87. It was tentatively agreed that the next session would be in London in November/ December 1978. The aim of the authorities from the United Kingdom would be to ensure that delegates be informed in good time should there be any change in the date or venue.

ALINORM 78/17
APPENDIX I

LIST OF PARTICIPANTS
LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

AUSTRALIA
AUSTRALIE

C.G. Field
Australia House
Strand
London WC2B 4LA, United Kingdom

AUSTRIA
AUTRICHE

Dr W. Koechlin
Bundesanstalt für Lebensmittel-
untersuchung und-forschung
Kinderspitalgasse 15
A-1090 Vienna, Austria

Dr Ing. Ernst Schmidl
Greifensteiner Strasse 88
A-3423 Wordern, Austria

BELGIUM
BELGIQUE
BELGICA

C. Cremer
Ministère de la santé publique
Cité administrative de l'Etat
Quartier Vésale
B-1010 Brussels, Belgium

Théo Biebaut
Ministère des affaires économiques
Square de Meeûs 23
B-1040 Brussels, Belgium

J.P. Coleille
33-35 rue de Stassart
B-1050 Brussels, Belgium

M. Fondu
Fédération des industries alimentaires
belges
122 Rerum Novarumlaan
B-2060 Merksem, Belgium

BRAZIL
BRESIL
BRASIL

Germinio Nazario
Ministerio da Saude
Comissáo Nacional de Normas e Padroes
de Alimentos
Av. Brazil 4036
Rio de Janeiro, Brazil

CANADA

Dr. R.P.A. Sims
Research Branch
Agriculture Canada
Ottawa, Ontario K1A 0C6, Canada

Dr. R.G. Ackman
Fisheries Management
Halifax Laboratory
P.O. Box 550
Halifax NS, Canada

Dr. Joyce Beare-Rogers
Bureau of Nutritional Sciences
Health and Welfare Canada
Ottawa, Canada

G.S. Boulter
Rapeseed Association of Canada
355 Burrard Street
Vancouver BC, Canada

J.R. Caux
Canadian High Commission
Grosvenor Square 1
London W1, United Kingdom

DENMARK
DANEMARK
DINAMARCA

J. Errboe
Aarhus Oliefabrik A/S
DK-8100 Aarhus, Denmark

Van Jespersen
Ingerslevsgade 44
DK-1705 Copenhagen, Denmark

W. Schmidstdorff
Technical Laboratory
Ministry of Fisheries DTH
DK-2800 Luprigly, Denmark

EGYPT
EGYPTE
EGIPTO

Osman Rifaat
Extracted Oils Co.
Moharrem Bey
Alexandria, Egypt

Samy Mahmoud El Wassif
Chairman Cairo Oil and Soap Co.
6-Midam El Falaky
Cairo, Egypt

Eng. El Sayed H. Abou
76 Canal Mahmoudia - P.O.B. 402
Alexandria, Egypt

FINLAND
FINLANDE
FINLANDIA

K. Salminen
National Board of Trade and
Consumer Interests
Box 9
SF-00531 Helsinki 53, Finland

Tuomo Kiutamo
Technical Research Centre Finland
Food Research Laboratory
SF-02150 ESPOO 15, Finland

E. Petaja
Board of Customs
Box 512
SF-00101 Helsinki 10, Finland

FRANCE
FRANCIA

Mrs. J. Castang
Laboratoire Interrégional de la Répression
des Fraudes et du Contrôle de la Qualité
2, rue Saint-Pierre
F-34000 Montpellier, France

M. Durodie
Agricultural Adviser
French Embassy
12, Stanhope Gate
London W1, United Kingdom

J. Flanzy
Inra Cnrz
F-78220 Jony en Josas, France

GERMANY, FED. REP.
ALLEMAGNE, REP. FED.
ALEMANIA, REP. FED.

Dr. E. Hufnagel
Bundesministerium für Jugend, Familie
und Gesundheit
Deutschherrenstr. 87
D-53 Bonn-Bad Godesberg, Germany, Fed.Rep.

Dr. Schede
17 Kronprinzen Str.
D-53 Bonn-Bad Godesberg, Germany, Fed.Rep.

R. Tiebach
Bundesgesundheitsamt
Postfach 1000
D- Berlin 33, Germany, Fed.Rep.

Dr. H.B. Tolkmitt
Schwanenwik 33
D-2000 Hamburg 76, Germany, Fed.Rep.

Dr. K. Trenkle
Bundesministerium für Ernahrung,
Landwirtschaft und Forsten
Rochus Str.
D-53 Bonn 1, Germany, Fed.Rep.

GERMANY, FED. REP. (Cont.)

Dr. H. Wessels
Bundesanstalt für Fettforschung
Piusallee 76
D-44 Münster, Germany, Fed.Rep.

GHANA

J.K.B.A. Ata
Food Research Institute
P.O. Box M20
Accra, Ghana

A.O. Ntiforo
Ghana Standards Board
P.O. Box M245
Accra, Ghana

GREECE
GRECE
GRECIA

Dr. C. Gegiou
Research Department
General Chemical State Laboratory
16 AN Tsoha Street
Athens, Greece

HUNGARY
HONGRIE
HUNGRIA

Dr. Eva Kurucz
Research Institute for Vegetable Oil
and Detergents
Maglodi St. 6
Budapest X, Hungary

J. Gulyas
National Enterprise for Vegetable Oil
and Detergent Industry
Horvathmihaly V 2
1151 Budapest, Hungary

IRELAND
IRLANDE
IRLANDA

John W. Langan
Institute for Industrial Research
Ballymun Road
Dublin 9, Ireland

T.M. O'Toole
Department of Agriculture
Kildare Street
Dublin 2, Ireland

ITALY
ITALIE
ITALIA

Ing. C. Carola
Stazione Sperimentale Olii e Grassi
Via Cristoforo Colombo 79
Milano, Italy

ITALY (Cont.)

Prof. R. Monacelli
Istituto Superiore Sanità
Viale Regina Elena 299
00161 Roma, Italy

Prof. E. Tiscornia
Istituto Chimica Farmaceutica
e Tossicologica
Università di Genova
Viale Benedetto XV, 3
I-16132 Genova, Italy

JAPAN
JAPON

H. Ikuta
Consumer Division
Food and Marketing Bureau
Ministry of Agriculture and Forestry
No. 1-2 Kashumigaseki
Chiyoda-ku, Tokyo, Japan

M. Hamashima
Nihon Yushi Kyokai
11, 13, 3-Chome Nihonbashi
Chwo-Ku
Tokyo 104, Japan

K. Miki
Japanese Margarine Manufacturers Assoc.
Hama-Cho
Chwo-Ku
Tokyo, Japan

Dr. Kimio Terada
Asahi Denka KK
Higashiogu Arakawa-KU
Tokyo, Japan

NETHERLANDS
PAYS-BAS
PAISES BAJOS

Dr. R.F. van der Heide
Ministry of Public Health
Dr. Reijerstraat 10
Leidschendam, Netherlands

L.H. Halbesma
Ministry of Agriculture and Fisheries
Bezuidenhoutseweg 73
The Hague, Netherlands

Dr. R. Norg
Commodity Board for Margarine, Fats & Oils
Stadhoudersplantsoen 12
The Hague, Netherlands

G.J. van Beers
Van Heutz Park 35
Vlaardingen, Netherlands

NEW ZEALAND
NOUVELLE ZELANDE
NUEVA ZELANDIA

J.A. Black
St. Olaf House
Tooley Street
London SE1 2PG, United Kingdom

NORWAY
NORVEGE
NORUEGA

Dr. Olaf R. Braekkan
Head, Government Vitamin Institute
P.O. Box 187
N-5001 Bergen, Norway

Georg Lambertsen
Government Vitamin Institute
Director of Fisheries
P.O. Box 187
N-5001 Bergen, Norway

Ottar T. Christiansen
The Health Services of Norway
Akersgt 42
Oslo Dept., Norway

Thor Grimsvang
A/S DE-NO-FA & Lilleborg Fabr.
N-1601 Frederikstad, Norway

Peter Haram
Ministry of Fisheries
Oslo Dept., Norway

Johannes Opstvedt
SSF 5033 Fyllingsdalen
Bergen, Norway

John Race
Norwegian Codex Alimentarius Committee
Box 8139 - Dep.
Oslo 1, Norway

Hans Simonsen
The Royal Ministry of Agriculture
Oslo Dep., Norway

PERU
PEROU

C.J. Motte
8-10 Grosvenor Gardens
London SW1, United Kingdom

Dr. S.M. Barlow
Peruvian Embassy
8-10 Grosvenor Gardens
London SW1, United Kingdom

SENEGAL

Dr. E.M. Ndao
Chef du Laboratoire Répression des Fraudes
B.P. 195
Dakar, Senegal

SPAIN
ESPAGNE
ESPANA

A. Mazuecos Moraga
Laboratorio Agrario Regional de Andalucia Oriental
Av. Diputacion, s/n
Atarfe (Granada), Spain

SWEDEN
SUEDE
SUECIA

Olof Ågren
Codex Secretariat
National Food Administration
Box 622
S-751 26 Uppsala, Sweden

Ostes Levin
Margarin Bolaget AB
Fack
S-104 25 Stockholm, Sweden

Dr. Ragnar Ohlson
Research Laboratory
Karlshamns Oljefabriker
S-292 00 Karlshamn, Sweden

Karl-Erik Thurell
ARLA
Fack
S-101 10 Stockholm, Sweden

SWITZERLAND
SUISSE
SUIZA

Hans U. Pfister
Swiss Federal Health Office
Haslerstrasse 16
CH-3008 Berne, Switzerland

Dr. H.U. Brugger
Astra Fett & Oelwerke AG
CH-3612 Steffisburg, Switzerland

THAILAND
THAILANDE
TAILANDIA

P. Panpaprai
Department of Science
Ministry of Industry
Rama 6 Rd
Bangkok 4, Thailand

TUNISIA
TUNISIE
TUNEZ

Mahmoud Ben Redjeb
Ministère de l'Economie Nationale
La Kerba
Tunis, Tunisia

UNITED KINGDOM
ROYAUME-UNI
REINO UNIDO

F.S. Anderson
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1P 2AE, United Kingdom

L.E. George
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1P 2AE, United Kingdom

Dr. S.M. Barlow
IAFMM - Hoval House
Orchard Parade
Mutton Lane
Potters Bar
Herts, United Kingdom

J.H. Broadbent
Tropical Products Institute
56-62 Grays Inn Road
London WC1X 8LU, United Kingdom

Dr. M.A. Crawford
Nuffield Laboratories of Comparative Medicine
Institute of Zoology
London NW1, United Kingdom

R.J. Cunningham
c/o Van den Berghs and Jurgens Ltd
Sussex House
Burgess Hill
Sussex, United Kingdom

Dr. M.J. Hayes
c/o Kraft Foods Ltd
St. Georges House
Bayshill Road
Cheltenham, United Kingdom

D.R. Morgan
1-2 Castle Lane
London SW1P 2AE, United Kingdom

W.D. Pocklington
Laboratory of the Government Chemist
Cornwall House
Stamford Street
London SE1 9NQ, United Kingdom

R. Sawyer
Laboratory of the Government Chemist
Cornwall House
Stamford Street
London SE1 9NQ, United Kingdom

UNITED STATES OF AMERICA
ETATS-UNIS D'AMERIQUE
ESTADOS UNIDOS DE AMERICA

Dr. R. Weik
Assistant to Director
Bureau of Foods (HFF 4)
Food and Drug Administration
Washington, D.C. 20204, USA

A.P. Bimbo
P.O. Box 175
Reedville, Va 22539, USA

J.R. Brooker
National Marine Fisheries Services
US Department of Commerce
Washington D.C. 20235, USA

Gloria E.S. Cox
Cox & Cox Investments
12006 Auth Lane
Silver Spring, Maryland 20902, USA

Dr. R.J. Hlavacek
T.J. Lipton Inc.
800 Sylvan Avenue
Englewood Cliffs
New Jersey 07922, USA

R.D. O'Neill
D.P. Joyce Research Center
16653 Sprague Road
Strongville, Ohio 44136, USA

H.I. Richard
2501-06 Centre International
Place Rogier
B-1066 Brussels, Belgium

Dr. E.L. Sexton
CPC - International
Box 1534 Union
New Jersey 07083, USA

R.J. Sims
General Foods Corp.
White Plains
New York, USA

Dr. W.H. Tallent
Northern Regional Research Center
1815 North University Street
Peoria, Illinois 61604, USA

U.S.S.R.
U.R.S.S.

V.V. Kliuckin
10 Chernjahovskaya
Research Institute of Fats
Leningrad, USSR

YUGOSLAVIA
YOUGOSLAVIA

Dr. B. Ostrić-Matijasevic
Faculty of Technology
Veljha Vlahovica 2
21000 Novisad, Yugoslavia

Ing. L. Rajcic
Oil Factory
Branimirova 71
41000 Zagreb, Yugoslavia

ZAIRE

Dr. Phaka-Mbumba
Université Nationale du Zaïre
B. P. 6003
Kinshasa, Zaire

INTERNATIONAL ORGANIZATIONS
ORGANISATIONS INTERNATIONALES
ORGANIZACIONES INTERNACIONALES

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS (AOAC)

Dr. R.W. Weik
Assistant to Director
Bureau of Foods (HFF 4)
Food and Drug Administration
Washington, D.C.20204, USA

EUROPEAN ECONOMIC COMMUNITY (EEC)

M. Graf
Secrétariat général du Conseil
170 rue de la Loi
B-1040 Brussels, Belgium

Mme S. Haarscher
Commission of the European Communities
200 rue de la Loi
B-1040 Brussels, Belgium

R. Haigh
Commission of the European Communities
200 rue de la Loi
B-1040 Brussels, Belgium

EUROPEAN FOOD EMULSIFIER MANUFACTURERS ASSOCIATION (EFEMA)

J.J. Jenkins
c/o Food Industries Ltd.
Bromborough Port
Merseyside L62 4SU, United Kingdom

INTERNATIONAL ASSOCIATION OF FISHMEAL MANUFACTURERS (IAFMM)

Dr. S.M. Barlow
Hoval House
Orchard Parade
Mutton Lane
Potters Bar, Herts, United Kingdom

INTERNATIONAL FEDERATION OF MARGARINE ASSOCIATION (IFMA)

F. Francke
Rue de la Loi 88
B-1040 Brussels, Belgium

M. Fondu
122 Rerum Novarumlaan
B-2060 Merksem, Belgium

INTERNATIONAL ORGANIZATION OF CONSUMERS UNIONS (IOCU)

J. Edwards
c/o Consumers Association
14 Buckingham Street
London WC2, United Kingdom

Dr. Lesley Yeomans
c/o Consumers Association
14 Buckingham Street
London WC2, United Kingdom

INTERNATIONAL OLIVE OIL COUNCIL (IOOC)

Dr. P. Di Gregorio
Conseil Oléicole Intern. Co.
Juan Bravo 10
Madrid 6, Spain

INTERNATIONAL PECTIN PRODUCERS ASSOCIATION (IPPA)

Dr. J. Buckle
c/o HP Bulmer Ltd.
Ryeland Street
Hereford HR4 OLE, United Kingdom

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

E. Hopkin
British Standards Institute
2 Park Street
London W1A 2BS, United Kingdom

W.H. Tatton
British Standards Institute
2 Park Street
London W1A 2BS, United Kingdom

Dr. K.A. Williams
7 Hardwick Street
London EC1R UR3, United Kingdom

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY (IUPAC)

Dr. K.A. Williams
7 Harwick Street
London EC1R UR3, United Kingdom

FOOD AND AGRICULTURE ORGANIZATION (FAO)

Mrs. B. Dix
Food Standards Officer
FAO/WHO Food Standards Programme
FAO, 00100 Rome, Italy

G.O. Kermode
Chief
Food Standards and Control Service
FAO, 00100 Rome, Italy

WORLD HEALTH ORGANIZATION (WHO)

Dr. D.G. Chapman
World Health Organization
Avenue Appia
CH-1211 Geneva 27, Switzerland

CHAIRMAN
PRESIDENT
PRESIDENTE

A.W. Hubbard
Ministry of Agriculture, Fisheries and Food
Romney House
Romney Street
London SW1P 2AE, United Kingdom

SECRETARIES

Administrative

R.F. Shadbolt
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1P 2AE, United Kingdom

Scientific

Richard B. Player
Ministry of Agriculture, Fisheries and Food
Great Westminester House
Horseferry Road
London SW1P 2AE, United Kingdom

ALINORM 78/17
APPENDIX II

GENERAL STANDARD FOR EDIBLE FATS AND OILS NOT COVERED BY INDIVIDUAL CODEX STANDARDS (CAC/RS 19-1969)

(Revised text at Step 5 of the Codex Procedure)

1. SCOPE

This standard applies to edible oils and fats and mixtures thereof which are used for direct consumption including catering purposes or as ingredients in the manufacture of food products. It covers oils and fats that have been subjected to processes of modification but does not include oils and fats which must be subjected to further processing in order to render them suitable for human consumption. This standard does not apply to any oil or fat which is the subject of a specific Codex Commodity standard and is designated by a specific name laid down in such standards.

2. DESCRIPTIONS

2.1 Edible Fats and Oils means those foodstuffs defined in provision 1 which are composed of glycerides of fatty acids. They are of vegetable, animal or marine origin. They may contain small amounts of other lipids such as phosphatides, of unsaponifiable constituents and of free fatty acids naturally present in the fat or oil. Fats of animal origin must be produced from animals in good health at the time of slaughter and be fit for human consumption as determined by a competent authority recognized in national legislation (see Section 6).

2.2 Virgin Fats and Oils means edible vegetable fats and oils obtained by mechanical procedures and the application of heat only. They may have been purified by washing with water, settling, filtering and centrifuging only.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw Materials

Edible fats and/or oils or mixtures thereof.

3.2 Colour

Characteristic of the designated product.

3.3 Odour and Taste

Characteristic of the designated product and free from foreign and rancid odour and taste.

3.4 Acid Value

Virgin fats and oils	not more than 4 mg KOH/g fat or oil.
Non-virgin fats and oils	not more than 0.6 mg KOH/g fat or oil.

3.5 Peroxide Value

not more than 10 milliequivalents of peroxide oxygen/kg fat or oil.

4. FOOD ADDITIVES (Not permitted in virgin oils covered by the Standard).

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value:

		Maximum level
4.1.1	Beta-carotene	Not limited
4.1.2	Annatto*	Not limited
4.1.3	Curcumin*	Not limited
4.1.4	Canthaxanthine	Not limited
4.1.5	Beta-apo-8'-carotenal	Not limited
4.1.6	Methyl and ethyl esters of beta-apo-8'-carotenoic acid	Not limited

* Temporarily endorsed.

4.2 Flavours

Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value*.

		Maximum level
4.3	Antioxidants	
4.3.1	Propyl, octyl, and dodecyl gallates*	100 mg/kg individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)* Butylated hydroxyanisole (BHA)* Tertiary butyl hydroquinone (TBHQ) 1/ /4-Hydroxymethyl-2,6-diterbutylphenol/	200 mg/kg individually or in combination
4.3.3	Any combination of gallates with BHA or BHT, and/or TBHQ 1/	200 mg/kg, but gallates not to exceed 100 mg/kg
4.3.4	Natural and synthetic tocopherols	Not limited
4.3.5 4.3.6	Ascorbyl palmitate Ascorbyl stearate	500 mg/kg individually or in combination
4.3.7	Dilauryl thiodipropionate	200 mg/kg
4.4	Antioxidant synergists	
4.4.1	Citric acid and its sodium salt	Not limited
4.4.2 4.4.3	Isopropyl citrate mixture Phosphoric acid	100 mg/kg individually or in combination
4.5	Anti-foaming agent	
	Dimethyl polysiloxane (dimethyl silicone) singly or in combination with silicone dioxide	10 mg/kg
4.6	Crystallisation inhibitor	
	Oxystearin	1 250 mg/kg
5.	CONTAMINANTS	
5.1	Matter volatile at 105°C	0.2% m/m
5.2	Insoluble impurities	0.05% m/m
5.3	Soap content	0.005% m/m
5.4	Iron (Fe) - virgin oil	5 mg/kg
	- non-virgin oil	1.5 mg/kg
5.5	Copper (Cu) - virgin oil	0.4 mg/kg
	- non-virgin oil	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

6. HYGIENE

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969) and the Recommended International Code of Hygienic Practice for Processed Meat Products (CAC/RCP 13-1976).

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* Temporarily endorsed.

1/ Subject to endorsement.

7. LABELLING

In addition to sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969) the following specific provisions apply.

7.1 Name of the Food

7.1.1 The name designated for the product conforming to the definition at 2.1 of the standard shall be such as to give a true indication of the nature of the fat or oil, and not to mislead the consumer. In the case of mixtures, names such as edible oil and salad oil which do not indicate a plant or animal source may be used without further qualification.

7.1.2 Where an oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency the specific name of the oil shall not be used unless qualified to indicate the nature of the process.

7.1.3 The designation virgin fat or virgin oil may only be used for individual fats or oils conforming to the definition at 2.2 of this standard.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking and Storage Instructions

7.7.1 The date of minimum durability of the product shall be declared in clear.

7.7.2 In addition to the date, any special conditions for the storage of the food should be indicated if the validity of the date depends thereon.

7.8 Bulk Packs

(To be elaborated).

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods.

8.1 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2 Acid Value)

Results are expressed as the number of mg KOH required to neutralize 1 g oil or fat.

8.2 Determination of Peroxide Value (I_p)

According to the IUPAC (1964) method (IUPAC Standard Methods for the analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13 Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg fat or oil.

8.3 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1 Moisture and Volatile Matter).

Results are expressed as % m/m.

8.4 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2 Impurities).

Results are expressed as % m/m.

8.5 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Codex Alimentarius Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969, Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

8.6 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Codex Alimentarius Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

8.7 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC, International Union of Pure and Applied Chemistry Carbamate Method - 24.023-24.028).

Results are expressed as mg copper/kg.

8.8 Determination of Lead*

According to the AOAC (1965) method after complete disgestion by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965), 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048).

Results are expressed as mg lead/kg.

8.9 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC (Official Nethod of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

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* Might be replaced by Atomic Absorption Spectrophotometry in the future.

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APPENDIX III

DRAFT STANDARD FOR /"REDUCED FAT MARGARINE"/

(at Step 6 of the Codex Procedure)

1. SCOPE

This standard applies to any prepackaged product for direct consumption which complies with the provisions of this standard.

2. DESCRIPTION

2.1 Product Definition

/"Reduced Fat Margarine"/ is a food in the form of a spreadable emulsion, which is mainly of the type water/oil, produced principally from water and edible fats and oils which are not or are not mainly derived from milk.

2.2 Other Definitions

2.2.1 Edible fats and oils means foodstuffs composed of glycerides of fatty acids. They are of vegetable, animal or marine origin. They may contain small amounts of other lipids such as phosphatides, of unsaponifiable constituents and of free fatty acids naturally present in the fat or oil. Fats of animal origin must be produced from animals in good health at the time of slaughter and be fit for human consumption as determined by a competent authority recognized in national legislation (see Section 6).

2.2.2 Pre-packed means packed or made up in advance, ready for retail sale in a container.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw Materials

3.1.1 Water and/or milk and/or milk products.

3.1.2 Edible fats and/or oils, or mixtures of these, whether or not they have been subjected to a process of modification.

3.2 Other /"Reduced Fat Margarine"/ shall contain not more than 70% m/m fat.

3.3 /"Reduced Fat Margarine"/ (Fat content 39-41%) shall contain not less than 39% and not more than 41% m/m fat and not less than 50% m/m water.

3.4 Optional Ingredients

The following substances may be added:

3.4.1 Vitamins: Vitamin A and its esters
Vitamin D
Vitamin E and its esters
Other Vitamins

Maximum and minimum levels for Vitamins A, D and E and other Vitamins should be laid down by national legislation in accordance with the needs of each individual country including, where appropriate, the prohibition of the use of particular vitamins.

3.4.2 Egg yolk

3.4.3 Sodium chloride

3.4.4 Sugars 1/

3.4.5 Suitable edible proteins

3.4.6 Suitable milk products

3.4.7 Gelatine

3.4.8 Natural starches

1/ "Sugars" means any carbohydrate sweetening matter.

4.	FOOD ADDITIVES	
4.1	Colours	Maximum level of use
4.1.1	Beta-carotene 1/	25 mg/kg
4.1.2	Bixin, norbixin or annatto extracts singly or in combination 1/	20 mg/kg (calculated as total bixin or norbixin)
4.1.3	Turmeric or curcumin	5 mg/kg (calculated as total curcumin)
4.2	Flavours*	
4.2.1	Natural flavours as defined in the Codex Alimentarius and their identical synthetic equivalents	Limited by GMP
4.2.2	Other synthetic flavours approved by the Codex Alimentarius Commission	
4.3	Emulsifiers	
4.3.1	Lecithins	Limited by GMP
4.3.2	Mono- and diglycerides of fatty acids	Limited by GMP
4.3.3	Polyglycerol esters of fatty acids 1/	10 g/kg individually or in combination
4.3.4	Polyglycerol esters of interesterified ricinoleic acid 1/	
4.3.5	Esters of fatty acids with polyalcohols other than glycerol: Sorbitan monopalmitate Sorbitan monostearate Sorbitan tristearate Polyoxyethylene (20) sorbitan monolaurate Polyoxyethylene (20) sorbitan monopalmitate Polyoxyethylene (20) sorbitan monostearate Polyoxyethylene (20) sorbitan tristearate Polyoxyethylene (20) sorbitan monoleate	
4.4	Thickening Agents	
4.4.1	Pectins*	10 g/kg individually or in combination
4.4.2	Agar-agar	
4.4.3	Carrageenan	
4.4.4	Guar gum	
4.4.5	Locust bean gum*	
4.4.6	Tragacanth gum 1/	
4.4.7	Xanthan gum	
4.4.8	Methyl cellulose	
4.4.9	Carboxymethyl cellulose and its sodium salts	
4.4.10	Sodium, potassium, calcium and ammonium alginates	
4.4.11	Propylene glycol alginate	
4.5	Preservatives	
4.5.1	Sorbic acids and its sodium, potassium and calcium salts	1 000 mg/kg individually or in combination
4.5.2	Benzoic acid and its sodium and potassium salts	

* Temporarily endorsed.
1/ Subject to endorsement.

4.6	Antioxidants	Maximum level of use
4.6.1	Propyl, octyl, and dodecyl gallates*	100 mg/kg of the fat content individually or in combination
4.6.2	Butylated hydroxytoluene (BHT)*	
4.6.3	Butylated hydroxyanisole (BHA)*	
4.6.4	Ascorbyl palmitate/stearate	500 mg/kg of the fat content
4.6.5	L-ascorbic acid	300 mg/kg of the fat content
4.6.6	Natural and synthetic tocopherols	Limited by GMP
4.7	Antioxidant Synergist	
	Calcium disodium salt of EDTA 1/	100 mg/kg
4.8	pH Correcting Agents	
4.8.1	Lactic acid	Limited by GMP
4.8.2	Citric acid	
4.8.3	Sodium hydrogen carbonate	
4.8.4	Sodium carbonate	
4.8.5	Sodium hydroxide	
4.8.6	Sodium monophosphates (orthophosphates)	
5.	CONTAMINANTS	
5.1	Iron (Fe)	1.5 mg/kg
5.2	Copper (Cu)	0.1 mg/kg
5.3	Lead (Pb)*	0.1 mg/kg
5.4	Arsenic (As)	0.1 mg/kg

6. HYGIENE

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969) and the Recommended International Code of Hygienic Practice for Processed Meat Products (Ref. No. CAC/RCP 13-1976).

7. PACKAGING

["Reduced Fat Margarine"] when sold by retail, shall be pre-packed and may be sold in a pack of any shape.

8. LABELLING

In addition to Sections 1, 2, 4 and 6 of the General Standard for Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

8.1 Name of the Food

8.1.1 The name of the product shall be ["Reduced Fat Margarine"]. The words "Fat Content %" shall appear in close proximity to the name of the product.

8.1.2 Products complying with Section 3.3 may be designated "Minarine" without further qualification or by any appropriate designation in accordance with the law and customs of the country in which the product is sold and in a manner so as not to mislead the consumer.

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* Temporarily endorsed.

1/ Subject to endorsement.

8.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with sub-section 3.2(c) of the General Standard for the Labelling of Prepackaged Foods.

8.3 Net Contents

The net contents shall be declared by weight either in the metric ("Système international" units) or avoirdupois or both systems as required by the country in which the product is sold.

8.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

8.5 Country of Origin

The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

8.6 Exemptions

The information specified under 8.2, 8.3, 8.4 and 8.5 need only be given on the outer cartons containing ["Reduced Fat Margarine"] packed in units less than 50 g.

8.7 Labelling Prohibitions

[8.7.1 No reference shall be made on the label or pack to the presence of milk and/or dairy products except in a complete list of ingredients.]

8.7.2 No reference shall be made other than in a complete list of ingredients to the presence of any vitamin in ["Reduced Fat Margarine"] unless the name and quantity of the vitamin is stated on the label.

8.8 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

8.9 Date Marking and Storage Instructions

8.9.1 The date of minimum durability of the product shall be declared in clear.

8.9.2 In addition to the date, any special conditions for the storage of the food should be indicated if the validity of the date depends thereon.

9. METHODS OF ANALYSIS

9.1 Estimation of Milk Fat Content - CAC/RM 15-1969

9.2 Determination of Fat Content - CAC/RM 16-1969

9.3 Determination of Loss of Mass on Drying - CAC/RM 17-1969

9.4 Determination of Vitamin A Content - According to AOAC, 1965, 39.001-39.007, Chemical Methods, Vitamin A in Margarine.

Results are expressed as microgrammes retinol (Vitamin A alcohol) per kg.

9.5 Determination of Vitamin D Content - According to AOAC, 1965, 39.116-39.129, Vitamin D.

Results are expressed as IU Vitamin D per kg.

9.6 Determination of Vitamin E - CAC/RM 18-1969

9.7 Determination of Sodium Chloride Content - CAC/RM 19-1969.

9.8 Determination of Iron* - CAC/RM 14-1969

9.9 Determination of Copper* - According to AOAC, 1965, 24.023-24.028, IUPAC Carbamate Method.

Results are expressed as mg copper/kg.

9.10 Determination of Lead* - According to AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048), dithizone determination procedure.

Results are expressed as mg lead/kg.

9.11 Determination of Arsenic - According to AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008, silver diethyldithiocarbamate method.

Results are expressed as mg arsenic/kg.

9.12 Determination of Preservatives -

(To be developed)

/The above methods will be included in the agreed review of methods of analysis - para 81/.

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* Might be replaced by Atomic Absorption Spectrophotometry in the future.

DRAFT STANDARD FOR EDIBLE LOW ERUCIC ACID RAPESEED OIL

(at Step 6 of the Codex Procedure)

1. SCOPE

This standard applies to edible low erucic acid rapeseed oil for direct consumption, but does not apply to low erucic acid rapeseed oil which must be subjected to further processing in order to render it suitable for human consumption.

2. DESCRIPTION

Low Erucic Acid Rapeseed Oil (synonyms: low erucic acid turnip rape oil; low erucic acid colza oil) is produced from the low erucic acid oil-bearing seeds of varieties derived from the Brassica napus L., Brassica campestris L. species.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Identity Characteristics

3.1.1	Relative Density ($20^{\circ}C$/water at $20^{\circ}C$)	0.914 - 0.917
3.1.2	Refractive Index (n_D $40^{\circ}C$)	1.465 - 1.467
3.1.3	Saponification Value (mg KOH/g oil)	188 - 193
3.1.4	Iodine Value (Wijs)	110 - 126
3.1.5	Crismer Value	67 - 70
3.1.6	Unsaponifiable Matter	not more than 20 g/kg
3.1.7	Brassicasterol (% of total sterols)	not less than 5
3.1.8	Erucic Acid	not more than 5% (m/m) of the component fatty acids

3.1.9 Guideline Fatty acid composition (%) based on GLC

C14:0	-
C16:0	2.5 - 6.0
C18:0	1.3 - 2.1
C18:1	48 - 64
C18:2	18 - 25
C18:3	9 - 14
C20:0	0.3 - 0.8
C20:1	0.4 - 4.3
C22:0	<0.3
C22:1	<5.0
C24:0	<0.2

3.2 Quality Characteristics

3.2.1	Colour:	Characteristic of the designated product.
3.2.2	Odour and Taste:	Characteristic of the designated product and free from foreign and rancid odour and taste.
3.2.3	Acid Value:	Not more than 0.6 mg KOH/g oil.
3.2.4	Peroxide Value:	Not more than 10 milliequivalents peroxide oxygen/kg oil.

4. FOOD ADDITIVES

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.

		Maximum level of use
4.1.1	Beta-carotene	Not limited
4.1.2	Annatto*	
4.1.3	Curcumin*	
4.1.4	Canthaxanthine	
4.1.5	Beta-apo-8'-carotenal	
4.1.6	Methyl and ethyl esters of Beta-apo-8'-carotenoic acid	

4.2 Flavours

Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value*.

	4.3 Antioxidants	Maximum level of use
4.3.1	Propyl, octyl and dodecyl gallates*	100 mg/kg, individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)*	200 mg/kg, individually or in combination
4.3.3	Butylated hydroxyanisole (BHA)*	
4.3.4	Tertiary butylhydroquinone (TBHQ) 1/	
4.3.5	Any combination of gallates with BHA, BHT and/or TBHQ 1/	200 mg/kg, but gallates not to exceed 100 mg/kg
4.3.6	Ascorbyl palmitate	500 mg/kg, individually or in combination
4.3.7	Ascorbyl stearate	
4.3.8	Natural and synthetic tocopherols	Not limited
4.3.9	Dilauryl thiodipropionate	200 mg/kg
	4.4 Antioxidant Synergists	
4.4.1	Citric acid	Not limited
4.4.2	Sodium citrate	Not limited
4.4.3	Isopropyl citrate mixture	100 mg/kg, individually or in combination
4.4.4	Monoglyceride citrate	
4.4.5	Phosphoric acid	
	4.5 Anti-foaming Agent	
	Dimethyl polysiloxane (syn: Dimethyl silicone) singly or in combination with silicon dioxide	10 mg/kg
	4.6 Crystallization inhibitor	
	Oxystearin 1/	1 250 mg/kg
	5. CONTAMINANTS	
5.1	Matter volatile at 105°C	0.2% m/m
5.2	Insoluble impurities	0.05% m/m
5.3	Soap content	0.005% m/m
5.4	Iron (Fe)	1.5 mg/kg
5.5	Copper (Cu)	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

* Temporarily endorsed.

1/ Subject to endorsement.

6. HYGIENE

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969).

7. LABELLING

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply:

7.1 Name of the Food

7.1.1 All products designated as low erucic acid rapeseed oil, low erucic acid turnip rape oil, low erucic acid colza oil, must conform to this standard.

7.1.2 Where low erucic acid rapeseed oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency, the name low erucic acid rapeseed oil or any synonym shall not be used unless qualified to indicate the nature of the process.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking

The date of minimum durability of the food shall be declared in clear.

7.8 Bulk Packs

(To be elaborated)

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods and are subject to endorsement by the Codex Committee on Methods of Analysis and Sampling.

8.1 Determination of Relative Density

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 9-1969, Determination of Relative Density at t/20°C).

Results are expressed as relative density at 20°C/water at 20°C.

8.2 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966 II.B.2 Refractive Index).

Results are given as the refractive index relative to the sodium D-line at 40°C (n_D 40°C).

8.3 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2 Saponification Value (I_S).

Results are expressed as the number of mg KOH/g oil.

8.4 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.7.1., II.D.7.2 and II.D.7.3 The Wijs Method).

Results are expressed as % m/m absorbed iodine.

8.5 Determination of Crismer Value (I_C)

According to the AOCS method (Official and Tentative Methods of the American Oil Chemists' Society; AOCS Official Method Cb 4-35, Crismer Test, Fryer and Weston Modification, and Ca5a-40, Free Fatty Acids, calculating the acidity as oleic acid).

Results are expressed by a conventional value (I_C) as described in the method.

8.6 Determination of Unsaponifiable Matter

According to the IUPAC (1964) diethyl ether method (IUPAC) (Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.5.1 and II.D.5.3).

Results are expressed as g unsaponifiable matter/kg oil.

8.7 Determination of Erucic Acid 1/

According to IUPAC Methods II.D.19 and II.D.25.

8.8 Determination of Sterols 2/

According to IUPAC Method II.C.8. (Method to be developed).

8.9 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2 Acid Value (I_A).

Results are expressed as the number of mg KOH required to neutralize 1 g oil.

8.10 Determination of Peroxide Value (I_P)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13 Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.11 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1 Moisture and Volatile Matter).

Results are expressed as % m/m.

8.12 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2 Impurities).

Results are expressed as % m/m.

1/ To be referred to the Codex Committee on Methods of Analysis and Sampling, see paras 65 and 76.

2/ Subject to endorsement, see para 73.

8.13 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969, Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

8.14 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

8.15 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC, International Union of Pure and Applied Chemistry Carbamate Method, 24.023-24.028).

Results are expressed as mg copper/kg.

8.16 Determination of Lead*

According to the AOAC (1965) method, after complete digestion, by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048)).

Results are expressed as mg lead/kg.

8.17 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC (Official Methods of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

* Might be replaced by Atomic Absorption Spectrophotometry in the future.

COMPOSITION (%) OF STEROL FRACTIONS OF VEGETABLE OILS DETERMINATED BY GLC*

COLUMN COATED WITH SE 30 OR JXR

Botanical family	Seed oil crude	Cholesterol	Brassicasterol	Campesterol	Stigmasterol	Δ^7campesterol	ß-sitosterol	Δ^7stigmastenol	Reference
Cruciferae	Rapeseed: $C_{22:1} > 5\%$	< 1	7,5-16,5	23,5-38,0	< 1,5		52,0-64,5		1 -11, 23
"	" : $C_{22:1} < 5\%$	< 1	5,0-12,0	30,0-42,5	< 1,5		47,5-60,0		8,10,11,15,23
Leguminosae	Peanut	< 1		11,0-19,0	8,0-13,0		69,5-78,5	0,5-1,5	1,2,5-11,18,21,23
"	Soybean	< 1		11,5-24,0	11,0-24,0		50,0-65,0	0,5-5,5	1,2,5-11,17,18,21,23
Vitaceae	Grapeseed	< 0,5		10,0-12,0	10,0-19,5		72,5-77,0	1,0-3,0	1,2,5-9,23
Pedaliaceae	Sesame	< 0,5		18,0-23,0	6,0- 9,0		68,0-74,0	0,5-2,0	7,8,9,10,11,23
Compositae	Safflower: $C_{18:2}$-rich	< 1		11,0-17,0	8,5-18,0	1,0-5,0	44,0-54,0	10,5-31,0	6,8,11,17,18,22,24,25
"	" : $C_{18:1}$-rich	< 1		10,0-17,5	6,5-12,0	1,0-7,0	47,5-61,0	16,5-23,5	8,22,24,25
"	Sunflower	< 0,5		9,0-13,0	8,0-13,5	1,0-3,0	59,5-67,5	7,5-20,0	1,2,5-11,20,22-24
Graminae	Corn	< 1		16,0-22,0	6,0-9,0		69,5-75,5	0,5-5,0	1,2,5-11,23

*The sterols were then analysed as trimethylsilyl derivatives (TMS).

Preliminary data taken from: "Indagine statistica sulla composizione della frazione sterolica di oli vegetali alimentari" E. Tiscornia - M.A. Pagano, in the press.

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APPENDIX VI

PROPOSED DRAFT INTERNATIONAL STANDARD FOR EDIBLE COCONUT OIL

(at Step 5 of the Codex Procedure)

1. SCOPE

This standard applies to edible coconut oil but does not apply to coconut oil which must be subject to further processing in order to render it suitable for human consumption.

2. DESCRIPTION

Coconut oil is derived from the kernel of the coconut (Cocos nucifera).

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Identity Characteristics

3.1.1	Relative Density [30°C/water at 30°C]	[0.915 - 0.927]
3.1.2	Refractive Index (n_D 40°C)	1.448 - 1.450
3.1.3	Saponification Value (mg KOH/g oil)	248 - 265
3.1.4	Iodine Value (Wijs)	6 - 11
3.1.5	Unsaponifiable matter	not more than 10 g/kg
3.1.6	Reichert Value	6 - 8
3.1.7	Polenske Value	13.0

[3.1.8 Guideline Fatty acid composition (%) based on GLC

C 6:0	0 - 0.8
C 8:0	5.4 - 9.5
C10:0	4.5 - 9.7
C12:0	44.1 - 51.3
C14:0	13.1 - 18.5
C16:0	7.5 - 10.5
C18:0	1.0 - 3.7
C18:1	5.0 - 8.2
C18:2	1.0 - 2.6]

3.2 Quality Characteristics

3.2.1	Colour:	Characteristic of the designated product.
3.2.2	Odour and Taste:	Characteristic of the designated product and free from foreign and rancid odour and taste.
3.2.3	Acid Value:	
	virgin oil	not more than 4 mg KOH/g
	non-virgin oil	not more than 0.6 mg KOH/g
3.2.4	Peroxide Value:	not more than 10 milliequivalents peroxide oxygen/kg oil.

4. FOOD ADDITIVES

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.

		Maximum level of use
4.1.1	Beta-carotene	Not limited
4.1.2	Annatto*	Not limited
4.1.3	Curcumin*	Not limited
4.1.4	Canthaxanthine	Not limited
4.1.5	Beta-apo-8'-carotenal	Not limited
4.1.6	Methyl and ethyl esters of Beta-apo-8'-carotenoic acid	Not limited

* Temporarily endorsed.

4.2 Flavours

Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value*.

		Maximum level of use
4.3	Antioxidants	
4.3.1	Propyl, octyl and dodecyl gallates*	100 mg/kg, individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)*	200 mg/kg, individually or in combination
4.3.3	Butylated hydroxyanisole (BHA)*	
4.3.4	Any combination of gallates, with BHA or BHT, or both*	200 mg/kg, but gallates not to exceeed 100 mg/kg
4.3.5	Ascorbyl palmitate	500 mg/kg, individually or in combination
4.3.6	Ascorbyl stearate	
4.3.7	Natural and synthetic tocopherols	Not limited
4.3.8	Dilauryl thiodipropionate	200 mg/kg
4.4	Antioxidant Synergists	
4.4.1	Citric acid	Not limited
4.4.2	Sodium citrate	Not limited
4.4.3	Isopropyl citrate mixture	100 mg/kg, individually or in combination
4.4.4	Monoglyceride citrate	
4.4.5	Phosphoric acid	
4.5	Anti-foaming Agent	
	Dimethyl polysiloxane (syn. Dimethyl silicone) singly or in combination with silicon dioxide	10 mg/kg
5.	CONTAMINANTS	
5.1	Matter volatile at 105°C	0.2 % m/m
5.2	Insoluble impurities	0.05% m/m
5.3	Soap content	0.005% m/m
5.4	Iron (Fe) - virgin oil	5 mg/kg
	- non-virgin oil	1.5 mg/kg
5.5	Copper (Cu) - virgin oil	0.4 mg/kg
	- non-virgin oil	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

6. HYGIENE (to be endorsed)

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969).

7. LABELLING (to be endorsed)

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

* Temporarily endorsed.

7.1 Name of the Food

7.1.1 All products designated as coconut oil must conform to this standard.

7.1.2 Where coconut oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency, the name coconut oil shall not be used unless qualified to indicate the nature of the process.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter, or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking

The date of minimum durability of the food shall be declared in clear.

7.8 Bulk Packs

(To be developed)

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods and are subject to endorsement by the Codex Committee on Methods of Analysis and Sampling.

8.1 Determination of Relative Density

/According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 9-1969, Determination of Relative Density at t/20°C.).

Results are expressed as relative density at 40°C/water at 20°C./

8.2 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.B.2, Refractive Index).

Results are given as the refractive index relative to the sodium D-line at 40°C ($n_D 40°C$).

8.3 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2, Saponification Value (I_S)).

Results are expressed as the number of mg KOH/g oil.

8.4 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.7.1, II.D.7.2 and II.D.7.3 The Wijs Method).

Results are expressed as % m/m absorbed iodine.

8.5 Determination of Unsaponifiable Matter

According to the IUPAC (1964) diethyl ether method (IUPAC) Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.5.1 and II.D.5.3).

Results are expressed as g unsaponifiable matter/kg oil.

8.6 Determination of Reichert and Polenske Values

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.9, Soluble and Insoluble Volatile Acids).

8.7 Determination of Fatty Acid Composition 1/

According to the IUPAC Methods II.D.19 and II.D.25.

8.8 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2 Acid Value (I_A)).

Results are expressed as the number of mg KOH required to neutralize 1 g oil.

8.9 Determination of Peroxide Value (I_P)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13, Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.10 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1, Moisture and Volatile Matter).

Results are expressed as % m/m.

8.11 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2, Impurities).

Results are expressed as % m/m.

8.12 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969, Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

8.13 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

8.14 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC, International Union of Pure and Applied Chemistry Carbamate Method, 24.023-24.028).

Results are expressed as mg lead/kg.

1/ To be referred to the Codex Committee on Methods of Analysis and Sampling, see para 76.

* Might be replaced by Atomic Absorption Spectrophotometry in the future.

8.15 Determination of Lead*

According to the AOAC (1965) method, after complete digestion, by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048)).

Results are expressed as mg lead/kg.

8.16 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC (Official methods of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

* Might be replaced by Atomic Absorption Spectrophotometry in the future.

PROPOSED DRAFT INTERNATIONAL STANDARD FOR EDIBLE PALM OIL

(at Step 5 of the Codex Procedure)

1. SCOPE

This standard applies to edible palm oil (edible red palm oil and edible bleached palm oil) but does not apply to palm oil (red palm oil or bleached palm oil) which must be subject to further processing in order to render it suitable for human consumption.

2. DESCRIPTION

Palm oil is derived from the fleshy mesocarp of the fruit of the oil palm (Elaeis Guineensis), and includes edible red palm oil and edible bleached palm oil.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Identity Characteristics

3.1.1	Relative Density [(40°C/water at 25°C)]	[0.900 - 0.907]
3.1.2	Refractive Index (n_D 40°C)	1.453 - 1.459
3.1.3	Saponification Value (mg KOH/g oil)	190 - 209
3.1.4	Iodine Value (Wijs)	44 - 60
3.1.5	Unsaponifiable Matter	not more than 10 g/kg

[3.1.6 Guideline Fatty acid composition (%) based on GLC

C12:0	0 - 0.5
C14:0	0.5 - 5.9
C16:0	32.0 - 51.0
C16:1	0 - 0.6
C18:0	1.5 - 8.0
C18:1	34.6 - 52.0
C18:2	5.0 - 11.8
C18:3	0 - 0.6]

3.2 Quality Characteristics

3.2.1	Colour:	Characteristic of the designated product.
3.2.2	Odour and taste:	Characteristic of the designated product and free from foreign and rancid odour and taste.
3.2.3	Acid Value:	
	- virgin oil	not more than 10 mg KOH/g [or according to local preference].
	- non-virgin oil	not more than 0.6 mg KOH/g.
3.2.4	Peroxide Value	not more than 10 milliequivalents peroxide oxygen/kg oil.
3.2.5	Total Carotenoids for Ref Palm Oil	- not less than 500 mg/kg and not more than 2 000 mg/kg.

4. FOOD ADDITIVES

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.

		Maximum level of use
4.1.1	Beta-carotene	Not limited
4.1.2	Annatto*	
4.1.3	Curcumin*	
4.1.4	Canthaxanthine	
4.1.5	Beta-apo-8'-carotenal	
4.1.6	Methyl and ethyl esters of Beta-apo-8'-carotenoic acid	

4.2 Flavours

Natural flavours and their identicial synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.*

	4.3 Antioxidants	Maximum level of use
4.3.1	Propyl, octyl and dodecyl gallates*	100 mg/kg, individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)*	200 mg/kg, individually or in combination
4.3.3	Butylated hydroxyanisole (BHA)*	
4.3.4	Any combination of gallates with BHA or BHT, or both*	200 mg/kg, but gallates not to exceed 100 mg/kg
4.3.5	Ascorbyl palmitate	500 mg/kg, individually or in combination
4.3.6	Ascorbyl stearate	
4.3.7	Natural and synthetic tocopherols	Not limited
4.3.8	Dilauryl thiodipropionate	200 mg/kg
	4.4 Antioxidant Synergists	
4.4.1	Citric acid	Not limited
4.4.2	Sodium citrate	Not limited
4.4.3	Isopropyl citrate mixture	100 mg/kg, individually or in combination
4.4.4	Monoglyceride citrate	
4.4.5	Phosphoric acid	
	4.5 Anti-foaming Agent	
	Dimethyl polysiloxane (syn. Dimethyl silicone) singly or in combination with silicon dioxide	10 mg/kg
	5. CONTAMINANTS	
5.1	Matter Volatile at 105°C	0.2% m/m
5.2	Insoluble Impurities	0.05% m/m
5.3	Soap Content	0.005% m/m
5.4	Iron (Fe) - virgin oil	5 mg/kg
	- non-virgin oil	1.5 mg/kg
5.5	Copper (Cu) - virgin oil	0.4 mg/kg
	- non-virgin oil	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

* Temporarily endorsed.

6. HYGIENE (to be endorsed)

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969).

7. LABELLING (to be endorsed)

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

7.1 Name of the Food

7.1.1 All products designated as palm oil, red palm oil or bleached palm oil must conform to this standard.

7.1.2 Where palm oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency, the name palm oil or any synonym shall not be used unless qualified to indicate the nature of the process.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking

The date of minimum durability of the food shall be declared in clear.

7.8 Bulk Packs

(To be developed).

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods and are subject to endorsement by the Codex Committee on Methods of Analysis and Sampling.

8.1 Determination of Relative Density

/According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 9-1969, Determination of Relative Density at t/20°C).

Results are expressed as relative density at 40°C/water at 20°C./.

8.2 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.B.2, Refractive Index).

Results are given as the refractive index relative to the sodium D-line at 40°C (n_D 40°C).

8.3 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2, Saponification Value (I_S)).

Results are expressed as the number of mg KOH/g oil.

8.4 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.7.1, II.D.7.2 and II.D.7.3 The Wijs Method).

Results are expressed as % m/m absorbed iodine.

8.5 Determination of Unsaponifiable Matter

According to the IUPAC (1964) diethyl ether method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.5.1 and II.D.5.3).

Results are expressed as g unsaponifiable matter/kg oil.

8.6 Determination of Fatty Acid Composition 1/

According to the IUPAC method II.D.19 and II.D.25.

8.7 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2, Acid Value (I_A)).

Results are expressed as the number of mg KOH required to neutralize 1 g oil.

8.8 Determination of Peroxide Value (I_p)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13, Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.9 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1, Moisture and Volatile Matter).

Results are expressed as % m/m.

8.10 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2, Impurities).

Results are expressed as % m/m.

8.11 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969), Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

1/ To be referred to the Codex Committee on Methods of Analysis and Sampling, see para 76.

8.12 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

8.13 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC, International Union of Pure and Applied Chemistry Carbamate Method, 24.023-24.028).

Results are expressed as mg copper/kg.

8.14 Determination of Lead*

According to the AOAC (1965) method, after complete digestion, by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048)).

Results are expressed as mg lead/kg.

8.15 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC (Official Methods of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

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* Might be replaced by Atomic Absorption Spectrophotometry in the future.

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APPENDIX VIII

PROPOSED DRAFT INTERNATIONAL STANDARD FOR EDIBLE PALM KERNEL OIL

(at Step 5 of the Codex Procedure)

1. SCOPE

This standard applies to edible palm kernel oil but does not apply to palm kernel oil which must be subject to further processing in order to render it suitable for human consumption.

2. DESCRIPTION

Palm Kernel Oil is derived from the kernel of the fruit of the oil palm (Elaeis Guineensis).

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Identity Characteristics

3.1.1	Relative Density [(40°C/water at 25°C)]	[0.900 - 0.915]
3.1.2	Refractive Index (n_D40°C)	1.448 - 1.452
3.1.3	Saponification Value (mg KOH/g oil)	230 - 254
3.1.4	Iodine Value (Wijs)	13 - 23
3.1.5	Unsaponifiable matter	not more than 10 g/kg
3.1.6	Reichert Value	[ ]
3.1.7	Polenske Value	[ ]

[3.1.8 Guideline Fatty acid composition (%) based on GLC

C 8:0	2.4 - 4.5
C10:0	3.0 - 7.0
C12:0	44.5 - 52.0
C14:0	14.1 - 18.6
C16:0	6.5 - 10.4
C18:0	1.3 - 3.5
C18:1	10.5 - 18.5
C18:2	0.7 - 2.5]

3.2 Quality Characteristics

3.2.1	Colour:	Characteristic of the designated product.
3.2.2	Odour and taste:	Characteristic of the designated product and free from foreign and rancid odour and taste.
3.2.3	Acid Value:	
	- non-virgin oil	not more than 0.6 mg KOH/g oil.
3.2.4	Peroxide Value:	not more than 10 milliequivalents peroxide oxygen/kg oil.

4. FOOD ADDITIVES

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.

		Maximum level of use
4.1.1	Beta-carotene	)
4.1.2	Annatto*	)
4.1.3	Curcumin*	) Not limited
4.1.4	Canthaxanthine	)
4.1.5	Beta-apo-8'-carotenal	)
4.1.6	Methyl and ethyl esters of Beta-apo-8'-carotenoic acid	)

* Temporarily endorsed.

4.2 Flavours

Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value*.

		Maximum level of use
4.3	Antioxidants	
4.3.1	Propyl, octyl and dodecyl gallates*	100 mg/kg, individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)*	200 mg/kg, individually or in combination
4.3.3	Butylated hydroxyanisole (BHA)*	
4.3.4	Any combination of gallates with BHA or BHT, or both*	200 mg/kg, but gallates not to exceed 100 mg/kg
4.3.5	Ascorbyl palmitate	500 mg/kg, individually or in combination
4.3.6	Ascorbyl stearate	
4.3.7	Natural and synthetic tocopherols	Not limited
4.3.8	Dilauryl thiodipropionate	200 mg/kg
4.4	Antioxidant Synergists	
4.4.1	Citric acid	Not limited
4.4.2	Sodium citrate	Not limited
4.4.3	Isopropyl citrate mixture	100 mg/kg, individually or in combination
4.4.4	Monoglyceride citrate	
4.4.5	Phosphoric acid	
4.5	Anti-foaming Agent	
	Dimethyl polysiloxane (syn. Dimethyl silicone) singly or in combination with silicone dioxide	10 mg/kg
5.	CONTAMINANTS	
5.1	Matter Volatile at 105°C	0.2 % m/m
5.2	Insoluble Impurities	0.05 % m/m
5.3	Soap Content	0.005 % m/m
5.4	Iron (Fe)	1.5 mg/kg
5.5	Copper (Cu)	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

6. HYGIENE (to be endorsed)

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969).

7. LABELLING (to be endorsed)

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

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* Temporarily endorsed.

7.1 Name of the Food

7.1.1 All products designated as palm kernel oil must conform to this standard.

7.1.2 Where palm kernel oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency, the name palm kernel oil shall not be used unless qualified to indicate the nature of the process.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking

The date of minimum durability of the food shall be declared in clear.

7.8 Bulk Packs

(To be developed).

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods and are subject to endorsement by the Codex Committee on Methods of Analysis and Sampling.

8.1 Determination of Relative Density

/According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 9-1969, Determination of Relative Density at t/20°C).

Results are expressed as relative density at 40°C/water at 20°C./

8.2 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.B.2 Refractive Index).

Results are given as the refractive index relative to the sodium D-line at 40°C (n_D40°C).

8.3 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2, Saponification Value (I_S)).

Results are expressed as the number of mg KOH/g oil.

8.4 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.7.1, II.D.7.2 and II.D.7.3, The Wijs Method).

Results are expressed as % m/m absorbed iodine.

8.5 Determination of Unsaponifiable Matter

According to the IUPAC (1964) diethyl ether method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.5.1 and II.D.5.3).

Results are expressed as g unsaponifiable matter/kg oil.

8.6 Determination of Reichert and Polenske Values

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.9, Soluble and Insoluble Volatile Acids).

8.7 Determination of Fatty Acid Composition 1/

According to the IUPAC Methods II.D.19 and II.D.25.

8.8 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2, Acid Value (I_A)).

Results are expressed as the number of mg KOH required to neutralize 1 g oil.

8.9 Determination of Peroxide Value (I_p)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13, Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.10 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1, Moisture and Volatile Matter).

Results are expressed as % m/m.

8.11 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2, Impurities).

Results are expressed as % m/m.

8.12 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969, Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

8.13 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

1/ To be referred to the Codex Committee on Methods of Analysis and Sampling (see para 76).

* Might be replaced by Atomic Absorption Spectrophotometry in the future.

8.14 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC, International Union of Pure and Applied Chemistry Carbamate Method, 24.023-24.028).

Results are expressed as mg copper/kg.

8.15 Determination of Lead*

According to the AOAC (1965) method, after complete digestion, by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048)).

Results are expressed as mg lead/kg.

8.16 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC (Official Methods of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

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* Might be replaced by Atomic Absorption Spectrophotometry in the future.

PROPOSED DRAFT INTERNATIONAL STANDARD FOR EDIBLE GRAPESEED OIL

(at Step 5 of the Codex Procedure)

1. SCOPE

This standard applies to edible grapeseed oil but does not apply to grapeseed oil which must be subject to further processing in order to render it suitable for human consumption.

2. DESCRIPTION

Grapeseed Oil is derived from the seeds of the grape (Vitis vinifera).

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Identity Characteristics

3.1.1	Relative Density ($20^{\circ}C$/water at $20^{\circ}C$)	0.923 - 0.926
3.1.2	Refractive Index ($n_D 40^{\circ}C$)	1.473 - 1.477
3.1.3	Saponification Value (mg KOH/g oil)	188 - 194
3.1.4	Iodine Value (Wijs)	130 - 138
3.1.5	Unsaponifiable Matter	not more than 20 g/kg
3.1.6	Erythrodiol content of sterol content	not less than 20 g/kg

3.1.7 Guideline fatty acid composition (%) based on GLC

C14:0	<0.1
C14:0	<0.3
C16:0	6.5 - 10.0
C16:1	<1.2
C18:0	3 - 6
C18:1	12 - 25
C18:2	60 - 78
C18:3	<1.0
C20:0	<1.0

3.2 Quality Characteristics

3.2.1	Colour:	Characteristic of the designated product.
3.2.2	Odour and taste:	Characteristic of the designated product and free from foreign and rancid odour and taste.
3.2.3	Acid Value:	not more than 0.6 mg KOH/g oil.
3.2.4	Peroxide Value:	not more than 10 milliequivalents peroxide oxygen/kg oil.

4. FOOD ADDITIVES

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.

		Maximum level of use
4.1.1	Beta-carotene	Not limited
4.1.2	Annatto*	
4.1.3	Curcumin*	
4.1.4	Canthaxanthine	
4.1.5	Beta-apo-8'-carotenal	
4.1.6	Methyl and ethyl esters of Beta-apo-8'-carotenoic acid	

* Temporarily endorsed.

4.2 Flavours

Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.*

		Maximum level of use
4.3	Antioxidants	
4.3.1	Propyl, octyl and dodecyl gallates*	100 mg/kg, individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)*	200 mg/kg, individually or in combination
4.3.3	Butylated hydroxyanisole (BHA)*	
4.3.4	Any combination of gallates with BHA or BHT, or both*	200 mg/kg, but gallates not to exceed 100 mg/kg
4.3.5	Ascorbyl palmitate	500 mg/kg, individually or in combination
4.3.6	Ascorbyl stearate	
4.3.7	Natural and synthetic tocopherols	Not limited
4.3.8	Dilauryl thiodipropionate	200 mg/kg
4.4	Antioxidant Synergists	
4.4.1	Citric Acid	Not limited
4.4.2	Sodium citrate	Not limited
4.4.3	Isopropyl citrate mixture	100 mg/kg, individually or in combination
4.4.4	Monoglyceride citrate	
4.4.5	Phosphoric acid	
4.5	Anti-foaming Agent	
	Dimethyl polysiloxane (syn. Dimethyl silicone) singly or in combination with silicon dioxide	10 mg/kg
4.6	Crystallization Inhibitor	
	Oxystearin	1 250 mg/kg
5.	CONTAMINANTS	
5.1	Matter Volatile at 105°C	0.2% m/m
5.2	Insoluble Impurities	0.05% m/m
5.3	Soap Content	0.005% m/m
5.4	Iron (Fe)	1.5 mg/kg
5.5	Copper (Cu)	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

6. HYGIENE (to be endorsed)

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969).

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* Temporarily endorsed.

7. LABELLING (to be endorsed)

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

7.1 Name of the Food

7.1.1 All products designated as grapeseed oil must conform to this standard.

7.1.2 Where grapeseed oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency, the name grapeseed oil shall not be used unless qualified to indicate the nature of the process.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purpose of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking

The date of minimum durability of the food shall be declared in clear.

7.8 Bulk Packs

(To be developed).

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods and are subject to endorsement by the Codex Committee on Methods of Analysis and Sampling.

8.1 Determination of Relative Density

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 9-1969, Determination of Relative Density at t/20°C).

Results are expressed as relative density at 20°C/water at 20°C.

8.2 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.B.2, Refractive Index).

Results are expressed as the refractive index relative to the sodium D-line at 40°C (n_D 40°C).

8.3 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2, Saponification Value (I_S)).

Results are expressed as the number of mg KOH/g oil.

8.4 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.7.1, II.D.7.2 and II.D.7.3, The Wijs Method).

Results are expressed as % m/m absorbed iodine.

8.5 Determination of Unsaponifiable Matter

According to the IUPAC (1964) diethyl ether method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.5.1 and II.D.5.3).

Results are expressed as g unsaponifiable matter/kg oil.

8.6 Determination of Erythrodiol Content

(Method to be developed. Italy proposed that method published in Riv. It. Sost. Grasse. Volume 52, September 1975).

8.7 Determination of Fatty Acid Composition 1/

According to the IUPAC Methods II.D.19 and II.D.25.

8.8 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2, Acid Value (I_A)).

Results are expressed as the number of mg KOH required to neutralize 1 g oil.

8.9 Determination of Peroxide Value (I_P)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13, Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.10 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1, Moisture and Volatile Matter).

Results are expressed as % m/m.

8.11 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2, Impurities).

Results are expressed as % m/m.

8.12 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969, Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

1/ To be referred to the Codex Committee on Methods of Analysis and Sampling, (see para 76).

8.13 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

8.14 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC, International Union of Pure and Applied Chemistry Carbamate Method, 24.023-24.028).

Results are expressed as mg copper/kg.

8.15 Determination of Lead*

According to the AOAC (1965) method, after complete digestion, by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048)).

Results are expressed as mg lead/kg.

8.16 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC (Official Methods of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

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* Might be replaced by Atomic Absorption Spectrophotometry in the future.

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APPENDIX X

PROPOSED DRAFT INTERNATIONAL STANDARD FOR EDIBLE BABASSU OIL

(at Step 5 of the Codex Procedure)

1. SCOPE

This standard applies to edible babassu oil but does not apply to babassu oil which must be subject to further processing in order to render it suitable for human consumption.

2. DESCRIPTION

Babassu oil is derived from the kernel of the fruit of several varieties of the palm Attalea funifera.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Identity Characteristics

3.1.1	Relative Density [(25°C/water at 25°C)]	[0.915 - 0.918]
3.1.2	Refractive Index (n_D 40°C)	1.448 - 1.451
3.1.3	Saponification Value (mg KOH/g oil)	245 - 256
3.1.4	Iodine Value (Wijs)	10 - 18
3.1.5	Unsaponifiable Matter	not more than 12 g/kg
3.1.6	Reichert Value	4.5 - 5.5
3.1.7	Polenske Value	8 - 10

[3.1.8 Guideline Fatty acid composition (%) based on GLC

C 8:0	4 - 7.3
C10:0	1.2 - 7.6
C12:0	40 - 55
C14:0	11.6 - 17.4
C16:0	5.2 - 10.8
C18:0	1.8 - 5.5
C18:1	9.0 - 19.2
C18:2	1.4 - 6.6]

3.2 Quality Characteristics

3.2.1 Colour: Characteristic of the designated product.

3.2.2 Odour and taste: Characteristic of the designated product and free from foreign and rancid odour and taste.

3.2.3 Acid Value:

- non-virgin oil not more than 0.6 mg KOH/g

3.2.4 Peroxide Value: not more than 10 milliequivalents peroxide oxygen/kg oil.

4. FOOD ADDITIVES

4.1 Colours

The following colours are permitted for the purpose of restoring natural colour lost in processing or for the purpose of standardizing colour, as long as the added colour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.

		Maximum level of use
4.1.1	Beta-carotene	Not limited
4.1.2	Annatto*	
4.1.3	Curcumin*	
4.1.4	Canthaxanthine	
4.1.5	Beta-apo-8'-carotenal	
4.1.6	Methyl and ethyl esters of Beta-apo-8'-carotenoic acid	

* Temporarily endorsed.

4.2 Flavours

Natural flavours and their identical synthetic equivalents, except those which are known to represent a toxic hazard, and other synthetic flavours approved by the Codex Alimentarius Commission are permitted for the purpose of restoring natural flavour lost in processing or for the purpose of standardizing flavour, as long as the added flavour does not deceive or mislead the consumer by concealing damage or inferiority or by making the product appear to be of greater than actual value.*

		Maximum level of use
4.3	Antioxidants	
4.3.1	Propyl, octyl and dodecyl gallates*	100 mg/kg, individually or in combination
4.3.2	Butylated hydroxytoluene (BHT)*	200 mg/kg, individually or in combination
4.3.3	Butylated hydroxyanisole (BHA)*	
4.3.4	Any combination of gallates with BHA or BHT, or both*	200 mg/kg, but gallates not to exceed 100 mg/kg
4.3.5	Ascorbyl palmitate	500 mg/kg, individually or in combination
4.3.6	Ascorbyl stearate	
4.3.7	Natural and synthetic tocopherols	Not limited
4.3.8	Dilauryl thiodipropionate	200 mg/kg
4.4	Antioxidant Synergists	
4.4.1	Citric acid	Not limited
4.4.2	Sodium citrate	Not limited
4.4.3	Isopropyl citrate mixture	100 mg/kg, individually or in combination
4.4.4	Monoglyceride citrate	
4.4.5	Phosphoric acid	
4.5	Anti-foaming Agent	
	Dimethyl polysiloxane (syn. Dimethyl silicone) singly or in combination with silicon dioxide	10 mg/kg
5.	CONTAMINANTS	
5.1	Matter Volatile at 105°C	0.2% m/m
5.2	Insoluble Impurities	0.05% m/m
5.3	Soap Content	0.005% m/m
5.4	Iron (Fe)	1.5 mg/kg
5.5	Copper (Cu)	0.1 mg/kg
5.6	Lead (Pb)*	0.1 mg/kg
5.7	Arsenic (As)	0.1 mg/kg

6. HYGIENE (to be endorsed)

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969).

7. LABELLING (to be endorsed)

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

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* Temporarily endorsed.

7.1 Name of the Food

7.1.1 All products designated as babassu oil must conform to this standard.

7.1.2 Where babassu oil has been subject to any process of esterification or to processing which alters its fatty acid composition or its consistency, the name babassu oil shall not be used unless qualified to indicate the nature of the process.

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion.

7.2.2 A specific name shall be used for ingredients in the list of ingredients except that class titles may be used in accordance with sub-section 3.2(c)(ii) of the General Standard for the Labelling of Prepackaged Foods.

7.3 Net Contents

The net contents shall be declared in accordance with sub-section 3.3(a) of the General Standard for the Labelling of Prepackaged Foods.

7.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.5 Country of Origin

7.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purpose of labelling.

7.6 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.7 Date Marking

The date of minimum durability of the food shall be declared in clear.

7.8 Bulk Packs

(To be developed).

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling referred to hereunder are international referee methods and are subject to endorsement by the Codex Committee on Methods of Analysis and Sampling.

8.1 Determination of Relative Density

/According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 9-1969, Determination of Relative Density at t/20°C).

Results are expressed as relative density at 40°C/water at 20°C./

8.2 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2, Refractive Index).

Results are given as the refractive index relative to the sodium D-line at 40°C ($\underline{n}_D 40°C$).

8.3 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.2, Saponification Value (I_S)).

Results are expressed as the number of mg KOH/g oil.

8.4 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.7.1, II.D.7.2 and II.D.7.3, The Wijs Method).

Results are expressed as % m/m absorbed iodine.

8.5 Determination of Unsaponifiable Matter

According to the IUPAC (1964) diethyl ether method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.5.1 and II.D.5.3).

Results are expressed as g unsaponifiable matter/kg oil.

8.6 Determination of Reichert and Polenske Values

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.9, Soluble and Insoluble Volatile Acids).

8.7 Determination of Fatty Acid Composition 1/

According to the IUPAC Methods II.D.19 and II.D.25.

8.8 Determination of Acid Value (I_A)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.1.2, Acid Value (I_A)).

Results are expressed as the number of mg KOH required to neutralize 1 g oil.

8.9 Determination of Peroxide Value (I_P)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.D.13, Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.10 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.1.1, Moisture and Volatile Matter).

Results are expressed as % m/m.

8.11 Determination of Insoluble Impurities

According to the IUPAC Standard Methods of Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II.C.2, Impurities).

Results are expressed as % m/m.

8.12 Determination of Soap Content

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 13-1969, Determination of Soap Content).

Results are expressed as % m/m sodium oleate.

8.13 Determination of Iron*

According to the FAO/WHO Codex Alimentarius Method (FAO/WHO Methods of Analysis for Edible Fats and Oils, CAC/RM 14-1969, Determination of Iron Content).

Results are expressed as mg iron/kg.

1/ To be referred to the Codex Committee on Methods of Analysis and Sampling (see para 76).

* Might be replaced by Atomic Absorption Spectrophotometry in the future.

8.14 Determination of Copper*

According to the AOAC (1965) method (Official Methods of Analysis of the AOAC International Union of Pure and Applied Chemistry Carbamate Method, 24.023-24.028).

Results are expressed as mg copper/kg.

8.15 Determination of Lead*

According to the AOAC (1965) method, after complete digestion, by the colorimetric dithizone determination procedure (Official Methods of Analysis of the AOAC, 1965, 24.053 (and 24.008, 24.009, 24.043j, 24.046, 24.047 and 24.048).

Results are expressed as mg lead/kg.

8.16 Determination of Arsenic

According to the colorimetric silver diethyldithiocarbamate method of the AOAC,(Official Methods of Analysis of the AOAC, 1965, 24.011-24.014, 24.016-24.017, 24.006-24.008).

Results are expressed as mg arsenic/kg.

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* Might be replaced by Atomic Absorption Spectrophotometry in the future.