



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE
ORGANIZACION DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y LA ALIMENTACION
Rome, Viale delle Terme di Caracalla. Cables: FOODAGRI, Rome. Tel. 5797



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTÉ
Genève, Palais des Nations. Câbles: UNISANTÉ, Genève. Tél. 33 10 00

ALINORM 65/11
August 1965

JOINT FAO/WHO PROGRAM ON FOOD STANDARDS
CODEX ALIMENTARIUS COMMISSION
Third Session, Rome, 19-29 October 1965

CODEX COMMITTEE ON FATS AND OILS

REPORT OF LONDON MEETING 6th-8th APRIL, 1965

1. The Codex Committee on Fats and Oils held its second meeting from 6th to 8th April, 1965 in London under the chairmanship of Mr. J. H. V. Davies of the United Kingdom. The meeting was attended by 36 delegates and observers, from 16 Governments and 7 International Organisations. A list of those participating is attached at Appendix I. (omitted)
2. The Committee noted the comments which had been received on the definition contained in paragraph 5 of the Report of its first meeting. The Committee agreed that this definition was not entirely satisfactory, particularly because of ambiguity in the use of the term 'edible'. It was recognised, however, that a general definition was not essential at the present stage of the Committee's work since the detailed standards for individual products would contain specific definitions. It was also recognised that further consideration might have to be given to a definition at a later stage in the Committee's work.

Form of Standards

3. The Committee considered the form that standards for the Codex should take and agreed that these should deal with products sold directly to the consumer and with ingredients in the form that they were used in products sold directly to the consumer. They agreed to consider standards prepared in this form at their next meeting. Such standards would be drawn up on the basis of five broad headings, Definition - which might include the source of oil, limits of fatty acid chain lengths, degree of unsaturation, configuration of glycerides and, where appropriate, specific identity characteristics - Quality Characteristics, Additives, Contaminants and Specific Tests. They would include among others the general characteristics listed in the attachment to Document Codex/Fats and Oils/English/11. * Account should also be taken of the existing legislation in member countries.

*See Appendix II
28894/E

Specifications of Identity for Crude Fats and Oils

4. The Committee gave further consideration to the specifications of identity for crude fats and oils drawn up at their first meeting and agreed to those in Appendix III to this report. They further agreed that these specifications should be circulated for the information of Governments as indicating the characteristics of most specimens of each fat and oil, as defined, but considered that they should not be regarded as comprehensive definitions which would embrace every genuine sample of those fats and oils. The Committee further recognised that actual values for the identity characteristics of individual oils and fats often depended on the environmental conditions of the plants and animals from which they were produced. Future ranges of the values might depend, therefore, on the extent to which changes occurred in the current pattern of environmental conditions.

5. The Committee agreed to defer its consideration of the specifications for Premier Jus until it could consider it in conjunction with specifications for various types of tallow. The Committee decided not to proceed for the time being with the specifications for crude herring, menhaden, pilchard and anchovy oils. The wide range of values encountered for the identity characteristics of these oils meant that specifications for them would be of limited value. Further information was required before adequate specifications could be drawn up.

6. The Committee decided, with reference to the specifications for Babassu Oil, Coconut Oil and Palm Kernel Oil, that the International Union of Pure and Applied Chemistry should be asked to consider extending their method to include a test for Kirschner value. The delegate of the Federal Republic of Germany drew attention to the value of the methods for determination of A and B numbers as prepared by IUPAC. The Committee decided not to refer to these methods in the specifications at the present time since inadequate information is available on the ranges of A and B values to be expected for the various oils and fats under consideration.

7. The delegate of the Federal Republic of Germany reserved the position of his Government on the revised ranges for Unsaponifiable Matter and Iodine value contained in the specification for Rapeseed Oil.

8. Some delegations considered that the inclusion of a Solid Fat Index and a Bochner Value would be of value as specific identity tests for pure, unrefined lard. The Committee decided that further information, particularly about the ranges to be specified, was necessary before they could reach any firm conclusion on these points. It was agreed that the U.K. Secretariat should seek further information from the International Standards Organization Sub-Committee on Meat Products (S.C.6 of ISO/TC/34) who, it was understood, was working on methods of analysis for animal fats. It was also agreed that delegations should supply the Secretariat with any information they had available on these two characteristics.

Identification of Fats and Oils by Chromatography

9. Some delegations considered that chromatographic techniques were now sufficiently advanced for them to be included as a means to facilitate the identification of individual fats and oils. The Committee considered that the next stage should be a collaborative examination, on an international scale, of reference samples of fats and oils of known origin using chromatographical

techniques including gas liquid chromatography and thin layer chromatography. The Committee discussed the possibility of organising collaborative trials so as to obtain information quickly. It was agreed, however, that it would be preferable to refer the matter to the Codex Committee on Methods of Analysis and to ask them to consider organising the necessary work as a matter of urgency, taking into account the work done by IUPAC which was expected to publish a standard procedure for gas liquid chromatography by July 1965.

Future Work of the Committee

10. The Committee agreed, in view of the decision taken in paragraph 3 above, to ask the United Kingdom Secretariat to produce draft standards, in the agreed form for circulation to Members and for consideration at the next meeting of the Committee, covering the following products for direct human consumption:-

Lard and Rendered Pork Fat
Premier Jus
Edible Tallows
Soya Bean Oil
Arachis Oil
Cottonseed Oil
Sunflower Seed Oil
Rapeseed Oil
Maize Oil
Sesame Seed Oil
Safflower Seed Oil

It was also agreed that delegations who wished to make preliminary comments either on the form of these standards or on their content should send their views to the United Kingdom Secretariat not later than 1st June, 1965.

11. The Committee recognised the importance of giving early attention to the preparation of standards for "cooking fats". They considered, however, that, since these would almost certainly require a different type of standard to that required for the products referred to in paragraph 10 above and would involve much more complex problems, it would be impracticable to attempt to consider a detailed standard at its next meeting. It was agreed that, as a first step, the United Kingdom Secretariat should prepare a paper for the next meeting which would give a general indication of the extent of the problems involved and of the types of products to be dealt with.

12. Delegations who had not already done so were asked to send details of their countries' regulations and standards, applying to the products listed in paragraphs 10 and 11, to the United Kingdom Secretariat by 1st June, 1965.

Margarine

13. The Committee noted the decision by the Codex Alimentarius Commission at its Second Session to extend the Committee's terms of reference to include Margarine. It further noted that the draft standard prepared by the International Federation of Margarine Associations had not so far been referred to it. A decision whether the draft standard should be referred to the Committee or direct to the Commission would be taken by the Executive Committee of the Commission when the standard had been submitted to it by I.F.M.A.

Olive Oil

14. The Committee finally considered what action was necessary following the decision by the Codex Alimentarius Commission at its Second Session to extend the Committee's terms of reference to include Olive Oil. In view of the Commission's request that further work on a Codex standard for Olive Oil should be undertaken in collaboration with the International Olive Oil Council, the Committee asked the United Kingdom Secretariat to write, on its behalf, to the Council and to the Members of the Commission with a significant production of olive oil, to obtain their views on the form standards should take so that a suitable standard could be drafted.

JOINT FAO/WHO CODEX ALIMENTARIUS COMMISSION
COMMITTEE ON FATS AND OILS

DRAFT STANDARDS FOR FATS AND OILS
FOR DIRECT HUMAN CONSUMPTION

1. In order to meet the aims of the Codex Alimentarius Commission, the United Kingdom Secretariat suggests that the following products warrant the preparation of standards for eventual inclusion in the Codex. The list is intended to be a first selection and the Committee will no doubt wish to suggest other products for further study.

Lard
Margarine
Tallow
Cooking Fats
Olive Oil

The following refined vegetable oils:

Arachis
Cottonseed
Maize
Rapeseed
Safflower
Sesame
Soya Bean
Sunflower

2. A form which the standards for the refined vegetable oils should take is suggested in the attached Sheet. It will be seen that a division of the specifications into three parts is suggested. The first part would cover the general characteristics common to all these oils and the agreed ranges for which would apply to all of them. The second part relates to those characteristics the ranges for which would apply only to the specific oil. The third part relates to specific tests applied to each oil to ensure non-adulteration.

PROPOSED DRAFT STANDARD

Definition:

Specifications:

(a) General Characteristics

Matter Volatile at 105°C (%)
Impurities (%)
Acid Value (mg. KOH/g. oil)
Peroxide Value (ml $\frac{N}{500}$ thiosulphate/g)

Antioxidants

Mineral Oil

Metallic Impurities

Arsenic (As)
Lead (Pb)
Copper (Cu)
Iron (Fe)

(b) Specific Characteristics

Colour

Odour

Taste

Relative Density (20°C/water at 20°C)
Saponification Value (mg. KOH/g. oil)
Unsaponifiable Matter (%)
Iodine Value (Wijs)

(c) Specific Tests for

Cotton Seed Oil

Sesame

Arachis

Reichert Value

Polenske Value

Kirschner Value

Titre (°C)

CODEX ALIMENTARIUS COMMISSIONCODEX COMMITTEE ON FATS AND OILSIndex to Draft Specification for Crude Oils and Fats*

<u>Name of Oil</u>	<u>Sheet No.</u>
ARACHIS (syns. Peanut, Groundnut).	1
BABASSU	2
COCONUT	3
COTTONSEED	4
GRAPESEED (syns. Grape pip, Raisin seed)	5
MAIZE (syn. Corn)	6
MUSTARD SEED	7
PALM	8
PALM KERNEL	9
RAPESEED including TURNIP RAPE, JAMBA, COLZA, RAVISON, SARSON AND TORIA.	10
SAFFLOWER SEED (syn. Carthamus, Kurdee).	11
SESAME SEED (syn. Gingelly).	12
SHEA NUT (syn. Shea butter).	13
SOYA BEAN (syn. SOYBEAN).	14
SUNFLOWER SEED	15
LARD	16
WHALE	17

*The Draft Specifications in this Appendix are for the information purposes only: see paragraph 4 of the Report.

NAME OF OIL: ARACHIS (syns. Peanut, Groundnut).

TYPE OF OIL: CRUDE

DEFINITION: The oil derived from groundnuts (the seeds of Arachis hypogaea)

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.914 - 0.917
<u>REFRACTIVE INDEX</u> ($n_D^{40^\circ C}$)	1.460 - 1.465
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	188 - 196
<u>UNSAAPONIFIABLE MATTER:</u> (%)	1.0 (maximum)
<u>IODINE VALUE:</u> (Wijs).	80 - 105
<u>ARACHIDIC AND HIGHER FATTY ACIDS CONTENT:</u> (%)	4.8 (minimum) as determined by :-

(a) Modified Renard Test.
Section 26.055, Official
Methods of Analysis of
the Association of
Official Agricultural
Chemists, Ninth
Edition (1960).

cf
(b) Arachis Oil Test (Evers)
Page 97, British
Standard 684: 1958.

NAME OF OIL: BABASSU

TYPE OF OIL: CRUDE

DEFINITION: The oil derived from the kernels of the fruit of the Babassu Palm
(Attalea funifera or Orbignya speciosa).

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>	
<u>RELATIVE DENSITY:</u> (40°C/water at 20°C)	0.905-0.908	
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.448-1.451	
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	245-255	
<u>UNSAAPONIFIABLE MATTER:</u> (%)	1.2 (maximum)	
<u>REICHERT VALUE:</u>	5.5-6.5) IUPAC method except that for) Reichert Value 0.1 N barium) hydroxide solution be used for) titration in place of 0.1 N NaOH.))
<u>POLENSKE VALUE:</u>	10-13)
<u>KIRSCHNER VALUE:</u>	1	<u>Suggested method</u> page 70, British Standard 684: 1958
<u>IODINE VALUE:</u> (Wijs)	10-18	

NAME OF OIL: COCONUTTYPE OF OIL: CRUDEDEFINITION: The oil derived from the dried whole kernel (copra) of the coconut
(the fruit of Cocos nucifera)IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>	
<u>RELATIVE DENSITY:</u> (40°C/water at 20°C)	0.909-0.914	
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.448-1.450	
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	248-264	
<u>UNSATURATED MATTER:</u> (%)	0.8(maximum)	
<u>REICHERT VALUE:</u>	6-8) IUPAC method except that) for Reichert Value) 0.1N barium hydroxide) solution to be used for) titration, in place of) 0.1N NaOH.
<u>POLENSKE VALUE:</u>	14-18	
<u>KIRSCHNER VALUE:</u>	1.6-1.9	<u>Suggested method</u> page 70, British Standard 684:1958
<u>IODINE VALUE:</u> (Wijs)	7-11	

NAME OF OIL: COTTONSEED

TYPE OF OIL: CRUDE

DEFINITION: The oil derived from the seeds of various cultivated species of Gossypium.

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>	
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.918-0.926	
<u>REFRACTIVE INDEX:</u> ($n_D^{40°C}$)	1.458-1.463	
<u>SAPONIFICATION VALUE:</u> (mg. KOH/g. oil)	189-198	
<u>UNSAAPONIFIABLE MATTER:</u> (%)	1.5 (maximum)	
<u>IODINE VALUE</u> (Wijs)	99-115	
<u>SPECIFIC IDENTITY TEST</u>	Holphen Test (A.O.C.S. Official Method Cb. 1-25).

NAME OF OIL: GRAPESEED (Syns. Grape pip,
Raisin seed)

TYPE OF OIL: CRUDE

DEFINITION: The oil derived from the seeds of the grape (Vitis vinifera)

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.920-0.927
<u>REFRACTIVE INDEX:</u> ($n_D^{40°C}$)	1.465-1.468
<u>SAPONIFICATION VALUE:</u> (mg. KOH/g. oil)	175-200
<u>UNSAPONIFIABLE MATTER:</u> (%)	2.0 (maximum)
<u>IODINE VALUE:</u> (Wijs)	94-143

NAME OF OIL: MAIZE (syn. Corn) TYPE OF OIL: CRUDE

DEFINITION: The oil derived from maize germ (the embryos of Zea mays L.)

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.917-0.925
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.465-1.468
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	187-195
<u>UNSATURATED MATTER:</u> (%)	2.8 (maximum)
<u>IODINE VALUE:</u> (Wijs)	103-128

NAME OF OIL: MUSTARD SEED

TYPE OF OIL: CRUDE

DEFINITION: The oil derived from the seeds of the white mustard (Brassica alba), the brown mustard (Brassica juncea) and of the black mustard (Brassica nigra).

IDENTITY CHARACTERISTICS

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.915 - 0.921
<u>REFRACTIVE INDEX:</u> ($n_D^{40°C}$)	1.461 - 1.469
<u>SAPONIFICATION VALUE:</u> (mg. KOH/g.oil)	170 - 184
<u>UNSAAPONIFIABLE MATTER:</u> (%)	1.5 (maximum)
<u>IODINE VALUE:</u> (Wij s)	92 - 125

NAME OF OIL: PALMTYPE OF OIL: CRUDEDEFINITION: The oil derived from the outer pulp of the fruit of the oil palm (Elaeis guineensis)IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (40°C/water at 20°C)	0.904 - 0.908
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.453 - 1.459
<u>TITRE:</u> (°C)	40 - 47
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	195 - 210
<u>UNSAPONIFIABLE MATTER:</u> (%)	1.0 (maximum)
<u>IODINE VALUE:</u> (Wijs)	46 - 57

NAME OF OIL: PALM KERNELTYPE OF OIL: CRUDEDEFINITION: The oil derived from palm kernels (the kernels of the fruit of the oil palm (Elaeis guineensis))IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>	
<u>RELATIVE DENSITY:</u> (40°C/water at 20°C)	0.898-0.912	
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.449 - 1.452	
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	242 - 255	
<u>UNSATURATED MATTER:</u> (%)	1.0 (maximum)	
<u>REICHERT VALUE:</u>	4 - 7	} IUPAC method except that for Reichert Value 0.1N barium hydroxide solution be used for titration, in place of 0.1N NaOH
<u>POLENSKE VALUE:</u>	9 - 12	
<u>KIRSCHNER VALUE:</u>	0.8 - 1.2	} Suggested method page 70, British Standard 684: 1958
<u>IODINE VALUE:</u> (Wijs)	13 - 23	

NAME OF OIL: RAPESEED including TURNIP RAPE,
JAMBA, COLZA, RAVISON,
SARSON and TORIA. TYPE OF OIL: CRUDE

DEFINITION: The oil derived from the seeds of Brassica campestris, and varieties,
Brassica napus and Brassica tournefortii

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.910 - 0.920
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.465 - 1.469
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	168 - 181
<u>UNSAAPONIFIABLE MATTER:</u> (%)	2.0 (maximum)
<u>IODINE VALUE:</u> (Wt.js)	97 - 120
<u>CRISMER VALUE</u> (by AOCs Official Method Cb4-35)	80 - 85

NAME OF OIL: SAFFLOWER SEED (Syns. Carthamus, Kurdee). TYPE OF OIL: CRUDE

DEFINITION: The oil derived from safflower seeds
(the seeds of Carthamus tinctorius).

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.922-0.927
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.467-1.469
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	186-198
<u>UNSAAPONIFIABLE MATTER:</u> (%)	1.5 (maximum)
<u>IODINE VALUE:</u> (Wijs)	135-150

NAME OF OIL: SESAME SEED (syn. Gingelly)TYPE OF OIL: CRUDEDEFINITION: The oil derived from sesame seeds (the seeds of Sesamum indicum L.)IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>	
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.915 - 0.923	
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.465 - 1.469	
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	187 - 195	
<u>UNSAPONIFIABLE MATTER:</u> (%)	2.0 (maximum)	
<u>IODINE VALUE:</u> (Wijs.)	104 - 120	
<u>SPECIFIC IDENTITY TEST:</u>	<u>Suggested methods</u>
		a) <u>Modified Villavechia Test</u>
		American Oil Chemists' Society Official Method Cb2-40 <u>or</u>
		b) <u>Sesame Oil Test</u> (Baudouin)
		page 96, British Standard 684: 1958

NAME OF OIL: SHEA NUT (syn. Shea butter).

TYPE OF OIL: CRUDEDEFINITION: The oil derived from the kernels of the nut of Bassia (or Butyrospermum) Parkii.IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (40°C/water at 20°C)	0.898 - 0.909
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.463 - 1.467
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	178 - 198
<u>UNSATURATED MATTER:</u> (%)	10.0 (maximum)
<u>IODINE VALUE:</u> (Wijs)	52 - 70

NAME OF OIL: SOYA BEAN (syn. SOYBEAN)

TYPE OF OIL: CRUDE

DEFINITION: The oil derived from soya beans (the seeds of
Glycine max L or Glycine hispida)

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.919-0.925
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.466-1.470
<u>SAPONIFICATION VALUE:</u> (mg. KOH/g. oil)	189-195
<u>UNSAPONIFIABLE MATTER:</u> (%)	1.5(maximum)
<u>IODINE VALUE:</u> (Wijs)	120-143

NAME OF OIL: SUNFLOWER SEEDTYPE OF OIL: CRUDEDEFINITION: The oil derived from sunflower seeds
(the seeds of Helianthus annuus)IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.918-0.923
<u>REFRACTIVE INDEX:</u> ($n_D^{40^\circ C}$)	1.467-1.469
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	188-194
<u>UNSAAPONIFIABLE MATTER:</u> (%)	1.5(maximum)
<u>IODINE VALUE:</u> (Wijs)	110-143

NAME OF OIL: LARD.TYPE OF OIL: PURE, UNREFINED.

DEFINITION: The fat rendered from fresh, clean, sound fatty tissues from swine (sus scrofa) in good health at the time of slaughter and fit for human consumption as determined by a competent authority recognised in national legislation. The tissues do not include bones, detached skin, head skin, ears, tails, organs, windpipes, large blood vessels, scrap fat, skimmings, settlings, pressings and the like, and are reasonably free from muscle-tissue and blood.

IDENTITY CHARACTERISTICS:

	USUAL RANGE
<u>RELATIVE DENSITY:</u> ($40^{\circ}\text{C}/\text{water at } 20^{\circ}\text{C}$)	0.896-0.904
<u>REFRACTIVE INDEX:</u> ($n_D^{40^{\circ}\text{C}}$)	1.448-1.460
<u>TITRE:</u> ($^{\circ}\text{C}$)	32 - 45
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	192 - 203
<u>UNSAPONIFIABLE MATTER:</u> (%)	1.2 (maximum)
<u>IODINE VALUE:</u> (Ijjs)	45 - 70

NAME OF OIL: WHALE

DEFINITION: The oil derived from whales (Mystacoceti), excluding sperm whales (Odontoceti).

IDENTITY CHARACTERISTICS:

	<u>USUAL RANGE</u>
<u>RELATIVE DENSITY:</u> (20°C/water at 20°C)	0.914-0.924
<u>REFRACTIVE INDEX:</u> ($n_D^{40°C}$)	1.463-1.467
<u>SAPONIFICATION VALUE:</u> (mg.KOH/g.oil)	188-202
<u>UNSAPONIFIABLE MATTER:</u> (%)	2.0 (maximum)
<u>IODINE VALUE:</u> (Wijs)	105-137