

1. The samplers mentioned in this report be tentatively approved by the society.
2. The standard methods of sampling commercial oils and fats be rewritten and made a separate section of our methods.
3. The sampling methods be revised yearly and that these methods be drawn up to apply to all commercial oils and fats, and that whenever official samples are submitted these should be taken according to standard methods approved and published by the A. O. C. S.

SAMPLING COMMITTEE:

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Report of the Oil Characteristics Committee

THE following proposed American Oil Chemists' Society Specifications for cod liver, castor, sesame, rapeseed, corn and peanut oils, have been passed upon by the Oil Characteristics Committee, and are now available as a report for acceptance by the Uniform Methods Committee of the American Oil Chemists' Society.

All of these oils have been in use for sometime as standards by the British Standards Institute. In addition, those for castor and cod liver oils are contained in the U. S. Pharmacopeia.

With slight modification to conform to our own policy, the enclosed specifications have been provisionally adopted. Besides tabulating the usual items of analysis, it was felt that a brief summary of characteristic properties or of specific tests would be useful additions to the list of constants.

The Procedure of the A. O. C. S. is implied in all tests except where otherwise noted. Certain tests are given their commonly known names although the method may be A. O. C. S. nonetheless. Certain other tests are designated which though unofficial as yet, have recognized standing, and it is hoped will later be incorporated in the book of methods.

All members are again requested to note any exceptions not within the range of values given in this report and to call the chairman's attention to these.

A. O. C. S. SPECIFICATIONS* FOR CASTOR OIL

Specific Gravity—25°/25°C.....	0.945 to 0.965
nD @ 25°C.....	1.473 to 1.477
Iodine Value (Wijs).....	81 to 91
Sap. Value.....	176 to 187
Unsap. Matter (F.A.C.).....	Max. 1.0%
Acetyl Value (André-Cook).....	Min. 144

The trade determines the quality of castor oil by its color, clearness and acidity. No. 1 is low in acidity, brilliantly clear and nearly colorless. No. 3 varies in color from yellow to brown or dark green. No. 2 grade is no longer recognized by the trade.

Characteristics: Highest specific gravity and viscosity of the common vegetable oils. High Acetyl value. Complete solubility in 95% alcohol and practical insolubility in petroleic ether. No "stearine" in cold test at 0° C.

A. O. C. S. Specification for Cod Liver Oil

Specific Gravity @ 25°/25°C.....	0.916 to 0.925
nD @ 25°C.....	1.474 to 1.478
Iodine Value (Wijs).....	140 to 180
Sap. Value.....	180 to 190
Unsap. Matter (A. O. C. S.).....	1.7% max.
(U. S. P.).....	1.3% max. for medicinal grade

Characteristics: Liver Oil Reaction with chloroform and sulphuric acid. (U.S.P.)

A. O. C. S. SPECIFICATION for Corn (Maize) Oil

Specific Gravity 25°/25°C.....	0.915 to 0.920
nD @ 25°C.....	1.470 to 1.474
Iodine Value (Wijs).....	103 to 128
Sap. Value.....	187 to 193
Unsap. Matter (F. A. C.).....	Max. 2.0%
Titre.....	14° to 20°

A. O. C. S. Specifications for Peanut (Arachis) Oil

Specific Gravity @ 25°/25°C.....	0.910 to 0.915
nD @ 25°C.....	1.467 to 1.470
Iodine Value (Wijs).....	84 to 100
Sap. Value.....	188 to 195
Unsap. Matter (FAC).....	1.0% Max.
Titre.....	26° to 32°C

Characteristics: The Bellier Qualitative test and the Renard Quantitative test for crude arachidic acid (mixture of lignoceric and arachidic), which is the characteristic fatty acid for peanut oil.

A. O. C. S. Specifications for Rapeseed Oil

Specific Gravity @ 25°/25°C.....	0.906 to 0.910
nD @ 25°C.....	1.470 to 1.474
Iodine Value (Wijs).....	97 to 108
Sap. Value.....	170 to 180
Unsap. Matter (F. A. C.).....	Max. 1.5%
Titre.....	11.5° to 15.0°C
Viscosity (Saybolt Universal @ 100°F).....	Min. 210 seconds
Flash Point (open cup).....	Min. 550°F
Ether Insoluble Bromides (Steele-Washburn).....	Max. 4%
Cold Test (A.S.T.M.).....	Max. 10°F

Characteristics: Low saponification value, very low cold test, high viscosity. Its characteristic fatty acid is erucic which is unsaturated and yet is found in the solid or saturated fatty acid fraction of the lead-salt-ether method of separating liquid from solid acids. The iodine value of such solid acids should be over 60, whereas the usual iodine value of such solid acids in the case of any commercial oil (except mustard) range from 2 to 10. The Crismer Turbidity Test is useful in indicating the presence of rapeseed oil in olive oil.

A. O. C. S. Specifications for Sesame Oil

Specific Gravity 25°/25°C.....	0.914 to 0.919
nD @ 25°C.....	1.470 to 1.474
Iodine Value (Wijs).....	103 to 116
Sap. Value.....	188 to 195
Unsap. Matter (F. A. C.).....	1.8% max.
Titre.....	20°—24°C

Characteristics: Red reaction with conc. HCl and sugar (Baudouin) or furfural (Villavecchia).

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