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**AUSTRALIAN  
OILSEEDS FEDERATION  
INCORPORATED**

**Technical and Quality  
Standards**

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## **IMPORTANT NOTICE**

This Manual is compiled and the text maintained by the Australian Oilseeds Federation Inc. to provide an industry reference for establishing Quality and Trading Standards and Methods of Analysis for the purpose of uniformity within the Australian oilseed industry.

The AOF will maintain a Register of Manual Owners and will ensure all Owners are informed of any amendments.

The AOF does not accept any other responsibility.

## **DISCLAIMER**

“This manual lists the specifications and standards which are agreed to by both the buyer and the seller on a contractual basis. However, this does not absolve either party from complying with the relevant human food and stock feed regulations which can apply at either the federal and/or state levels.”

# Procedure for Amendments or Updates

A request for a change or amendment to a Method or Standard must be made on the appropriate Form and forwarded to the Secretary of the AOF standards and QA Group for consideration by the Group for appropriate action.

Procedures will be updated as necessary.

All change must be approved by the Standards and QA Group and changes registered in the Minutes of the Meetings.

## Request for Change of Documents

Proposer.....Date: / /

Doc No	Section	Amendment	Urgency

Signed: Proposer/Secretary

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# **AOF Technical and Quality Standards and Methods of Analysis for Oilseeds and Vegetable Oils**

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# **Section 1 Part 1**

# **TECHNICAL AND QUALITY STANDARDS**

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# AOF Technical and Quality Standards

## **Section 1 Part 1 Trading Standards**

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# AOF 1-1

## Oilseed Quality Standards

This document replaces AOF Oilseed Quality Standards, 1999 and Commodity Trading—Oilseeds

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## 1.0 SCOPE

- 1.0.1 Oilseeds and Oilseed products (i.e. oil, meal and hulls) must comply with the relevant appropriate stockfeed or agricultural regulations.
- 1.0.2 In particular Oilseeds and Oilseeds products must comply with the maximum residue levels (MRLs) listed in both the [FSANZ Food Standard Code](#) and the [MRL Standard](#) (maximum residue limits in food and animal feedstuffs).
- 1.0.3 Specifications and price adjustments recorded are applicable to the analysis of Official Samples taken and tested according to the prescribed methods. Sampling procedures must be followed to ensure that the Official Sample used for analysis is representative of the consignment.
- 1.0.4 For domestic trading, the Official Sample shall be taken by the buyer or his appointed agent at the receipt point at the time of receipt of the lot, or as otherwise agreed to. Samples shall be retained by the buyer for at least two months after receipt.

## 2.0 DEFINITIONS

### 2.1 Oil Content

The oil content shall be that quantity of oil contained in the sample of clean seed as determined by the relevant prescribed solvent extraction method or by any rapid test procedure whose calibration is based thereon. Oil contents shall be expressed to the nearest 0.1%, clean seed basis.

- 2.1.1 In cases of dispute, the prescribed solvent extraction method shall be the basis for decision unless otherwise agreed to by mutual decision.
- 2.1.2 The results of oil content re-tests shall be adjusted to the basis of the moisture content at the time of delivery but only where oven moisture is available on the original test.

2.1.3 Oil content (delivered) = Oil content (retest)  $\times \frac{(100 - \text{delivered moisture})}{(100 - \text{retest moisture})}$

### 2.2 Moisture Content

To be determined on the seed as received. Rapid direct reading moisture testers shall be used only as a guide for acceptance or rejection of a consignment by the crusher or his agent. Where a moisture deduction is to be made from a receipt account, the results of the prescribed oven test method expressed to the nearest 0.1%, as received basis, shall be applied. Moisture deductions shall only be based on the results obtained in this way.

### 2.3 Impurities

The impurity content shall be expressed to the nearest 0.1% on an as received basis. For cottonseed, impurities shall consist of foreign matter other than seed material, where seed material includes cotton fibre attached to the seed coat.

For other commodities, impurities shall consist of the following:

Impurities shall consist of the following:

- a. Foreign matter (organic or inorganic) other than seeds of the basic species. The outer peanut shells or hulls are classified as impurities except when shell and kernel are intact, but not hulls of the other seeds, such as safflower and sunflower hulls. When seed is present in an unthreshed state, the seed and attached surrounding plant material shall be treated as impurity.
- b. All material, including seed and seed material of the basic species, passing the screens prescribed as follows:
  - Canola ..... 1.0 mm round hole screen
  - Linola ..... 1 mm round hole screen
  - Linseed ..... 1 mm round hole screen
  - Peanut ..... 2 mm round hole screen
  - Rapeseed ..... 1.0 mm round hole screen
  - Safflower ..... 2 mm round hole screen
  - Soybean ..... 3.175mm round hole screen
  - Sunflower ..... 2 mm round hole screen

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## **2.4 Clean Seed**

Clean seed shall include all seed of the type being tested other than that defined under 2.3: Impurities.

## **2.5 Damaged Seed - General Damage, Green Seed, Sprouted Seed**

Damaged seed shall be seed that is heat damaged, frosted, green, weather damaged or in any way inherently damaged.

2.5.1 Seeds which are surface damaged only shall be classified sound. Seeds which are immature from any cause are considered damaged.

2.5.2 Damaged seed shall be taken as a percentage of the clean seed expressed to the nearest 0.1%.

2.5.3 *Sprouted Seed*: (also designated "shot" or "sprung"). Seed that gives any indication of the commencement of growth shall be classified as being sprouted and shall be subject to the appropriate penalties.

2.5.4 Canola and Soybeans are classified green when a cross-section shows an intense green colour. In relation to canola, the industry is looking to move towards a chlorophyll test as the standard.

2.5.5 For edible soybeans

- damaged seed includes soybeans and pieces of soybean which are frosted, badly weather stained, field fungi discoloured (includes purple stain), weed stained (includes nightshade purple stain), heat damaged, diseased or insect damaged or otherwise materially damaged.
- Foreign material/admixture is all material including small foreign seeds, other than whole, split or broken soybean seed or hulls

## **2.6 Broken or Split Seed**

Broken or split seed shall be taken as a percentage of clean seed expressed to the nearest 0.1%.

2.6.1 *Soybeans*

Broken or split soybeans shall be those beans not otherwise damaged that are three quarters of a bean or less in size (except fines classified as impurities. See 2.3: Impurities). Separated hulls shall be included.

2.6.2 *Other Seeds*

For seeds other than soybeans and peanuts, all hulls, kernels or parts thereof, not otherwise damaged shall be classified as splits or broken seed (except fines classified as impurities. Refer 2.3: Impurities).

2.6.3 *Edible Soybeans*

Includes three quarter and half beans, hulls and parts thereof not classified as damaged seed

## **2.7 Degraded Seed**

Seed which is hot, musty, sour, mouldy or contains harmful substances, or which is not otherwise of commercial grade, shall be classified "degraded" and as such shall be rejectable.

2.7.1 Excessive free fatty acids (over 2.5%) or peroxide values (over 2 mEq/kg) of extracted oils may also render the seed rejectable.

## **2.8 Free Fatty Acids**

To be determined on the oil extracted from clean seed.

## 3.0 SPECIFICATIONS

### 3.1 Impurities

3.1.1 Seed will be accepted at a receival point on the basis of AOF 4.1-2, Impurity Content of Oilseeds, Rapid Acceptance Tests except for cottonseed, where it will be done by hand picking. Where laboratory facilities are available, AOF 4.1-3, Impurity Content of Oilseeds, shall take precedence for rejection.

3.1.2 In any consignment there is a nil tolerance per 2.5 litre sample for any snails or stones remaining above a 3.0 mm round hole screen. If one snail/stone is found above the screen in the ½ litre sample, then a further four ½ litre samples should be taken. If a snail is found in any one of the subsequent samples, the load is rejected.

There is a tolerance of 1 stone/snail per ½ litre sample, passing through a 3.0 mm round hole screen.

**Note:** Snails refer to whole snails or substantial portions thereof and includes bodies without shells, and stones include hard shale, coal, hard earth pellets, meghemite (ironstone or buckshot), hard fertiliser pellets, limestone or other non-toxic material of a similar nature.

3.1.3 A consignment containing harmful substances shall be rejectable. Among harmful substances are included live, stored grain-feeding insects, dead insects or specified weed seeds in excess of the lowest limit prescribed in any of the State Stockfeed Regulations lists of permitted weed seeds. For the purpose of this Standard, the following are the acceptable maxima–

**Table 1 Weed Seed Limits** (maximum seeds per ½ litre)

Weed Seed	Limit
Alligator weed ( <i>Alternanthera philoxeroides</i> )	Nil
Burrs ( <i>Xanthium spp.</i> )	1 1 burr
Cape Tulips ( <i>Homeria spp.</i> )	Nil
Castor-Oil Plant ( <i>Ricinus communis L.</i> )	Nil
Common Heliotrope ( <i>Heliotropium europeum L.</i> )	3
Coriander	Nil
Creeping Knapweed ( <i>Acoptilon repens</i> )	Nil
Crow Garlic ( <i>Allium vineale L.</i> )	2
Darling pea ( <i>Swansonia spp.</i> )	Nil
Darnel ( <i>Lolium temulentum L.</i> )	3
Dodder ( <i>Cuscuta spp.</i> )	Nil
Giant Sensitive plant ( <i>Mimosa invisa</i> )	Nil
Hexam scent ( <i>Melilotus indicus L.</i> )	3
Jute ( <i>Corchorus olitorius</i> )	3
Mexican poppy ( <i>Argemone mexicana L. s. lat.</i> )	3
Mintweed ( <i>Salvia reflexa Homem</i> )	3
Nightshade ( <i>Solanum spp.</i> )	3
Opium Poppy ( <i>Papaver somniferum L.</i> )	Nil
Parthenium weed ( <i>Parthenium hysterophorus</i> )	Nil
Ragweed ( <i>Ambrosia spp</i> )	Nil
Rattlepod ( <i>Crotalaria spp</i> )	Nil
Saffron Thistle ( <i>Carthamus lanatus</i> )	Nil
Sesbania pea ( <i>Sesbania cannibina (Retz.) poir.</i> )	65
Skeleton weed ( <i>Chondrilla juncea L.</i> )	2
Star Burr ( <i>Acanthospermum hispidum</i> )	Nil
Stinkwort ( <i>Inula graveolens</i> )	Nil
St. Johns wort ( <i>Hypericum perforatum L. var. angustifolium DC</i> )	Nil
Thornapple ( <i>Datura spp.</i> )	2
Wild mignonette ( <i>Reseda lutea</i> )	1

3.1.4 Field insects including maximum 10 large field insects (Rutherglen bugs, ladybirds, grasshoppers and wood bug) and maximum 100 small field insects (all species of aphid and all species of mites).

### 3.2 Contracted Oilseeds

3.2.1 With the exception of impurities and moisture, all analyses shall be reported on a clean seed basis.

3.2.2 According to the provisions of these rules, seed can be rejected by the crusher. However, such seed may be accepted where storage or processing arrangements can be made by the crusher so as not to jeopardise the safety of operation of the facilities or the quality of the products.

**Table 2 Oilseed Standards**

Oilseed	Oil Content Standard	Impurity Limit	Moisture Allowed	Broken Seed Allowed	Damaged Seed (rejectable over)			
					Rejectable over	Allowed	Sprouted	Green
Canola <sup>1</sup> CSO-1	42%	3%	8%	7%	3%	5%	NIL (2%)	10%
Linseed CSO-2	39%	4%	10%	7%	3%	5%	NIL (2%)	10%
Peanuts <sup>3</sup> CSO-3	41%	4%	9%	***	***	***	***	***
Sunflower <sup>4</sup> CSO-4	40%	4%	9%	7%	3%	5%	NIL (2%)	10%
Linola <sup>2</sup> CSO-6	40%	3%**	9%	7%	3%	5%	NIL (2%)	10%
Rapeseed CSO-7	42%	3%	8%	7%	3%	5%	NIL (2%)	10%
Safflower CSO-8	34%	4%	8%	7%	3%	5%	NIL (2%)	10%
Soybean CSO-9	–	4%	13%	20%	3%	5%	NIL (2%)	10%
Cottonseed CSO-10	–	2%	11%	-	5%	5%	-	5%
Edible Milling Grade Soybean CSG 71	See Table 3A – Note these are stand alone standards and the details in sections 3 and 4 do not apply							
Edible Manufacturing Grade Soybean CSG 72	See Table 3A – Note these are stand alone standards and the details in sections 3 and 4 do not apply							
<p><sup>1</sup> Being seed of the species <i>Brassica napus</i> or <i>Brassica campestris</i> but containing less than 30 micromoles of specified glucosinolates per g of oil-free air-dry solids and not more than 2% erucic acid in the oil component, as a proportion of the total fatty acids content. The specified glucosinolates are any one or a mixture of 3-butenyl, 4-pentenyl, 2-hydroxy-3-butenyl and 2-hydroxy-4-pentenyl glucosinolates.</p> <p><sup>2</sup> Max. 1% Cruciferous seeds in Linola.</p> <p><sup>3</sup> Peanuts for oil extraction are generally purchased as a by-product of the preparation of food-grade nuts in which case rejection clauses may not apply. Price adjustments shall be applied to the Clean Seed Value. Refer 4.0, and 4.7.</p> <p><sup>4</sup> Sunflower seed shall be rejectable at densities less than 32 kg/hl</p>								

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## **4.0 PRICE ADJUSTMENTS**

For cottonseed, no price adjustments are applicable. For all other commodities, the impurity content or, where over 4%, the corrected impurity content, shall be deducted from the gross weight of seed received to give the Corrected Net Weight from which shall be calculated the Clean Seed Value. The Clean Seed Value shall be the basis for calculation of all premiums and deductions.

### **4.1 Corrected Net Weight**

4.1.1 The gross weight shall be adjusted by 1% for each 1% impurity up to 4%, plus 2% for each 1% impurity over 4% (fractions in proportion). For seed accepted over the standard limits in addition to the adjusting charge the buyer may also apply a grading charge.

4.1.2 *For canola, linola and rapeseed* the standard impurity limit is 3%, over which the seed is rejectable, but if accepted the price adjustment is 1% for each 1% up to 4%, and thereafter 2% for each 1% (fractions in proportion).

4.1.3 *For peanuts*, the standard impurity limit is 4%, with a 1% deduction for each 1% (fractions in proportion) to 4%, and a 1.5% deduction for each 1% over 4%. Seed may be rejected if impurities exceed the standards established.

### **4.2 Clean Seed Value**

The price of seed per tonne multiplied by the corrected net weight. Adjustments shall be applied to the Clean Seed Value as follows:

### **4.3 Oil Content**

1.5% premium or deduction for each 1% above or below standard respectively (fractions in proportion). The exception is safflower seed which has an adjustment factor of 2% for each 1% oil content variation.

### **4.4 Moisture**

2% deduction for each 1% above the allowed level (fractions in proportion) for seed purchased for immediate processing or a 1.5% deduction for each 1% above the allowed level plus a drying charge when the seed received is for storage.

### **4.5 Broken or Split Seed (see 2.6 above)**

0.5% deduction for each 1% above the allowed level (fractions in proportion), excepting peanuts and edible soybeans.

### **4.6 Damaged Seed (see 2.5 above)**

Green seeds in rapeseed and canola shall incur no penalty up to max 2% (fractions in proportion) over which level the seed shall be rejectable, excepting peanuts.

Green Canola seed may also be measured as chlorophyll with a maximum of 12ppm in the seed.

All other damaged seed shall incur a penalty of 0.5% for each 1% over 3% (fractions in proportion) to a maximum of 10% total damage over which level the seed shall be rejectable, excepting peanuts and edible soybeans.

### **4.7 Free Fatty Acids**

To be applied as required to clean seed. Deduction of 2% for each 1% above 1% FFA (fractions in proportion). Rejectable over 2.5% FFA. The exception is for peanuts, where 2% is allowed, with a 2% deduction for each 1% over 2% to 3%, and a 3% deduction for each 1% over 3% to 5%. Rejectable over 5%. Fractions in proportion.

## 5.0 COMMODITY TRADING STANDARDS

**Table 3: Commodity Trading Standard**

Commodity/ Reference	Standard		Price Adjustments
<b>CSO-1 Canola</b>			
Oil	Standard	42%	1.5% premium or deduction for each 1% above or below 42%. Note 5
Impurities	Reject	3%	Gross weight adjusted by 1% for each 1% impurities up to 4%, plus 2% for each 1% over 4%. Note 2, 5, 8
Moisture	Max	8%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max	7%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Test Weight	Min	62 kg/hL	Sample must be assessed in laboratory
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	No penalty up to a max of 2% (ruler method)
Chlorophyll	Max	12mg/kg	Note 6
Total	Max	10%	0.5% deduction for each 1% over max.
<b>CSO-2 Linseed</b>			
Oil	Standard	39%	1.5% premium or deduction for each 1% above or below 39%. Note 5
Impurities	Max	4%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 2% for each 1% over max. Notes 2, 5
Moisture	Max	10%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max	7%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	Penalty of 1% for each 1% over zero to a max of 2% over which the seed is rejectable.
Total	Max	10%	0.5% deduction for each 1% over max.
<b>CSO-3 Peanut</b>			
Oil	Standard:	41%	1.5% premium or deduction for each 1% above or below 41%. Note 5
Impurities	Max:	4%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 1.5% for each 1% over max. 2 for 1 penalty over 4%. Notes 2, 5
Moisture	Max:	9%	If accepted over max, 2% deduction for each 1% over max. Note 5
<b>CSO-6 Linola</b>			
Oil	Standard	40%	1.5% premium or deduction for each 1% above or below 40%. Note 5
Impurities	Max	3%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 2% for each 1% over max. 2 for 1 penalty over 4%. Notes 2, 5
Moisture	Max	9%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max:	7%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	Penalty of 1% for each 1% over zero to a max of 2% over which the seed is rejectable.
Total	Max	10%	0.5% deduction for each 1% over max.

Commodity/ Reference	Standard		Price Adjustments
<b>CSO-4 Sunflower</b>			
Oil	Standard	40%	1.5% premium or deduction for each 1% above or below 40%. Note 5
Impurities	Max	4%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 2% for each 1% over max. Notes 2, 5
Moisture	Max	9%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max	7%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	Penalty of 1% for each 1% over zero to a max of 2% over which the seed is rejectable.
Total	Max	10%	0.5% deduction for each 1% over max.
<b>CSBS Sunflower Birdseed Grade</b>			
Quality			Traded as machine dressed seed basis as opposed to farmer dressed seed, consequently no price adjustment for impurity applies unless seed is purchased on a farmer dressed basis
Moisture	Max	9%	Rejectable over 9%.
<b>CSO-5 Sunflower Confectionary Grade</b>			
Quality			As for SUN:S:182/79.
Moisture	Max	9%	Rejectable over 9%.
<b>CSO-7 Rapeseed</b>			
Oil	Standard	42%	1.5% premium or deduction for each 1% above or below 42%. Note 5
Impurities	Max	3%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 2% for each 1% over max. 2 for 1 penalty over 4%. Notes 2, 5
Moisture	Max	8%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max	7%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	No penalty up to a max of 2%
Chlorophyll	Max	12mg/kg	Note 6
Total	Max	10%	0.5% deduction for each 1% over max.
<b>CSO-8 Safflower</b>			
Oil	Standard	34%	2% premium or deduction for each 1% above or below 34%. Note 5
Impurities	Max	4%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 2% for each 1% over max. Note 2
Moisture	Max	8%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max:	7%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	Penalty of 1% for each 1% over zero to a max of 2% over which the seed is rejectable.
Total	Max	10%	0.5% deduction for each 1% over max.

Commodity/ Reference	Standard		Price Adjustments
<b>CSO-9 Soybean</b>			
Oil	Standard	—	
Impurities	Max	4%	Gross weight adjusted by 1% for each 1% impurities up to max, plus 2% for each 1% over max. Note 2
Moisture	Max	13%	If accepted over max, 2% deduction for each 1% over max. Note 5
Broken Seed	Max:	20%	If accepted over max, 0.5% deduction for each 1% over max. Note 5
Damaged Seed	Max	3%	0.5% deduction for each 1% over max.
Sprouted	Max	5%	0.5% deduction for each 1% over max.
Green	Max	NIL (2%)	Penalty of 1% for each 1% over zero to a max of 2% over which the seed is rejectable.
Total	Max	10%	0.5% deduction for each 1% over max.
<b>CSO-10 Cottonseed</b>			
Oil	Standard	—	
Impurities	Max	2%	
Moisture	Max	11%	
Damaged Seed	Max:	5%	
Sprouted	Max	5%	

**Note 1** The impurity content or where over 4%, the corrected impurity content, shall be deducted from the gross weight of seed received to give the *corrected net weight* from which shall be calculated the clean seed value. The clean seed value shall be the basis for calculation of all premiums and deductions.

Seed buyers may apply a cleaning charge for seed when the impurity content exceeds the permissible level but is accepted by the buyer. This charge is in addition to the impurity price adjustment. Similarly the buyer may apply a drying charge if seed with moisture in excess of the permitted level is accepted and again such charge is in addition to the appropriate moisture adjustment charge (see Note 4).

**Note 2** The maximum limit of harmful seeds is variable (see 3.2 above).

**Note 3** Free fatty acid deductions may be applied (see 2.8, 4.7 above).

**Note 4** If seed above the moisture limit is to be dried, a 1.5 for 1 deduction above the allowed limit will be applied plus a drying charge.

**Note 5** In relation to premium and deduction adjustments, fractions will be in proportion.

**Note 6** The industry is looking to move towards a chlorophyll test as the standard. (AOF 4-1.20)

**Note 7** Protein (dry matter basis) = protein 'as is' x 100 / (100 - 'as is' moisture)

**Note 8** Maximum limit of large field insects is 10 and small field insects 100

**Table 3A: Edible Soybean Commodity Trading Standards**

<b>Commodity : EDIBLE MILLING GRADE SOYBEANS</b>		
<b>Standard Reference No: CSG 71</b>		
<b>Parameter</b>	<b>Specification</b>	<b>Comment/Variation</b>
Description		Edible soybeans comprising clean, sound, whole soybeans of selected and approved light hilum varieties suitable for milling into flour
General		Beans tended for delivery shall be free from any uncharacteristic odours, genetic modification, infestation, objectionable material and any nominated commercially unacceptable contaminant
Genetic Modification	nil	Beans shall comply with the Australian standard for freedom from genetically modified materials
Moisture	12% max	
Test Weight kg/hl	70 kg/hl min	Chondrometer (Trade Certified) per half litre
Protein (dry matter basis)	No minimum	
Seed Retention	No minimum	
Germination	No Minimum	
<b>Defective Beans</b> (Maximum % wt/wt based on half litre sample retained above 4.75 round hole seive)		
Discoloured (max)	1 bean	Discoloured bean per half litre indicative of variety. Excessive seed coat stains rejectable by visual inspection
Damaged	3% maximum	Defined as bean pieces, insect damaged, badly weather damaged, ie heat damaged/frosted, ground damaged, diseased, mouldy or otherwise materially damaged including purple staining
Sprouted	Nil	Bean that gives any indication of commencement of growth
Split/Broken	10% maximum	Defined as half bean or greater parts thereof (with or without hull) that do not come within the definition of damaged beans
Green	2% maximum	Beans where a cross section shows an intense green colour, or when it is green in colour and of a meaty or chalky consistency
<b>Seed Contaminants</b> (Max per half litre) <i>Source : AWB Weed Seed List</i>		
Type 1 * individual seed basis	5	Colocynth, Double Gee or Spiny Emex or Three Corner Jack, Long Headed Poppy, Mexican Poppy, Field Poppy, Horned Poppy, Wild Poppy, New Zealand Spinach, Parthenium Weed (Qld only)
Type 2	nil	Castor Oil plant, (Ricinis communis) Coriander, Crow Garlic or wild Garlic, Darling Pea, Opium poppy, Ragweed, Rattlepods, Common Broomrape, Star Burr, St Johns Wort
Type 3 (a)	2	Bathurst burr, Bulls Head or Caltrop or Cats Head, Cape Tulip, Cottonseed, Dodder, Noogoora Burr, Thornapple – (Datura spp or False Castor Oil) Bellvine
Type 3 (b)	4	Vetch (Blue) and Vetch (Commercial)
Type 3 (c)	8	Heliotrope (Blue) and Heliotrope (Common)
Type 4 (a)	5	Bindweed (Field) Cutleaf Mignonette, Darnel, Hexham Scent (Hexham Scent is only acceptable if no tainting odour is present) or King Island Melilot, Hoary Cress, Mintweed, Nightshades, Paddy Melon, Skeleton Weed, Variegated Thistle
Type 5	10	Creeping Knapweed or Russian Knapweed, Patersons curse or Salvation Jane, Sesbania Pea.
Type 6	10	Saffron Thistle
Type 7 (a)	1	Chickpeas, Corn (Maize) Cowpea, Faba Beans, Lentils, Lupin, Field Peas, Safflower, Sunflower
Type 7 (b)	5	Barley, Australian Bindweed, Black Bindweed, Wheat, durum, Black Oats, Sand Oats, Wild Oats, Common Oats, Rice, Rye (Cereal) Triticale, Turnip Weed, Forage Sorghum, any other weed seeds not specified in Types 1 – 7 or SFS
Small Foreign Seeds	5	SFS – Small Foreign Seeds
Variations to AWB List	See tolerances above	

<b>Commodity : EDIBLE MILLING GRADE SOYBEANS Continued</b>		
<b>Parameter</b>	<b>Specification</b>	<b>Comment/Variation</b>
<b>Other Contaminants (Max per half litre) Specific Comments</b>		
Chemical Treatment	nil	No chemical treatments are to be used on harvested soybeans unless authorised in writing by the buyer. Any other chemical treatments must be declared at the time of delivery
Specific Allergens	nil	Presence of peanuts or vegetative matter of any kind derived from the peanut plant in any of the beans tendered for delivery
Foreign material (below 4.75 mm round hole screen)	4% max by wt	All material other than soybeans passing through a 4.75 mm round hole sieve at 20 shakes including pods, but excluding cottonseed canola and weed seeds
Unmillable material (above 4.75 mm round hole screen)	0.5% max by wt	All material other than soybeans retained above a 4.75 mm round hole sieve at 20 shakes including pods, but excluding cottonseed canola and weed seeds
Smut/Ergot/Sclerotinia	nil	
Stored Grain Insects - Live	nil	Includes Pea Weevil
Stored Grain Insects -Dead	5 maximum	Dead insect pests of stored grain by count
Field Insects	3 maximum	Nizura viridula (Vegetable Bugs)
	3 maximum	Field insects by count – All others
Snails	nil	
Sand/Earth (>= 4 mm diam)	nil	
Sand/Earth (< 4 mm diam)	20 grains	
Objectionable Matter	nil	Sticks, stones, glass, concrete, or any other commercially unacceptable contaminant, smell or taste
Pickled and coloured seeds	nil	Fusarium (pink) fungal stained, pickled grain
Odours – sour and musty	nil	Beans which have any foreign odour due to taints or improper storage conditions resulting in mould, souring or musty odours

Revised CSG 71 by AOF 25<sup>th</sup> November 2004

<b>Commodity: EDIBLE MANUFACTURING GRADE SOYBEANS</b>		
<b>Standard Reference No: CSG 72</b>		
<b>Parameter</b>	<b>Specification</b>	<b>Comment/Variation</b>
Description		Edible soybeans comprising clean, sound, whole soybeans of selected and approved light hilum varieties suitable for production of tofu, tempeh, soymilk etc
General		Beans tended for delivery shall be free from any uncharacteristic odours, genetic modification, infestation, objectionable material and any nominated commercially unacceptable contaminant
Genetic Modification	nil	Beans shall comply with the Australian standard for freedom from genetically modified materials
Moisture	12% max	
Test Weight kg/hl	70 kg/hl min	Chondrometer (Trade Certified) per half litre
Protein (dry matter basis)	40%	
Seed Retention	90%	Retained on a 6mm round hole screen after removing screenings through a 4.75 mm slotted screen
Germination	85%	
<b>Defective Beans</b> (Maximum % wt/wt based on half litre sample retained above 4.75 slotted screen)		
Discoloured (max)	1 bean	Discoloured bean per half litre indicative of variety. Excessive seed coat stains rejectable by visual inspection
Damaged	3% maximum	Defined as bean pieces, insect damaged, badly weather damaged, ie heat damaged/frosted, ground damaged, diseased, mouldy or otherwise materially damaged including purple staining
Sprouted	Nil	Bean that gives any indication of commencement of growth
Split/Broken	5% maximum	Defined as half bean or greater parts thereof (with or without hull) that do not come within the definition of damaged beans
Green	2% maximum	Beans where a cross section shows an intense green colour, or when it is green in colour and of a meaty or chalky consistency
<b>Seed Contaminants</b> (Max per half litre) <b>Source : AWB Weed Seed List</b>		
Type 1 * individual seed basis	5	Colocynth, Double Gee or Spiny Emex or Three Corner Jack, Long Headed Poppy, Mexican Poppy, Field Poppy, Horned Poppy, Wild Poppy, New Zealand Spinach, Parthenium Weed (Qld only)
Type 2	nil	Castor Oil plant, (Ricinis communis) Coriander, Crow Garlic or wild Garlic, Darling Pea, Opium poppy, Ragweed, Rattlepods, Common Broomrape, Star Burr, St Johns Wort
Type 3 (a)	2	Bathurst burr, Bulls Head or Caltrop or Cats Head, Cape Tulip, Cottonseed, Dodder, Noogoora Burr, Thornapple – (Datura spp or False Castor Oil) Bellvine
Type 3 (b)	4	Vetch (Blue) and Vetch (Commercial)
Type 3 (c)	8	Heliotrope (Blue) and Heliotrope (Common)
Type 4 (a)	5	Bindweed (Field) Cutleaf Mignonette, Darnel, Hexham Scent (Hexham Scent is only acceptable if no tainting odour is present) or King Island Mellilot, Hoary Cress, Mintweed, Nightshades, Paddy Melon, Skeleton Weed, Variegated Thistle
Type 5	10	Creeping Knapweed or Russian Knapweed, Patersons curse or Salvation Jane, Sesbania Pea.
Type 6	10	Saffron Thistle
Type 7 (a)	1	Chickpeas, Corn (Maize) Cowpea, Faba Beans, Lentils, Lupin, Field Peas, Safflower, Sunflower
Type 7 (b)	5	Barley, Australian Bindweed, Black Bindweed, Wheat, durum, Black Oats, Sand Oats, Wild Oats, Common Oats, Rice, Rye (Cereal) Triticale, Turnip Weed, Forage Sorghum, any other weed seeds not specified in Types 1 – 7 or SFS
Small Foreign Seeds	5	SFS – Small Foreign Seeds
Variations to AWB List	See tolerances above	

<b>Commodity: EDIBLE MANUFACTURING GRADE SOYBEANS</b>		
<b>Standard Reference No: CSG 72</b>		
<b>Parameter</b>	<b>Specification</b>	<b>Comment/Variation</b>
<b>OTHER CONTAMINANTS (Max per half litre) Specific Comments</b>		
Chemical Treatment	nil	No chemical treatments are to be used on harvested soybeans unless authorised in writing by the buyer. Any other chemical treatments must be declared at the time of delivery
Specific Allergens	nil	Presence of peanuts or vegetative matter of any kind derived from the peanut plant in any of the beans tendered for delivery
Foreign material (below 4.75 mm round hole screen)	3% max by wt	All material other than soybeans passing through a 4.75 mm round hole sieve at 20 shakes including pods, but excluding cottonseed canola and weed seeds
Unmillable material (above 4.75 mm round hole screen)	0.5% max by wt	All material other than soybeans retained above a 4.75 mm round hole sieve at 20 shakes including pods, but excluding cottonseed canola and weed seeds
Smut/Ergot/Sclerotinia	nil	
Stored Grain Insects - Live	nil	Includes Pea Weevil
Stored Grain Insects -Dead	5 maximum	Dead insect pests of stored grain by count
Field Insects	3 maximum	Nizura viridula (Vegetable Bugs)
	3 maximum	Field insects by count – All others
Snails	nil	
Sand/Earth (>= 4 mm diam)	nil	
Sand/Earth (< 4 mm diam)	20 grains	
Objectionable Matter	nil	Sticks, stones, glass, concrete, or any other commercially unacceptable contaminant, smell or taste
Pickled and coloured seeds	nil	Fusarium (pink) fungal stained, pickled grain
Odours – sour and musty	nil	Beans which have any foreign odour due to taints or improper storage conditions resulting in mould, souring or musty odours

New CSG 72 Revised by AOF to NACMA 25<sup>th</sup> November 2004

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## **6.0 RETESTS AND DISPUTED RESULTS**

### **Classification Dispute Settlement – Harvest Deliveries**

1. Retesting and dispute settlement can only be carried out on objective test methods. Subjective test results cannot be appealed.
2. Retesting and dispute settlement can only be carried out if the load can be accepted. Where objectionable contaminants are found, or the load cannot be accepted due to issues such as high moisture content, the load will be rejected without appeal.
3. If the classification of a load tested on receipt is disputed by the owner, or their representative, the classifier shall retest another sample drawn from the original speared sample bucket for that load. The second results will override the initial test results. A full objective classification of the second sample shall occur.
4. Should the owner or representative continue to dispute the second sample, the load may be resampled and fully classified once. These results override all previous results. (Note: resampling may not be possible if the load has moved from the sampling platform, in which case the load must rejoin the end of queue and represent as a new load). If the receipt testing equipment is trade certified, any further clauses under this section do not apply.
5. If the owner or representative continues to dispute the test result(s) and if the load has not been rejected then it will be received and binned as the site classification.
6. Duplicate one (1) litre samples will be taken and placed into an appropriately marked sample bags, which are then sealed. One sample is retained on site and one is forwarded to an appropriately certified laboratory that participates in the AOF Test Check Program, for a full objective classification.
7. The costs of laboratory testing, including sample freight and other related external costs will be borne by the person originating the dispute, unless the results of the laboratory testing result in the load being classified into a higher grade or at least a 1% increase in oil content or a 30% relative reduction in impurities. In this case the receiver of the load shall pay the testing costs. All internal costs shall be borne by each party.

### **Trade Dispute Settlement – Consignment Deliveries**

1. Trade disputes, unless otherwise agreed will be settled on a load by load basis. Contracts for the delivery of oilseeds should nominate and agree an appropriately certified laboratory that participates in the AOF Test Check Program to resolve disputes prior to the commencement of delivery. The contract should also nominate and agree if "quality is final on outturn" or "quality is final on delivery". If the testing equipment is trade certified, any further clauses under this section do not apply.
2. All loads being delivered must be sampled in accordance with AOF approved sampling methods.
3. For each load received, two clearly identified, sealed 1/2 litre samples shall be retained for a period of six weeks. The name of the person responsible for collecting the sample shall be clearly identifiable. If no dispute is lodged within this period, the samples may be disposed of and no further quality disputes will be accepted on the loads represented by these samples.
4. For each load disputed, one of the load samples shall be sent to the agreed laboratory for analysis. The laboratory shall be made aware that the samples are to settle a trade dispute under these rules and that AOF reference methods shall be used to settle the dispute. A full objective classification must be undertaken for each load.
5. The costs of laboratory testing, including sample freight and other related external costs will be borne by the person originating the dispute, unless the results of the laboratory testing improve the payment value of the load. In this case the receiver of the load shall pay the testing costs. All internal costs shall be borne by each party.

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# **AOF 1-2 Vegetable Oil Quality Standards**

This document replaces AOF Vegetable Oils Quality Standards, 1999

## Contents

- 1.0 Scope**
- 2.0 Definitions**
- 3.0 Specifications**
  - 3.1 Table 1: Vegetable Oils Standards
- 4.0 Price Adjustments**
  - 4.1 Free fatty acids
  - 4.2 Moisture, volatile matter and impurities
  - 4.3 Phosphorus
  - 4.4 Peroxide value
- 5.0 Table 2: Commodity Trading**
- 6.0 Disputed Results**
- 7.0 Draft Standard—Cold Pressed Oils**
  - 7.1 Description
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## **1.0 SCOPE**

- 1.0.1 Oilseeds and Oilseed products (ie oil, meal and hulls) must comply with the relevant stockfeed or agricultural regulations, and the requirements of State Health Acts and Regulations must be observed where appropriate.
- 1.0.2 In particular Oilseeds and Oilseed products must comply with the maximum residue levels (MRLs) listed in both the [ANZFA Food Standards code](#) and the [MRL Standard](#) (maximum residue limits in food and animal feedstuffs).
- 1.0.3 Specifications and price adjustments recorded are applicable to the analysis of Official Samples taken and tested according to the prescribed methods. Sampling procedures must be followed to ensure that the Official Sample used for analysis is representative of the consignment.
- 1.0.4 For domestic trading, Official Samples shall be taken by buyer and seller respectively at the time of receipt and dispatch of each load. Samples shall be retained for at least two months after dispatch.

## **2.0 DEFINITIONS**

N/A

## **3.0 SPECIFICATIONS**

See Table 1 Vegetable Oils Standards.

**Table 1 Vegetable Oil Standards**

	<b>CSOF-24</b>	<b>CSOF-25</b>	<b>CSOF-26</b>	<b>CSOF-27</b>	<b>CSOF-28</b>	<b>CSOF-29</b>
	<b>Bleached Refined Cottonseed</b>	<b>Raw Linseed</b>	<b>Bleached Refined Linseed</b>	<b>Degummed Linola</b>	<b>Crude Peanut</b>	<b>Bleached Refined Peanut</b>
Free Fatty Acids (ii)	max 0.25%	max 2%	max 0.25%	max 2%(iv)	max 2%	max 0.25%
Colour AOCS – Lovibond units or Gardner, 1933, where indicated)	max 6R 35Y (133.35 mm) (unbleached–12R 70Y)	10–12 Gardner	max 5 Gardner	max 5R 70Y (25.4 mm)	max 4R 35Y (25.4 mm)	max 2.5R 15Y (133.35mm)
Moisture, Volatiles and Impurities	max 0.25%	max 0.3%	max 0.25%	max 0.3%	max 0.5%	max 0.25%
Iodine Value (i)	103–113	min 175	min 175	–	85–105	85–105
Refractive Index 25°C	1.470–472	1.477–482	1.477–482	–	1.466–470	1.466–470
Relative Density 25°C	0.911–917	0.924–930	0.924–930	–	0.907–912	0.907–912
Saponification Value	190–198	188–195	188–195	–	188–196	188–196
Peroxide Value mEq/kg. (iii)	max 10	–	–	max 10	max 10	max 10
Unsaponifiable Matter	max 1.5%	max 1.5%	max 1.5%	max 1.5%	max 1%	max 1%
Phosphorus	–	–	–	max 0.02%	–	–
Foots	–	max 1% 96 hours	clear at 65°C	clear at 65°C	–	clear at 65°C
Heat Test	–	–	no break AT 340°C – heat bleaches	–	–	–
Flash Point (Closed Cup)	min 150°C	min 150°C	min 150°C	min 150°C	min 150°C	min 150°C
I Subject to seasonal variations.						Correction Factors: RD 20°C:+0.0035
ii R & D grades, max 0.1%.						(from 25°C) 15.5°C:+0.0066
iii Edible grades. Must also conform to the Australian Food Standards Code and State Health Acts and Regulations, as appropriate.						RI 40°C:–0.0053
Edible grades, i.e. the refined and deodorised products, contain specified antioxidants.						30°C:–0.0018
iv Linoleic Acid min. 66%. Linolenic Acid max 3%. Subject to crop evaluation - a new seed type.						20°C:+0.0018

**Table 1 Vegetable Oil Standards Continued**

	<b>CSOF-30 Degummed Rapeseed</b>	<b>CSOF-6 Degummed Canola</b>	<b>CSOF-21 Bleached Refined Canola</b>	<b>CSOF-4 Degummed Safflower</b>	<b>CSOF-32 Bleached Refined Safflower</b>
Free Fatty Acids (5)	max 2%	max 1	max 0.25%	max 2%	max 0.25%
Colour AOCS – Lovibond units or Gardner, 1933, where indicated)	max 7R 70Y (25.4 mm) Gardner	max 7R 70Y (25.4 mm)	Max 4R 35Y (133.35 mm) R & D Grade Max 1.5R	max 5R 35Y (25.4 mm)	max 4R 35Y (133.35mm) max 4 Gardner
Moisture, Volatiles and Impurities	max 0.3%	max 0.3%	max 0.25%	max 0.3% Crude grade Max 0.5%	max 0.25%
Iodine Value (i)	100–126	110-126	110-126	138-150	138-150
Refractive Index 25°C	1.470–472	1.470–472	1.470–472	1.472-4755	1.472–4755
Relative Density 25°C	0.910–913	0.910–916	0.910–916	0.918-924	0.918–924
Saponification Value	188–193	182–193	182–193	190-196	190–196
Peroxide Value mEq/kg. (iii)	max 10	max 10	max 10	max 10	max 10
Unsaponifiable Matter	max 2%	max 1.5%	max 1.5%	max 1.5%	max 1.5%
Phosphorus (v)	Max 0.02%	Max 0.02%	–	max 0.02%	–
Foots	Clear at 65oC	Clear at 65oC	clear at 65°C	clear at 65°C	clear at 65°C
Heat Test	–	–	-	–	no break AT 340°C heat bleaches
Flash Point (Closed Cup)	min 150°C	min 150°C	min 150°C	min 150°C	min 150°C
I	Subject to seasonal variations.				Correction Factors: RD 20°C:+0.0035
ii	R & D grades, max 0.1%.				(from 25°C) 15.5°C:+0.0066
iii	Edible grades. Must also conform to the Australian Food Standards Code and State Health Acts and Regulations, as appropriate.				RI 40°C:–0.0053
iv	Edible grades, i.e. the refined and deodorised products, contain specified antioxidants.				30°C:–0.0018
v	Erucic Acid min. max 2%. Chlorophyll max 30 ppm. Sulphur max 10 ppm.				
vi	For Crude grades, delete phosphorus and foots specifications.				
Vii	Rapeseed oil for edible purposes must contain no more than 5% erucic acid. This applies to all edible oils and blends thereof.				

**Table 1 Vegetable Oil Standards Continued**

	Degummed Soybean	Bleached Refined Soybean	Degummed Sunflower	Bleached Refined Sunflower	Degummed Sunflower Monounsaturated (preliminary)
			(iv)	(iv)	(v)
Free Fatty Acids (ii)	max 1%	max 0.25%	max 2%	max 0.25%	max 2%
Colour (AOCS - Lovibond units or Gardner, 1933, where indicated)	max 7R 70Y (25.4mm)	max 5R 70Y (133.35mm) max 5 Gardner	max 6R 70Y (25.4mm)	max 4R 35Y (133.35mm) max 4 Gardner	max 6R 70Y (25.4mm)
Moisture, Volatiles and Impurities	max 0.3%	max 0.25%	max 0.3% (Crude grade max.0.5%)	max 0.25%	max 0.3%
Iodine Value (i)	127-140	127-140	120-140 (i)	120-140 (i)	78-88
Refractive Index 25°C	1.471-475	1.471-475	1.472-474	1.472-474	1.467-470
Relative Density 25°C	0.915-922	0.915-922	0.914-920	0.914-920	0.914-917
Saponification Value	190-196	190-196	190-196	190-196	190-196
Peroxide Value mEq/kg. (iii)	max 10	max 10	max10	max 10	max10
Unsaponifiable Matter	max 1.5%	max 1.5%	max 1.5%	max 1.5%	max 1.5%
Phosphorus	max 0.02%	–	max 0.02%	–	max 0.02%
Foots	clear at 65°C	clear at 65°C	clear at 65°C	clear at 65°C	clear at 65°C
Heat Test		no break at 340°C heat bleaches	–	no break at 340°C heat bleaches	–
Flash Point (Closed Cup)	min 150°C	min 150°C	min 150°C	min 150°C	min 150°C
i	Subject to seasonal variations.				Correction Factors from 25°C: RD 20°C:+0.003
ii	R & D grades, max 0.1%.				15.5°C:+0.006
iii	Edible grades. Must also conform to the Australian Food Standards Code and State Health Acts and Regulations, as appropriate.				RI 40°C:-0.005
	Edible grades, ie. the refined and deodorised products, contain specified antioxidants.				30°C:-0.001
iv	Linolenic acid—max 1% Linoleic typical 62% (i).				20°C:+0.001
v	Linolenic—max 1%. Oleic—min 80%.v				

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## 4.0 PRICE ADJUSTMENTS

4.0.1 A consignment shall be accepted by the purchaser if it conforms to specification requirements for clarity, flash point, colour, free fatty acids, refractive index and heat test properties and otherwise meets the Australian Oilseeds Federation (AOF) industry characteristics.

### 4.1 Free Fatty Acids (FFA)

4.1.1 *Crude Oils* other than those specified

2.0–3.5%	2% price deduction for each 1% over 2% (fractions in proportion)
Over 3.5%	Rejectable

4.1.2 *Soybean Oil*

1.01%–1.05%	0.6% of price
1.06%–1.15%	0.9% of price
1.16%–1.25%	1.2% of price
1.26%–1.35%	1.5% of price
1.36%–1.50%	1.8% of price
Over 1.5%	Rejectable. If accepted over 1.5% a price deduction of 2% for each 1% over 1.5% shall apply (fractions in proportion).

4.1.3 *Sunflower Oil (all types), Linola Oil*

2.1%–2.2%	0.3% of price
2.3%–2.4%	0.7% of price
2.5%–2.6%	1.1% of price
2.7%–2.8%	1.5% of price
2.9%–3.0%	1.9% of price
Over 3%	Rejectable. If accepted over 3%, a price deduction of 3% for each 1% over 3% shall apply (fractions in proportion)

4.1.4 *Canola Oil*

1.01%–1.29%	0.5% of price
1.3%–1.5%	1.0% of price
Over 1.5%	Rejectable. If accepted over 1.5% a price deduction of 2% for each 1% over 1.5% shall apply (fractions in proportion).

4.1.5 *Peanut Oil*

2.0%–3.0%	2% price deduction for each 1% over 2%
3.0%–5.0%	3% price deduction for each 1% over 3% (fractions in proportion)
5%	Rejectable over

4.1.6 *Unbleached Refined Cottonseed Oil*

Over 0.25% Rejectable. If accepted over 0.25%, a price deduction of 2% for each 1 % over 0.25% shall apply (fractions in proportion). Negotiable over 0.75%.

### 4.2 Moisture, Volatile Matter and Impurities (MV & I)

Rejectable over the prescribed limit. If accepted over the prescribed limit, a price deduction of 2% shall be applied for each 1 % the MV & I exceeds this limit (fractions in proportion).

### 4.3 Phosphorus

Rejectable over the prescribed limit. If accepted over the prescribed limit, a price deduction of 0.06% shall be applied for each 0.001% the phosphorus content exceeds this limit (fractions in proportion).

### 4.4 Peroxide Value

Rejectable over 10 mEq/kg. If accepted over this limit, a price deduction of 1.5% shall be applied. Negotiable over 15mEq/kg. if accepted.

## 5.0 COMMODITY TRADING

Trading Standard Reference	Commodity name	Trading standard					Comments
		Free Fatty Acids (1)	Colour (aocs – Lovibond Or gardner 1933)	Iodine Value Note a	Peroxide Value mEq/kg	Moisture Volatiles Impurities (2)	
CSOF-6	Canola Oil – Crude degummed	MAX 1%	MAX 7R 70Y (25.4mm)	110–126	MAX 10	MAX. 0.3%	Erucic acid MAX 2% Phosphorus MAX 0.02% See Note B
CSOF-21	Canola Oil – Bleached refined	MAX 0.25%	MAX 4R 35Y (133.35mm) R & D GRADE MAX 1.5R	110–126	MAX 10	MAX 0.25%	Erucic acid MAX 2% See Note B
CSOF-5	Cottonseed Oil – Alkali refined	MAX 0.25%	MAX 12R 70Y (133.35mm)	103–113	MAX 10	MAX 0.25%	
CSOF-24	Cottonseed Oil – Bleached refined	MAX 0.25%	MAX 6R 35Y (133.35mm)	103–113	MAX 10	MAX 0.25%	
CSOF-25	Linseed Oil – Raw	MAX 2%	10–12 GARDNER	MIN 175 See Note A	–	MAX 0.3%	
CSOF-26	Linseed Oil – Refined or Alkali Refined	MAX 0.25%	MAX 5 GARDNER	MIN 175 See Note A	–	MAX 0.25%	
CSOF-27	Linola Oil – Crude degummed	MAX 2%	MAX 5R 70Y (35.4mm)	–	MAX 10	MAX. 0.3%	Linoleic MIN 66% Linolenic MAX 3% (See Note C)
CSOF-28	Peanut Oil – Crude	MAX 2%	MAX 4R 35Y (25.4mm)	85–105	MAX 10	MAX 0.5%	
CSOF-29	Peanut Oil – Bleached refined	MAX 0.25%	MAX 2.5R 15Y (133.35 mm)	85–105	MAX 10	MAX 0.25%	
CSOF-30	Rapeseed Oil – Crude Degummed	MAX 2%	MAX 7R 70Y (25.4mm) MAX 12 GARDNER	110–126	MAX 10	MAX 0.3%	Phosphorus MAX 0.02% Erucic Acid MAX 5.0% Edible Grade

Trading Standard Reference	Commodity name	Free Fatty Acids (1)	Colour (aocs – Lovibond Or gardner 1933)	Trading standard			Comments
				Iodine Value Note a	Peroxide Value mEq/kg	Moisture Volatiles Impurities (2)	
CSO-4	Safflower Oil – Crude Degummed	MAX 2%	MAX 5R 35Y (25.4mm)	138–150	MAX 10	MAX 0.3%	Phosphorus MAX 0.02%
CSOF-32	Safflower Oil – Bleached Refined	MAX 0.25%	MAX 4R 35Y (133.35mm) MAX 4 GARDNER	138–150	MAX 10	MAX 0.25%	
CSOF-2	Soy Oil – Crude Degummed	MAX 1%	MAX 7R 70Y (25.4mm)	127–140	MAX 10	MAX 0.3%	Phosphorus MAX 0.02%
CSOF-33	Soy Oil – Bleached Refined	MAX 0.25%	MAX 5R 70R (133.35mm) MAX 5 GARDNER	127–140	MAX 10	MAX 0.25%	
CSOF-3	Sunflower Oil – Crude Degummed	MAX 2%	MAX 6R 70Y (25.4mm)	120–140	MAX 10	MAX 0.3%	Phosphorus Max 0.02% Linoleic content by agreement Linolenic MAX 1.0%
CSOF-34	Sunflower Oil – Bleached Refined	MAX 0.25%	MAX 4R 35Y (133.35mm) MAX 4 GARDNER	120–140	MAX 10	MAX 0.25%	Linolenic MAX 1.0%
CSOF-35	Sunflower Oil, Monounsaturated Crude Degummed	MAX 2%	MAX. 6R 70Y (25.4mm)	78–88	MAX 10	MAX. 0.3%	Phosphorus max 0.02% Oleic MIN 80% Linolenic MAX 1.0%
<p><b>Note A</b> Iodine value subject to season conditions.</p> <p><b>Note B</b> Sulphur specification – maximum 10 ppm; rejectable over max. Chlorophyll specification – maximum 30 ppm; rejectable over 40 ppm.</p> <p><b>Note C</b> Subject to crop evaluation. A new seed type.</p>							

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## **6.0 DISPUTED RESULTS**

Refer Section in AOF 1-1

## **7.0 COLD PRESSED OILS**

### **7.1 DESCRIPTION**

7.1.1 Cold pressed oils are those obtained by mechanical extraction from the parent oilseed without pre-cooking or heating and without subsequent chemical extraction and/or chemical refining (Ref: Codex 1999 recommendation). The oilseed shall be selected so as to give an extracted oil of the specified odour, taste and free fatty acids content.

7.1.2 Specified cold test requirements shall only be applicable when the oil is labelled "Winterised".

### **7.2 SPECIFICATION**

Conforming to the basic standards of the parent oil, including:

Odour: mild, pleasantly characteristic

Taste: bland, with a slight nutty flavour

Free Fatty Acids: max 0.75%

Limit of 15 mEq active oxygen / kg oil (Ref: Codex 1999 recommendation)

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# AOF 1-3

## Oilseed (Vegetable Protein) Meals and Hull Standards

This document replaces Oilseed Meals and Hulls Quality Standards, 1999 and  
Commodity Trading—Vegetable Protein Meals and Hulls

### Contents

- 1.0 Scope**
- 2.0 Definitions**
- 3.0 Specifications**
  - 3.1 General
  - 3.2 Fineness of grind
  - 3.3 Protein guarantees
  - 3.4 Table 1: Standards
- 4.0 Price Adjustments**
  - 4.1 Protein
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- 5.0 Commodity Trading**
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  - 5.2 Table 2: Commodity trading
  - 5.3 Table 3: Vegetable protein meals
  - 5.4 Table 4: Oilseed hulls
- 6.0 Disputed Results**

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## **1.0 SCOPE**

- 1.0.1 Oilseeds and Oilseed products (i.e. oil, meal and hulls) must comply with the relevant appropriate stockfeed or agricultural regulations.
- 1.0.2 In particular Oilseeds and Oilseeds products must comply with the maximum residue levels (MRLs) listed in both the ANZFA [Food Standards code](#) and the [MRL Standard](#) (maximum residue limits in food and animal feedstuffs).
- 1.0.3 Specifications and price adjustments recorded are applicable to the analysis of Official Samples taken and tested according to the prescribed methods. Sampling procedures must be followed to ensure that the Official Sample used for analysis is representative of the consignment.
- 1.0.4 For domestic trading the Official Samples shall be taken at the point of origin at the time of dispatch of the load. A duplicate sample shall be despatched to the buyer with each bulk load. Samples shall be retained for at least two months after dispatch.

## **2.0 DEFINITIONS**

N/A

## **3.0 SPECIFICATIONS**

### **3.1 General**

Oilseed meals and hulls being sold for incorporation in stockfeeds shall conform to the requirements of the relevant State Stockfeed Regulations and to those specifications listed next page.

### **3.2 Fineness of Grind**

All meals.

Max. 2% retained, 3 mm screen (woven wire, DIN 3) or

Max. 10% retained, 2 mm screen (woven wire, US10, DIN 2)

(Test conditions, 200 g, 3 mins).

### **3.3 Protein Guarantees**

Any variation to the general standard shall be specified in the contract.

**Table 1: Specifications**

	<b>Oil (min %)</b>	<b>Crude Protein (min %)</b>	<b>Crude Fibre (max %)</b>	<b>Moisture (max %)</b>
<b>Canola (Note 1)</b>				
Solvent	0.5	36	15	12
Pressed	4	32	14	11
<b>Cottonseed (Note 2)</b>				
Solvent Hi Pro	0.5	43	15	12
Solvent	0.5	36	15	12
Pressed Hi Pro	6	40	17	10
Pressed	6	35	20	10
Pressed Full Fat	18	22	23	10
<b>Cottonseed Hulls (Note 3)</b>				
	1	3.5	50	12
<b>Linola</b>				
Pressed	4	30	11	11
<b>Linseed</b>				
Solvent	0.5	32	12	12
Pressed	4	31	11	11
<b>Peanut</b>				
Solvent	0.5	46	10	9
Pressed	4	44	10	9
<b>Rapeseed</b>				
Solvent	0.5	34	15	12
Pressed	4	31	14	11
<b>Safflower</b>				
Solvent	0.5	23	32	12
Pressed	4	22	30	8
<b>Soybean</b>				
Solvent	0.5	46	7	12
Pressed	4	44	7	11
<b>Soybean Hulls</b>				
	0.5	10	50	12
<b>Sunflower -</b>				
Solvent	0.5	28	24	12
Pressed	4	27	22	8
<b>Sunflower - Dehulled</b>				
Solvent	0.5	36	19	12
Pressed	4	35	18	8
<b>Sunflower Hulls</b>				
	1	4	50	12
<b>Sesame</b>				
	4	42	11	10

**Note 1** Contains less than 30 micromoles of specified glucosinolates per g of oil-free air-dry solids and not more than 2% erucic acid in the oil component as a proportion of the total fatty acids content.

**Note 2** Free gossypol content: Max. 0.1% or Max. 0.12%, depending on origin.

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## 4.0 PRICE ADJUSTMENTS

4.0.1 Requests for adjustment for quality deficiencies of meals shall be made in writing within 30 days of the date of delivery of the load in question. Where such adjustments are to be made, and unless otherwise agreed to, the Official Samples of both buyer and seller shall be analysed by their respective laboratories and an average of the two results taken.

4.0.2 Claims for quality deficiencies of hulls shall be subject to negotiation between buyer and seller.

### 4.1 Protein

#### 4.1.1 *Moisture within specification*

Where the crude protein level (or adjusted protein, see 4.1.2) is greater than 0.5% below the minimum trading standard, the selling price shall be adjusted in the proportion that the measured protein bears to that minimum standard.

#### 4.1.2 *Moisture outside specification*

Where the moisture is outside specification, the crude protein level shall be adjusted to the basis of the maximum moisture trading standard and price adjustments made as in 4.1.1 above using this adjusted protein:

$$\text{Protein, Standard moisture} = \text{Protein, actual} \times \frac{(100 - \text{Standard moisture})}{(100 - \text{Actual moisture})}$$

### 4.2 Moisture

Where the moisture content is above the maximum trading standard, a penalty shall be applied to the selling price as follows:

1 for 1 penalty to 1% over the maximum

1.5 for 1 penalty above 1% to 2% over the maximum, fractions in proportion

Rejectable above 2% over the maximum.

### 4.3 Other analyses

Should analysis show any other specifications not to meet the trading standard, settlement is to be made between the parties concerned on the basis agreed to at the time of offer acceptance. If a settlement basis has not been defined at that time in the contract, then settlement will be made on a basis mutually acceptable or as decided by a mutually acceptable arbitrator.

## 5.0 COMMODITY TRADING

**Note** For price adjustment data related to meals refer to end of tabulation.

Claims for quality deficiencies of hulls shall be subject to negotiation between buyer and seller.

### 5.1 Fineness of Grind

Refer **3.2** above.

**Table 2: Commodity Trading**

Trading Standard Reference	Commodity Name	Oil (min %)	Crude Protein (min %)	Crude Fibre (max %)	Moisture (max %)
CAN:M:392/93	Canola Meal Solvent (Note 1)	0.5	36	15	12
CAN:M:391/93	Canola Meal Pressed (Note 1)	4	32	14	11
COT:M:313/93	Cottonseed Meal Solvent Hi Pro (Note 2)	0.5	43	15	12
COT:M:312/93	Cottonseed Meal Solvent (Note 2)	0.5	36	15	12
COT:M:314/93	Cottonseed Meal Pressed Hi Pro (Note 2)	6	40	17	10
COT:M:315/93	Cottonseed Meal Pressed (Note 2)	6	35	20	10
COT:M:316/93	Cottonseed Meal Pressed Full Fat (Note 2)	18	22	23	10
LINOLA:M:341/94	Linola Meal Pressed	4	30	11	11
LIN:M:323/79	Linseed Meal Solvent	0.5	32	12	12
LIN:M:322/86	Linseed Meal Pressed	4	31	11	11
PEA:M:332/79	Peanut Meal Solvent	0.5	46	10	9
PEA:M:331/79	Peanut Meal Pressed	4	44	10	9
RAP:M:333/79	Rapeseed Meal Solvent	0.5	34	15	12
RAP:M:332/79	Rapeseed Meal Pressed	4	31	14	11
SAF:M:362/79	Safflower Meal Solvent	0.5	23	32	12
SAF:M:361/79	Safflower Meal Pressed	4	22	30	8
SOY:M:372/79	Soybean Meal Solvent	0.5	46	7	12
SOY:M:371/79	Soybean Meal Pressed	4	44	7	11
SUN:M:382/93	Sunflower Meal Solvent	0.5	28	24	12
SUN:M:381/86	Sunflower Meal Pressed	4	27	22	8
SUN:M:385/93	Sunflower Meal - Dehulled Solvent	0.5	36	19	12
SUN:M:384/93	Sunflower Meal - Dehulled Pressed	4	35	18	8

**Note 1** Contains less than 30 micromoles of specified glucosinolates per g oil-free, air-dry solids and not more than 2% erucic acid in the total fatty acids oil component.

**Note 2** Free gossypol content: Max. 0.1%.

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## 5.4 Oilseed Hulls

**Table 3: Oilseed Hulls**

<b>Trading Standard Reference</b>	<b>Commodity Name</b>	<b>Oil (min %)</b>	<b>Crude Protein (min %)</b>	<b>Crude Fibre (max %)</b>	<b>Moisture (max %)</b>
COT:H:313/96	Cottonseed Hulls	1	3.5	50	12
SOY:H:373/96	Soybean Hulls	0.5	10	50	12
SUN:H:386/96	Sunflower Hulls	1	4	50	12

## 6.0 DISPUTED RESULTS

Refer Section 6 AOF 1-1

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# **Section 1 Part 2**

# **OPERATIONAL STANDARDS**

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# AOF Operational Standards

## Section 1 Part 2 Operational Standard

Common Storage of Oilseeds—Accounting for Gains/Losses .....	AOF 2-1
Density Guide for Seed and Meal .....	AOF 2-2
Bulk Transport of Vegetable Oils.....	AOF 2-3
Bulk Transport of Vegetable Oilseeds, Meals and Hulls .....	AOF 2-4
Cleaning of Containers (Prohibited Prior Loads).....	AOF 2-5
Certificate of Cleanliness.....	AOF 2-5.1
TEST-CHEK Programme .....	AOF 2-6
Laboratory TEST-CHEK Report .....	AOF 2-6.1
TEST-CHEK Programme Report .....	AOF 2-6.2

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# AOF 2-1

## Common Storage of Oilseeds - Accounting for Gains/Losses

This document replaces AOF Standard OS 1-94

### 1.0 DEFINITION

This Standard gives a means of determining losses in common storage and their allocation to pool participants. In principle, seed is valued on receival and outturn: loss in value due to loss of stock, weighing errors, analysis errors, etc. as well as gains, are divided among participants. On the other hand, losses above a guaranteed level are allocated to the Pool Manager.

However, the disadvantage of the procedure has been that it requires finalisation of the pool before allocations can be made; this leads to unacceptable delays because the pool is mostly not finalised for some time after completion of the intake. Costs of sampling and testing of outturns and the differences noted in analyses have also been of concern, even though effects of the latter are covered in the standard.

This current revision offers a compromise to satisfy these concerns: value allocations are made on finalisation of intakes to participants according to a comparison of the intake value of each at average receival analysis with the value of the receival weight at average total pool analysis. The assumption is that all outturns will be at intake weight and near enough to average pool quality. At completion of the pool a final supplementary adjustment is made for each party for the actual weight of outturns together with any deficiency for guaranteed outturn that may be payable by the Pool Manager.

### 2.0 GUARANTEED OUTTURN

The Pool Manager shall guarantee a percentage outturn yield based on the value of the intake (or a percentage of the pool intake weight valued at average pool analysis) and this shall be specified in the contract. If the value of the total outturn at average pool analysis is less than this calculated yield value, the Manager shall make a credit of the deficiency to the parties using the facility. The major portion of such credit can be made with seed of no lesser quality than the pool average. The Pool Manager shall direct all outturn deliveries to those participating in the storage programme and to no other party except by direction of one of the parties (see 3.3 below). Any guarantee adjustment shall be made according to the proportion of the value of the intakes (at intake analysis) plus outturns for each party (at average pool analysis) to the value of total intakes plus outturns so calculated.

### 3.0 MATERIALS BALANCES

#### 3.1 Seed Price

- 3.1.1 The price of seed at standard quality, clean seed basis, shall be agreed upon by participating parties and shall reflect the value of the seed accumulated at the time of intake including storage costs. It shall be specified in the agreement.
- 3.1.2 This price, adjusted for quality (oil content, clean seed basis, impurities and other parameters to be determined by the parties) according to the provisions of the AOF\*, shall be used for determining seed value in storage calculations.
- 3.1.3 Where transfers within the pool are made between participating parties to the pool, the price of the seed traded or transferred between parties will only be of concern to the parties involved (see 3.3 below).

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\* AOF - Australian Oilseeds Federation Inc

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### 3.2 Analysis

- 3.2.1 Seed into storage shall be sampled and analysed according to the Quality Standards of the AOF whose provisions for disputed results shall also apply. Samples shall be stored in sealed plastic bags or containers in a protected area to minimise moisture changes. Analyses shall be carried out by an independent NATA\* Laboratory or as otherwise agreed.
- 3.2.2 The Pool Manager (or as otherwise agreed) shall take duplicate 1 kg samples of each load going into storage, sending one of these to each party or their agent for analysis and calculation of purchase payments and/or calculation of storage adjustments according to AOF provisions. Analyses of all seed for storage shall be sent to the Pool Manager as soon as completed.

**Note** *This eliminates the need for analysis of the intake by the Pool Manager. Analysis of the 500 tonne composites is thereby eliminated. Also no outturn analyses.*

### 3.3 Transfers

- 3.3.1 Transfers or trade between pool participants or with an outside party shall be handled as a separate calculation by the pool participant(s) concerned, not by the Pool Manager. All seed in the pool retains the identification of the originators during the course of the pool.
- 3.3.2 Transferred seed shall be outturned under the originator's name, but with a further description such as "Oilseeds Pty Ltd a/c Smith & Co." and shall be valued separately for the sale by the parties involved but included in the originator's pool calculations at pool price. The originator will either apply a set surcharge to the agreed transfer price to take care of any possible pool charges for an early settlement or apply a proportion of the pool charges (or credits) when known to the agreed transferred seed price, the proportion being:

$$\frac{\text{Value of transfer at pool price}}{\text{Value of transferer's total seed out}}^{\alpha}$$

<sup>α</sup> including transferred quantities

**NOTE:** *Transfers are completely separate to and independent of pool calculations.*

### 3.4 Calculations

#### 3.4.1 Average Analysis of Seed

Calculate the average analysis (oil content, clean seed basis and impurities) of the total seed intake for each party in the pool as described below. Other quality parameters shall be evaluated where above the allowed levels, but only if stipulated in the contract. For each load calculate—

$$\text{Weight of clean seed} = \frac{\text{wt. seed} \times (100 - \text{impurities, \%})}{100}$$

$$\text{Weight of Oil} = \frac{\text{oil content, \%} \times \text{wt. clean seed}}{100}$$

$$\text{Weight of impurities} = \frac{\text{wt. seed} \times \text{impurities, \%}}{100}$$

Then calculate for each party and the total pool—

$$\text{Average oil content, \%} = \frac{\text{total wt. oil} \times 100}{\text{total wt. clean seed}}$$

$$\text{Average impurity content, \%} = \frac{\text{total wt. impurities} \times 100}{\text{total wt. seed as received}}$$

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### 3.4.2 *Value of Seed Intakes and Total Seed Stored*

- a. Calculate the weight and value of seed into storage for each party in the pool using the average analysis of each party's intake at the agreed seed price. From these calculate the total pool weight and value. Pool intake values shall be of the dried seed where drying has been undertaken.
- b. Calculate the average total pool analysis. Calculate the value of each party's intake at average pool analysis by taking a proportion of the total pool value based on each party's weight to total pool weight.

### 3.4.3 *Seed Balances*

AOF 2-1 Page 2 of 4

- a. Preliminary Base Adjustment:

At the completion of receivals, determine the excess or deficit of the calculated seed value for each party taking the seed value out as being equivalent to the receival weight at the total pool average analysis. These adjustments will be self-balancing:

$$\text{Base Adjustment} = \text{Value in} - \text{Value at average pool analysis}$$

A positive result indicates a credit due to the party and vice versa. These are the **first payments** made to all parties at the completion of receivals.

- b. Overall Seed Value Balance

When all outturns have been made from the pool determine the overall seed value balance for the pool "in" minus "out" in this case using actual weights out of storage for each party and the total pool but still at the average pool value (ie analysis).

- c. Determine the proportion of the value of intakes plus outturns (at average analysis) for each party in relation to the total value of intakes plus outturns (at average analysis). Intakes and transfers do not include any transfers between parties to the pool (see 3.3 above).
- d. Apportion the overall seed value balance, either as a debit or credit as appropriate, to each party according to (see 3.4.3, c.). In this case a positive result indicates a debit to the party and vice versa.

### 3.4.4 *Outturn Guarantee*

Determine the extent, if any, that the total outturn value is below the guarantee as specified in the contract and credit each party for any deficiency in terms of seed value in the proportion of the value of seed each has received and out-turned (see 4.3.4, c). These payments are payable by the Pool Manager.

### 3.4.5 *Supplementary Final Adjustment*

Subtract the Preliminary Base Adjustment from the corresponding Total Pool Adjustment to give a final outstanding credit/debit to be applied to each participant and the Manager (if required).

**Storage Calculations – an example**

(Outturn Guarantee 99.5%)  
Accounting for Gains/Losses

	<b>A</b>	<b>B</b>	<b>C</b>	<b>TOTAL</b>
<b>Receivals</b>				
Wt. Tonnes	1355	950	2391	4696
Value	\$450,352.71	\$318,478.07	\$802,135.79	\$1,570,966.57
<b>Outturn Assumption for Preliminary Calculations</b>				
Wt. Tonnes	1355	950	2391	4696
Value (at pool average)	\$453,292.10	\$317,806.27	\$799,868.20	\$1,570,966.57
<b>Outturn – Actual</b>				
Wt. Tonnes	1350	955	2360	4665
Value	\$451,619.44	\$319,478.93	\$789,498.69	\$1,560,596.05

**Preliminary Base Adjustment**

	<b>A</b>	<b>B</b>	<b>C</b>
3.4.3 <b>Seed Balances</b>			
i) Value in – Value out	\$2,939.39 dr	\$671.80 cr	\$2267.59 cr
ii) Pool Balance		Nil	
FIRST PAYMENT	\$2,939.39 dr	\$671.80 cr	\$2267.59 cr

**Supplementary Final Adjustment**

3.4.3 <b>Seed Balances</b>			
i) Value in – Value out	\$1,266.73 dr	\$1,000.86 dr	\$12,638.11 cr
ii) Overall Balance		\$10,370.52 dr	
iii) Proportion in and out	28.80262205%	20.37184248%	50.82553546%
iv) Balance to each party	\$2,986.98 dr	2,112.67 dr	\$5,270.87
3.4.4 <b>Outturn Guarantee Deficit</b>			
Outturn	–	\$1,560,596.05	–
99.5% outturn	–	\$1,563,111.74	–
Deficit	–	\$2515.69 cr	–
	\$724.58 cr	\$512.49 cr	\$1,278.61 cr
Total	\$3,529.12 dr	\$2,601.04 dr	\$8,645.61 cr
Less Base Adjustment	\$2,939.39 dr	\$671.80 cr	\$2,267.59 cr
<b>FINAL PAYMENT</b>	<b>\$589.73 dr</b>	<b>\$3,272.84 dr</b>	<b>\$6378.26 cr</b>

Manager pays \$2,515.69

**TRANSFERS**

**3.3** Party A transfers \$200,000 seed (pool value) at an agreed price of \$210,000 to Party B (identified as "A, a/c B") and \$100,000 seed (pool value) at an agreed price \$110,000 to an "outside" party, Smith & Co, (identified as "A, a/c Smith & Co").

Adjustments are then calculated as follows:

\* Party B:  $\$3529.12 \text{ dr} \times \$200,000 / \$450,352.71 = \$1567.26 \text{ dr}$

\* Smith & Co:  $\$3529.12 \text{ dr} \times \$100,000 / \$450,352.71 = \$783.63 \text{ dr}$

These adjustments are added to the respective agreed prices of seed for each of the transfers.

# AOF 2-2

## Density Guide for Seed and Meal

This document replaces AOF Standard OS 2-94

1 lb/cu ft = 16.018 kg/cu m.

1 Imperial Bushel = 2219.3 cu ins = 1.2843 cu ft = 0.363677 hectolitres

1 US or Winchester Bushel = 2150.42 cu ins = 1.2444 cu ft = 0.35238 hectolitres

	SAFFLOWER		LINSEED & LINOLA		SUNFLOWER (all types)		CANOLA & RAPESEED		SOYBEAN	
	SEED	MEAL	SEED	MEAL	SEED	MEAL	SEED	MEAL	SEED	MEAL
AVERAGE DENSITY:										
lb/cu ft	33	32	45	36	26	28	43	40	47	37
kg/cu m	529	513	721	577	416	449	689	641	753	593
kg/hl	53	51	72	58	42	45	69	64	75	59
BUSHEL (IMPERIALWEIGHT)										
lb	42	41	57	46	33	36	55	51	60	47
kg	19	19	26	21	15	16	25	23	27	21
CUBIC ft/ton:	67	70	50	62	85	79	52	56	48	60
BUSHEL/ ton:	53	54	39	49	67	62	41	44	37	48
CUBIC METRES/ tonne	1.87	1.95	1.39	1.73	2.38	2.21	1.44	1.56	1.33	1.67

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# AOF 2-3

## Code of Practice for the Bulk Transport of Vegetable Oils by Road and Rail

This document replaces AOF Standard OS 3-94

### 1.0 CONTAINERS, VALVES, PIPES AND DISCHARGE HOSES

Containers and associated valves, pipes and discharge hoses used for the transport or handling of vegetable oils shall be clean and dry and safe for this use. Copper or its alloys shall not have been used in their construction. Discharge hoses shall have only been used for the conveying of food products or those vegetable oils commonly used for food purposes ("food oils"). Raw or refined linseed oils (but not otherwise processed) are deemed acceptable in this context.

In the case of 1.1.2 and 1.1.3 below, and in particular where petroleum oils and solvents have been carried, all containers shall undergo cleaning procedures using steam, chemical or high pressure water jet cleaning or a combination of these as appropriate. Cleaning by rinsing with product alone is not acceptable, except where the prior load has been a food oil.

#### 1.1 The following provisions shall apply:

##### 1.1.1 *Prohibited Prior Loads*

Classes 6, 7 and 9\*\* substances (unless itemised separately under the list of immediate prior loads, [AOF 2-5](#)), being toxic and infectious substances, radioactive substances and miscellaneous known dangerous substances such as pesticides.

##### 1.1.2 *Prohibited Immediate Prior Loads*

Class 3 and 5\*\* products, inedible processed vegetable oils and those materials specified in the FOSFA\* list (see [AOF 2-5](#)). Leaded petrol and other leaded products must not have been carried in any of the three prior loads. Unleaded petrol and solvents containing more than 1% aromatics must not have been carried in the immediate prior load. Organic polymers are also included in this group.

##### 1.1.3 *Acceptable Prior Loads*

Edible products. However, this does not remove any obligation of the supplier to ensure that the quality of its product is not affected adversely by said prior loads. Dieselene (Automotive Diesel Fuel, such as [AS 3570](#)) and aliphatic hydrocarbons with aromatic contents less than 1% are acceptable for the immediate prior load, but require complete removal of traces of the material by draining and cleaning of the container as referred to elsewhere in this Standard.

### 1.2 Certificate of Cleanliness

With each consignment, the transport contracting body, the shipper and/or their appointed agent as appropriate shall supply an AOF Certificate of Cleanliness ([AOF 2-5.1](#)) specifying the previous three loads carried and the method used for cleaning, etc. A copy shall be handed by the driver to the consignee's representative at the discharge point. If at any time Certificates of Cleanliness are not available, the transport contracting body or shipper's certificates can be used provided they contain the necessary information required by the AOF\*. The shipper shall prepare two copies of the certificate: one signed copy shall go to the receiver of the goods, and one shall be retained.

### 1.3 Minimum Cleaning Procedures

Where permanent chemical cleaning facilities are not available, minimum cleaning procedures shall be observed as follows:

- 1.3.1 Ensure that the container has not previously carried prohibited products. If so, the container shall not be used for carrying vegetable oils destined for food use. (See 1.1).
- 1.3.2 Open all drain valves and drain to ensure that all compartments are empty. Close all drain valves.

- 
- 1.3.3 Clean each compartment with rotating tank cleaning nozzles using high pressure (10,000 kPa), high temperature (100°C) water for five minutes. Alternatively, steaming using a lance or other suitable device can be used. Open drain valves and continue cleaning for a further five minutes. During this period, ensure that all valves and pipes receive direct injection of the cleaning medium.
- 1.3.4 Mop up all surplus water from each compartment.
- 1.3.5 Inspect the container, valves and pipes, and if odour or visible foreign matter is evident repeat the cleaning procedure. This is especially important for the removal of traces of diesel fuel oil.
- 1.3.6 A Certificate of Cleanliness (See 1.2) shall be made out when inspection shows that cleaning has been carried out satisfactorily and this Certificate shall accompany the load.

#### **1.4 Company Policy**

A clear Company policy should be established to designate authorised personnel for observing the requirements of this code of practice with regard to the proper handling and inspection of containers and/or consignments and the reporting associated therewith.

This Code is in no way to be considered a substitute for any legal requirements for the transportation of foods or raw materials associated therewith.

- \* AOF - Australian Oilseeds Federation Inc.  
FOSFA - Federation of Oils, Seeds and Fats Association Limited.
- \*\* As Described in the Australian Code for the Transport of Dangerous Goods by Road and Rail.

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# AOF 2-4

## Code of Practice for the Bulk Transport of Vegetable Oilseeds, Meals and Hulls by Road and Rail

This document replaces AOF Standard OS 5-96

- 1.0.1 Trailers/rail cars must be free of any product from the prior load/s and should be swept clean before any product is loaded.
- 1.0.2 Cleaning facilities are not available at supplier pick-up points, therefore cleaning should be carried out at the last place of delivery.
- 1.0.3 The supplier will not accept responsibility for the cleaning and will hold the carrier responsible for any contaminations that may occur from prior loads.
- 1.0.4 Customer/persons contracting or arranging for carriers are responsible for notifying the carrier of the AOF Code for Bulk Transport of Vegetable Oilseeds, Meals and Hulls prior to picking up the product from suppliers.
- 1.0.5 All carriers will complete a Certificate of Cleanliness at the supplier pick-up point before loading commences.
- 1.0.6 Immediate prior load restrictions include:–
- meals (meat and poultry)
  - fertiliser (includes sulphate of ammonia, urea, Nitrame, gypsum, Superphosphate, lime meal, Nitropil, Bombay dust)
  - zinc
  - scrap metal (unless containerised separately in the trailer)
  - cement (unless bagged)
  - animal manure
  - potatoes
  - mulch/compost
  - any form of garbage
- Note: in the case of fertilisers, if the trailer has been washed clean and dried after carrying fertilisers, plus inspected prior to loading then an exemption will be accepted.
- 1.0.7 All trailers/rail cars will be inspected prior to loading at supplier premises. Any trailers/rail cars failing inspection will be turned away and any costs incurred will be borne by the carrier. Loading will only take place if the trailer/rail car is cleaned, or a written clearance is received from either the carrier or the customer accepting full responsibility.
- 1.0.8 All trucks, once loaded, will be properly tarped before leaving supplier's premises.
- 1.0.9 Under no circumstances is a carrier to spray or treat the load with any chemicals

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## AOF 2-5

# Code of Practice for the Cleaning Of Containers List of Prohibited Immediate Prior Loads

(Based on the FOSFA list, July 1 1994 as amended)

**Acetone Cyanohydrin** (Alpha-Hydroxyisobutyronitrile; 2 methylactonitrile)

**Acrylic Acid** (Acroleic Acid; Propenoic Acid)

**Acrylonitrile** (2-Propenenitrile, Vinyl Cyanide)

**Adiponitrile** (1-4 Dicyanobutane)

**Aniline** (Phenylamine; Aminobenzene)

**Butylacrylate** (n-and tert-,)

**Carbon Tetrachloride** (Tetrachloromethane; Perchloromethane)

**Cardura E** (Trade Name for a glycidly ester of Versatic 911 Acid)

**Cashew Nut Shell oil** (Cashew Nut shell Liquid)

**Dibutylamine**

**Diethanolamine** (DEA: di(2-Hydroxyethyl)amine)

**Diethylenetriamine**

**Di-Isopropylamine**

**Dipropylamine**

**m-Divinylbenzene** (DVB; Vinyl Styrene)

**Epichlorohydrin** (Chloropropylene Oxide; EPI)

**Epoxy Resins** (uncured)

**Ethyl Acrylate**

**Ethylene Dichloride\***

**Ethyl Hexyl Acrylate**

**Ethanolamine** (MEA: Monoethanolamine; Colamine; 2-Aminoethanol; 2 Hydroxyethylamine)

**Ethylenediamine** (1,2 Diaminoethane)

**Formaldehyde, and mixes thereof**

**Furfuryl Alcohol** (Furyl Carbinol)

Glutaraldehyde

**Hexamethylenediamine** (1.6-Diaminohexane; 1.6 Hexanediamine)

**Isocyanates** These include - Toluene di-isocyanate (TDI Polyphenyl polymethylene isocyanate (PAPI); Diphenyl methane di-isocyanate; Methyl isocyanate

**Lube Oil Additives**

**Melamine Formaldehyde Resins** (uncured)

**Methyl Acrylate**

**Methyl Methacrylate Monomer**

**Methyl Styrene Monomer** (Vinyl Toluene); Methyl Styrene Monomer (AMS) p-Methyl Styrene Monomer (PMS)

**Morpholine**

**Morpholine Ethanol**

**Nitric Acid** (Aqua Fortis; Engravers Acid; Azotic Acid)

**Oils** - Mineral with aromatics greater than 1%

**Petrol (Leaded)** cannot be carried as any of the three prior load.

**Phenol Formaldehyde Resins** (uncured)

**Phthalates** These include: Di-octyl phthalate (DOP); Di-iso octyl phthalate (DIOP); Di-iso nonyl phthalate (DINP); Di-iso decyl phthalate (DIDP); Di-allyl phthalate (DAP)

**Polymers, Organic**

**n-Propylamine**

**Propylene Oxide** (Methyl Oxirane; 1,2-Epoxypropane)

**Pyridine**

**Styrene Monomer\*\*** (Vinyl Benzene; Phenyl Ethylene; Cinnamene)

**Silicone Oils**

**Solvents** with aromatics greater than 1%

**Tall Oil**

**Transformer Oils of PCB Type**

**Urea Formaldehyde Resins** (uncured) Vinylacetate Monomer

LEADED PRODUCTS shall not be carried for the previous three loads

\* ETHYLENE DICHLORIDE is banned as any one of the last two cargoes in organically coated tanks and as the last cargo in stainless steel and inorganically coated tanks.

\*\* STYRENE MONOMER is banned as any one of the last two cargoes in inorganically coated tanks and as the last cargo in stainless steel and inorganically coated tanks.

# AOF 2-5.1

## CERTIFICATE OF CLEANLINESS

This Certificate must be completed by the Transport Company and/or Tanker Wash Station

Date .....

Transport Carrier: .....

Prime Mover Registration:.....Tanker Nos.:.....

**PRIOR LOAD/S:** 1. .... 2. .... 3. ....  
(Do not use Trade Names) (Immediate Prior Load)

Prior Load Restrictions: See AOF "Code for the Bulk Transport Of Vegetable Oils By Road and Rail".  
Unleaded petrol not to be carried as the immediate prior load.  
Leaded products not to be carried for the three prior loads.  
Hoses to be used only for food products.

**CLEANING METHOD/S (Circle Yes or No as to the method/s used) :**

Not Cleaned	<b>Yes</b>	<b>No</b>	Well Drained	<b>Yes</b>	<b>No</b>
Water	<b>Yes</b>	<b>No</b>	Caustic Soda	<b>Yes</b>	<b>No</b>
Steam	<b>Yes</b>	<b>No</b>	Solvent	<b>Yes</b>	<b>No</b>
Detergent (*)	<b>Yes</b>	<b>No</b>	Dried	<b>Yes</b>	<b>No</b>
Acid	<b>Yes</b>	<b>No</b>			

(\*) If YES, Detergent must be suitable for use in the food industry.

Specify Name: .....

**VISUAL INSPECTION (Tick and fill in appropriate details) :**

	Clean	Dry	Free Of Odour	Free Of Foreign Matter	Seal No/s.	Remarks
Compartment 1						
Compartment 2						
Compartment 3						
Compartment 4						
Compartment 5						
Compartment 6						
Compartment 7						
Compartment 8						
Manifold						
Pump						
Hoses						

**Inspected By:** .....  
(Company Name – Print)

**Name Of Person Inspecting:** .....  
(Print Name)

**Signature Of Person Inspecting:** ..... **Date:** .....

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# AOF 2-6

## AOF TEST-CHEK Programme

This document replaces AOF Standard OS 4-95

### 1.0 DEFINITION

- 1.0.1 TEST-CHEK is a formal check analysis programme designed to determine Inter-Laboratory Correlations for analyses that are used for the valuation of products.
- 1.0.2 The main use of this programme is for comparing oil contents of oilseeds that are used in the valuing of crops. It can be applied to solvent oil content tests, the prime method of analysis used to calibrate electronic instruments, and to the results obtained from these latter secondary test methods, the methods used for crop payments. It also has application in the determination of impurities in oilseeds.
- 1.0.3 TEST-CHEK can also be used for the protein analysis of meals or for other tests that relate to product specifications.
- 1.0.4 TEST-CHEK results are designed to give an indication of the performance of any Laboratory that is involved in analysis for grower payments or other value-related parameters. When a range of results has been established, a statistical evaluation can be made to determine permissible variations.

### 2.0 PROGRAMME SELECTIONS AND REQUIREMENTS

AOF methods shall be used where published. For seeds and meals, results are to be reported on an "as is" basis and are to include moisture contents. All results are to be sent by facsimile to the TEST-CHEK managing agent (see 4.0) within ten working days of the date of dispatch of each sample. Only results received by the end of this period will be included in reports.

#### 2.1 Seed

Fortnightly: two major seed types (initially sun seed and canola), five samplings, 500 g of each:

- a. sun seed—commencing first week in June
- b. canola—commencing first week in November

#### Analyses:

Oil content (solvent, electronic)  
Moisture (oven, electronic)  
Impurities

### 3.0 TEST-CHEK AUDIT COMMITTEE

- 3.0.1 A TEST-CHEK Audit Committee shall be appointed each year to review the results submitted by participants to assess individual analytical performances and report in confidence to the Technical and Quality Standards Committee Chairperson any adverse results for further consideration.
- 3.0.2 At the first meeting of the Technical and Quality Standards Committee in each year, three representatives selected from among the special interests of AOF\* membership, these being refiner, crusher, grower, seed breeder, stockfeed manufacturer, public analyst and government department, shall be appointed to membership of the TEST-CHEK Audit Committee for the year in question, but subject to their agreement to participate.

### 4.0 TEST- CHEK CHARGES

- 4.0.1 At the first Technical and Quality Standards Committee meeting in each year the TEST-CHEK programme requirements for that year shall be established and an agent appointed to manage the programme for that year. The agent's fee shall be agreed upon and a charge for participants established for each series of five samples. AOF\* members shall be advised of details.

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4.0.2 The service shall include the collection of bulk samples, sampling thereof and the distribution of individual samples and subsequent distribution of results to participants, the Technical and Quality Standards Committee Chairperson, the Audit Committee and the AOF Secretariat. These actions are the responsibility of the agent. Final report summaries shall be the responsibility of the AOF\*.

4.0.3 Payments for the service shall be made through the AOF\*. The AOF\* shall invoice participants for the service and shall recompense the TEST-CHEK managing agent for his services according to the agreed schedule of fees.

## **5.0 RECOGNITION OF SATISFACTORY PERFORMANCE**

Satisfactory performance by participants in the TEST-CHEK programme shall be acknowledged by the Technical and Quality Standards Committee based on the precision of the analysts' work and continuing participation in the programme. It is to be noted, however, that before an adequate evaluation can be made, there must be a sufficient number of participants, samples and parameters to satisfy statistical requirements.

## **6.0 NOTIFICATION OF RESULTS**

Results shall be advised to participating parties by the programme manager near or at the due date of receipt of results. Identification of the analysts shall only be made to the TEST-CHEK Audit Committee through the Technical and Quality Standards Committee Chairperson and the AOF\* Secretariat.

\*AOF – Australian Oilseeds Federation Inc.

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# AOF 2-6.1

## Laboratory TEST-CHECK Report

Report Date:.....

Sample:..... Sample Reference: .....

Sample Received:.....

Testing  
Laboratory.....

Note: AOF methods must be used where applicable. Oven moistures must accompany seed and meal analyses.

### SEED

ANALYTE
Impurities %
Oil - Solvent (Clean Seed Basis) %
Oil - NIR (Clean Seed Basis) %
Oil - NMR (Clean Seed Basis) %
Oven Moisture %
Oleic (percent of oil)
Linoleic (percent of oil)
Free Fatty Acids (percent of oil)

### RESULTS


This Report Authorised by: \_\_\_\_\_

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# AOF 2-6.2

## TEST-CHECK Programme Report

Report Date: \_\_\_\_\_

Sample: \_\_\_\_\_ Sample Reference: \_\_\_\_\_

Sample Distribution Date: \_\_\_\_\_

Authorised Distribution Agent: \_\_\_\_\_

### SEED

### LABORATORY CODE

ANALYTE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Impurities %																
Oil- Solvent (Clean Seed Basis)%																
Oil- NIR (Clean Seed Basis) %																
Oil- NMR (Clean Seed Basis) %																
Oven Moisture %																
Oleic (percent of oil)																
Linoleic (percent of oil)																
Free Fatty Acids (percent of oil)																

# **Section 1 Part 3**

## **Typical Analyses**

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# AOF Typical Analyses

## Section 1 Part 3 Typical Analyses

Typical Composition of Vegetable Fats and Oils .....	AOF 3-1
Colour Comparisons.....	AOF 3-2
Typical Amino Acid Composition of Meals .....	AOF 3-3

# AOF 3-1

## Typical Composition of Vegetable Fats and Oils

### MAIN COMPONENT FATTY ACIDS

Carbon double bonds	Caprylic	Capric	Lauric	Myristic	Palmitic	Palmitoleic	Stearic	Oleic	Linoleic	Linolenic
	8-0	10-0	12-0	14-0	16-0	16-1	18-0	18-1	18-2	18-3
Castor (1)					1		2	3	4	
Canola					4		2	62	19	9
Coconut				16	8	1	4	6	2	
Corn (maize)	8	7	48		12		2	30	54	1
Cottonseed				1	22	1	2	20	54	
Crambe					3		2	18	10	6
Linola					7		4	17	69	2
Linseed (4)					6		4	18	19	53
Oiticica (2)					7		6	5		
Olive				1	12	1	2	75	9	
Palm					47		4	38	10	
Palm kernel					8		1	16	1	
Peanut				1	10		3	44	34	66
Perilla (4)	2	2	51	18	7		2	13	12	2
Poppyseed					12		2	19	65	
Rapeseed					4		1	17	13	8
Rice bran					17		2	39	39	3
Safflower					7		3	12	78	
Sesame					9		5	45	41	
Soybean					10		4	22	55	8
Sunflower – hilin					6		4	24	65	
Sunflower – lolin					6		4	32	56	
Sunflower – mono					4		4	80	10	
Unsaturated tung					4		1	8	4	3

Carbon double bonds	Saturated	Unsaturated	Total Saturated	Total Mono-saturated	Total Poly-unsaturated	Iodine value	Saponification value
					18 2-3		
Castor (1)						85	180
Canola		20-24	6	62	28	112	190
Coconut	20-24	1-3	91	7	2	9	255
Corn (maize)			14	30	55	122	190
Cottonseed			25	21	54	108	192
Crambe			5	18	16	95	170
Linola			11	17	71	139	190
Linseed (4)			10	18	72	180	190
Oiticica (2)		59(5)			7	150	190
Olive			14	75	9	80	
Palm			52	38	10	52	200
Palm kernel			82	16	1	20	250
Peanut			18	44	34	100	190
Perilla (4)	5(30)		9	13	78	200	190
Poppyseed			14	19	67	134	190
Rapeseed	4		9	17	21	104	175
Rice bran			19	39	42	87	190
Safflower		53(6)	10	12	78	145	190
Sesame			14	45	41	110	190
Soybean	1		15	22	63	135	190
Sunflower – hilin	1		11	24	65	134	190
Sunflower – lolin	1		11	32	56	125	190
Sunflower – mono	1		9	81	5	165	190
Unsaturated tung		80(7)				165	190

## AOF 3-2

### Colour Comparisons (Approximate Conversions Only)

GARDNER	LOVIBOND (133.35MM)	AOCS TINTOMETER	LOVIBOND (25.4MM)	AOCS TINTOMETER
1	1R 10Y	1R 10Y	0.24R 2.4Y	0.24R 2.4Y
2	1.6R 16Y	1.6R 16Y	0.32R 3.2Y	0.32R 3.2Y
3	2.5R 25Y	3.0R 25Y	0.45R 4.5Y	0.45R 4.5Y
4	4R 40Y	4.5R 40Y	0.65R 6.5Y	0.65R 6.5Y
5	6.2R 62Y	7.0R 62Y	0.8R 8.0Y	0.8R 8.0Y
6	8.5R 80Y	-	1.2R 12.0Y	1.2R 12.0Y
7	-	-	1.7R 17.0Y	1.7R 17.0Y
8	-	-	2.15R 21.5Y	2.5R 21.5Y
9	-	-	2.9R 29.0Y	3.5R 29.0Y
10	-	-	4.0R 40.0Y	4.5R 40.0Y
11	-	-	5.5R 55.0Y	5.9R 55.0Y
12	-	-	7.3R 73.0Y	7.9R 73.0Y
13	-	-	10.0R 100Y	-
14	-	-	14.9R 149Y	-
15	-	-	20.0R 200Y	-
16	-	-	25.0R 250Y	-
17				
18				

**Reference:**

Procter Thomson, Journal of American Oil Chemists Society, Society, 30, 259 (1953).

V C Mehlenbacher "Analysis of Fats and Oil" (The Garrard Press).

Tintometer brochure "Lovibond Colour Scale Renotation".

**Note** The Lovibond scale listed applies to models up to Model D. Model E uses the "renotated Lovibond glasses". It gives a slightly higher reading on the red scale with the same yellow scale up to 20Y. Over this there is a slight change in the renotated yellow glasses. The AOCS red scale is the renotated red values multiplied by 0.95. This has been taken into account in the above conversion.

The Gardner 1933 scale (Hellige discs 620C-40 and 620C-42) gives a much better colour comparison for vegetable oils than the colours of ASTM D 1544 (Hellige discs 620C-43 and 620C-44).

## AOF 3-3

### Typical Amino Acid Composition of Meals

(as percentage of protein)

#### Typical Amino Acid Composition (% of Protein) Australian Oilseed Meals

	Cottonseed	Linseed	Peanut	Rapeseed & Canola	Safflower	Soybean	Sunflower
Aspartic Acid	8.8	7.8	8.7	5.9	8.3	9.5	8.0
Threonine	3.5	3.6	2.6	4.0	3.1	3.9	3.7
Serene	4.4	4.1	4.0	3.7	3.8	4.6	3.8
Glutamic Acid	21.0	20.3	19.3	18.4	21.6	18.9	21.2
Proline	3.5	3.6	4.0	6.1	4.4	4.7	4.4
Glycine	3.4	5.7	5.3	5.3	5.9	4.3	5.8
Alanine	3.7	4.3	3.7	4.2	4.1	3.9	4.0
Valine	3.8	4.9	3.6	4.8	4.9	4.5	4.7
Cystine	2.5	1.7	1.5	1.6	1.1	1.3	1.4
Methoinine	0.8	1.7	1.1	2.0	1.2	1.3	2.1
Isoleucine	3.1	3.9	3.0	4.0	3.7	4.4	4.0
Leucine	5.1	5.8	6.2	7.0	6.4	7.4	6.5
Tyrosine	2.4	2.5	3.5	3.0	2.6	3.4	2.7
Phenylalanine	4.7	4.5	4.8	4.3	5.0	4.8	4.7
Lysine	4.5	4.0	3.5	5.9	3.3	6.1	3.5
Histidine	3.3	2.5	2.4	3.1	2.6	2.8	2.6
Arginine	11.7	9.1	11.3	6.2	8.9	7.1	7.9