

# *Virgin Camelina Oil*

## High Omega 3 Oil

**Omega-3** is well accepted to provide important health benefits to human. National Heart Foundation of Australia has recommended one should consume at least 500mg of DHA + EPA or 2.0g of ALA per day. The **best way** to increase the omega-3 intake in human is to consume high omega 3 eggs. Omega 3 eggs are good protein source and economical. We are introducing **Virgin Camelina Oil as a new omega 3 source** which is economical to use is **omega egg production**.

Virgin Camelina oil is produced from the seeds of Camelina sativa using a special expeller process without the use of hexane and any other chemicals. Camelina oil is **Non-GMO** and has been used as cooking oil for centuries in Europe.

- ✓ **About 33% of omega 3** – is a great source to produce high omega eggs. Can be used to replace fish oil 1 to 1 in feed formulation.
- ✓ **Anti-inflammatory effect** – resulting in healthier animals.
- ✓ **Typical value of tocopherol is about 800ppm** –stable under good storage condition (indoor, away from sunlight).
- ✓ **High in plant sterols about 3500ppm** - Can reduce the incidence of fatty liver in animals
- ✓ **100% safe** - This product is produced without the use of any chemicals.
- ✓ **High quality** - this oil has low acidity, low levels of oxidation, is low in moisture, impurities and unsaponifiable matter.



## Benefits of using Virgin Camelina Oil in Omega eggs production:

- ✓ **Economic** – the cheapest omega 3 source
- ✓ **Improves animal health** – omega 3 has anti-inflammatory effects and plant sterols can reduce the risk of heart disease
- ✓ **High digestibility** – high in unsaturated fatty acids, high digestibility and high metabolisable energy (ME)
- ✓ **Simple application** – can direct replace added oil used in the formulation without the needs to reformulate
- ✓ **Partial ALA converted to DHA** – about 30% of the total omega 3 deposited in the egg yolk is in the form of DHA



## Price comparison of different Omega 3 sources

Omega 3 sources	Camelina oil	Extruded flaxseed meal	Fish oil
Omega 3, %	34.0	~20.5	27.0 – 34.0
Raw material price per kg	RM5.40/kg (USD1.35)	RM5.40/kg (USD1.35)	RM6.80/kg (USD1.70)
Price per kg of omega 3	RM15.88 (USD3.97)	RM26.34 (USD6.59)	RM22.30 (USD5.58)
Tocopherol/ Vit E, ppm	800	370	40-70
Plant sterols, ppm	3500	197 - 214	NIL

Remarks: Currency exchange rate at USD1 = RM4.00 on June 2018

## Data compilation from local layer farms

	Camelina oil used in feed, %	Omega 3 in feed, %	Omega 3 mg/100g eggs	DHA mg/100 eggs
Farm 1	1.50	0.510	334	101
	1.20	0.414	281	99
	1.20	NA	279	64
Farm 2	1.50	0.681	316	101
	1.50	0.700	368	128
	1.50	NA	395	135
			377	113
Farm 3	1.20	0.458	261	86
			296	90
	1.20	0.549	252	88
			245	83
	1.20	0.431	389	137
			398	107
Farm 4	1.20	0.304	275	108
Farm 5	1.20	0.407	251	95

## Specifications

Free Fatty Acid	% max	3.0
Moisture and Impurities	% max	0.5
Iodine Value (Wij's)		135-165

## Virgin Camelina Oil Contents

Metabolizable energy (Poultry)		Kcal/kg	9000
C16:0	Palmitic acid	%	5.14
C 16:1	Palmitoleic acid	%	0.12
C 18:0	Stearic acid	%	2.42
C 18:1	Oleic acid	%	18.71
C18:2	Linoleic acid	%	18.64
C18:3	Linolenic acid	%	34.08
C20:0	Arachidic acid	%	1.47
C20:1	Paullinic acid	%	12.57
C20:2	Eicosadienoic acid	%	1.66
C22:0	Behenic acid	%	0.30
C22:1	Erucic acid	%	3.51
C22:2	Docosadienoic acid	%	0.11
C24:0	Lignoceric acid	%	0.17
C24:1	Nervonic acid	%	0.83
Total	Omega 3	%	34.08
Total	Omega 6	%	18.64
Total	Omega 9	%	35.62

## PACKING

In bulk or 195 kg drums, IBC of 1.3 mt and in flexi bags 20-21mt.

## STORAGE

Store in cool and dry locations away from direct sunlight.



**Please feel free to contact us:**

**SOON SOON OILMILLS SDN BHD** (A member of Soon Soon Group)  
 2448 Lorong Perusahaan 2, Prai Industrial Estate, 13600 Prai, Penang, Malaysia.  
 Tel: 604-3828288 Fax: 604-3973302  
 Email: infoffi@soonsoongroup.com  
 Website: www.soonsoonoil.com.my