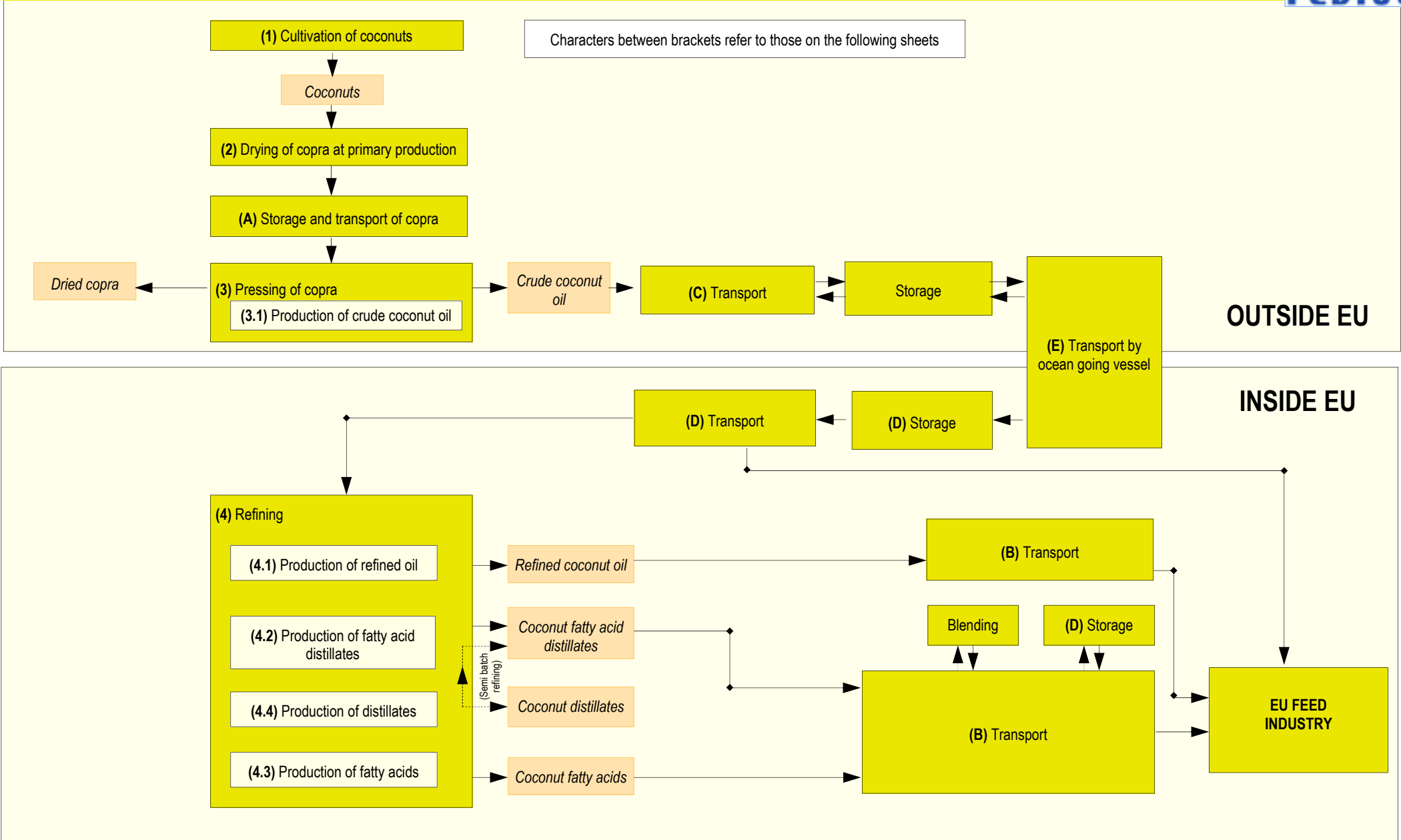


Flow chart of the production chain of coconut oil products for feed application in the EU



Characters between brackets refer to those on the following sheets



Risk assessment of the chain of coconut oil products

			1. Cultivation of coconuts*						
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Pesticide residues above the MRL, i.e. residues of herbicides, insecticides, fungicides or rodenticides above the MRL.	C					The countries of export of coconut oil (Philippines, Indonesia and others) work with positive lists for the use of pesticides during cultivation which, for some substances, may conflict with European pesticide residue legislation. Hitherto no residues of pesticides have been detected in coconut oil.	EC Regulation No. 396/2005 prohibits putting into circulation commodities that do not comply with the MRLs set in the annexes. EC Regulation No. 459/2010 amends the annexes II, III and IV listing all pesticide MRLs by products.		

* Assessment of risks outside the EU is out of the scope of this document. See Methodology document, paragraph 2.3 for more information.

Risk assessment of the chain of coconut oil products

2. Drying of copra at primary production*

HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Contaminants caused by drying									
- PAHs	C					Plantations dry copra on open fires, a source of PAH contamination for the copra.			Sun drying or indirect drying with heat exchangers (avoiding contamination of the copra with off-gases) prevents PAH contamination. JECFA (Joint FAO/WHO Expert Committee on Food Additives) recommends replacing direct drying by indirect drying. In case of direct heating, Good Manufacturing Practices recommend not to use waste products as a fuel for direct drying. Temperature and time should be controlled to avoid PAH formation. The equipment has to be kept clean and well maintained.
- dioxin	C					Plantations dry copra on open fires, a source of dioxin contamination for the copra.	Code of Practice for the prevention and reduction of dioxin and dioxin-like PCB contamination in foods and feeds (Codex CAC/RCP 62-2006).		Waste products must not be used as a fuel for direct drying.
- mineral oil	C					Copra being dried across roads may pick up spilled mineral oil.			
Aflatoxins	C					Aflatoxins may be formed when copra is not sufficiently dried.	Directive 2002/32/EC limits aflatoxin B1 in copra and products derived to 0.02 mg/kg (based on a product with a moisture content of 12%).		FEDIOL advocates sun drying or (preferably) indirect drying of copra till a moisture content of max 6%.

* Assessment of risks outside the EU is out of the scope of this document. See Methodology document, paragraph 2.3 for more information.

Risk assessment of the chain of coconut oil products

3. Pressing or extraction of copra*

HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Toxic compounds from hexane	C					Some coconut oil mills use hexane as an extraction solvent for crude oil. Industrial hexane may contain toxic compounds.	Directive 88/344/EEC sets purity criteria for the use of hexane in the production of foodstuffs.		Hexane for oil extraction must be of food grade quality.
Hydraulic oils or lubricants from failing equipment	C					Hydraulic oils and lubricants may contain toxic compounds.			Contamination of the product with non-food grade hydraulic oils or lubricants have to be strictly avoided, for example by recording of the quantities used. The risk of contamination of the product with food grade hydraulic oils and lubricants should be minimised.
Foreign bodies	P					Foreign bodies may be present.			A system should be in place that removes any foreign material.
Recycling of contaminated fat from fat traps in effluent water	C					Effluent water may be chemically contaminated.			Fat from fat traps in effluent water must have a non-food, non-feed destination except in case of dedicated process water fat taps.

* Assessment of risks outside the EU is out of the scope of this document. See section d) Risk analysis, paragraph 2.3 for more information.

Risk assessment of the chain of coconut oil products

			3.1. Production of crude coconut oil*						
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
PAHs	C					Concentration of PAHs in crude coconut oil during pressing of the copra.	FOSFA has an optional allowance scheme for crude coconut oil for BaP levels exceeding 50 µg/kg.		
Dioxin	C					A potential source of dioxin contamination is direct drying of the copra.			Monitoring data show that depending on origin crude coconut oil runs the risk of having dioxin levels exceeding the legal limits for this contaminant in feed materials.
Mineral oils	C					Copra being dried across roads may pick up spilled diesel, which will concentrate in the crude oil during the pressing of the oil.			The Dutch GMP standard limits the content of C(10-40) in oils and fats to 400 mg/kg.
Aflatoxins	C					When improperly dried copra is stored for several days aflatoxin may be formed. Rainfall during storage and transport will accelerate the formation of aflatoxins. Some pick up by crude coconut oil during pressing of the copra.			
Residues of herbicides, insecticides, fungicides or rodenticides above the MRL	C					Hitherto no residues of pesticides have been detected in crude coconut oil.	EC Regulation No. 396/2005 prohibits putting into circulation commodities that do not comply with the MRLs set in the annexes.		

* Assessment of risks outside the EU is out of the scope of this document. See section d) Risk analysis, paragraph 2.3 for more information.

Risk assessment of the chain of coconut oil products

Utilities: coconut oil refining and processing

			Utilities: coconut oil refining and processing						
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Hydraulic oils or lubricants from equipment	C	low	high	3	PRP	Hydraulic oils and lubricants may contain toxic compounds.		The prerequisite programme should assure that the contamination of product with non-food grade hydraulic oils or lubricants is avoided and that the risk of contamination of the product with food grade hydraulic oils and lubricants is minimised. The prerequisite programme could involve recording of the quantities used.	
Quality of water	C	low	high	3	PRP	Water is used in the crushing and refining process.	For manufacture of feed, according to Regulation 1831/2003/EC water used during shall be of suitable quality.	Apply water of suitable quality.	
Cleaning agents and boiler chemicals	C	medium	medium	3	PRP	Cleaning agents and steam (using boiler chemicals) come into contact with the product.		Cleaning agents used in the production system should be flushed. Cleaning agents and boiler chemicals must be suitable for use in the food industry.	
Thermal heating fluids (THF) from equipment	C	medium	high	4	CCP	THF may still be used by non-FEDIOL members.	According to the FEDIOL Code of Practice on the Heating of Edible Oils during Processing, the use of THF is not allowed*.	Use hot water or steam heating. Otherwise, a control measure should assure that the contamination of product with thermal heating fluids is avoided.	

Risk assessment of the chain of coconut oil products

4. Refining									
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Processing aids (alkali solution, acids)	C	medium	medium	3	PRP	Processing aids come into contact with the product.		Processing aids that directly come into contact with the oil must be of food grade quality or for food use.	
Foreign materials	P	medium	medium	3	PRP	Foreign materials may be present.		Filter before loading.	

*<http://www.fediol.be/5/index2.php>

Risk assessment of the chain of coconut oil products

			4.1 Production of refined coconut oil						
HAZARD	CAT.	CHANGE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
PAHs	C	high	medium	4	CCP	Crude coconut oil may be heavily contaminated with PAHs due to bad drying practices.	EC Regulation No. 1881/2006 sets a 2.0 µg/kg limit for BaP in oils and fats intended for direct human consumption or use as an ingredient in foods.	The amount of active coal added and the intensity of the deodorisation process must be sufficient to remove both heavy and light PAHs.	
Dioxin and dioxin-like PCBs	C	low	high	3	PRP	A potential source of dioxin contamination for the oil is drying of copra and bleaching earth. However, the dosage level of bleaching earth during refining is only 1-3%.	Directive 2002/32/EC limits the dioxin content in feed material of vegetable origin to 0.75 ng/kg (WHO-PCDD/F-TEQ) and limits the sum of dioxin and dioxin-like PCBs to 1,5 ng/kg (WHO-PCDD/F-PCB-TEQ). FEDIOL has developed a Code of Practice on the purchase conditions of fresh bleaching earth for oil refining*, which includes a maximum limit for dioxin and dioxin-like PCBs of 1,5 ng/kg (WHO-PCDD/F-PCB-TEQ) as upperbound value.	Purchase fresh bleaching earth from suppliers that fulfil the FEDIOL specifications as listed in the FEDIOL Code of Practice on the purchase conditions of fresh bleaching earth for oil refining.	
Pesticide residues above the MRL, i.e. residues of herbicides, insecticides, fungicides or rodenticides above the MRL.	C	low	medium	2		Hitherto no residues of pesticides have been detected in coconut oil.	Regulation 396/2005 sets limits for residues of pesticides. This regulation allows using a transfer factor for authorised pesticides into processed products, providing feed safety is assured.		
Pesticides residues as listed in EU Directive 2002/32 for undesirable substances in feeding stuff	C	very low	high	2		Some of the banned pesticides may be present in the environment. The chance of finding them in crude coconut oil, however, is very low.	Directive 2002/32/EC sets limits for a number of pesticides residues in feeding stuff.		
Aflatoxins	C	very low	high	2		Crude coconut oil may be contaminated with traces of aflatoxin.	Directive 2002/32/EC limits aflatoxin B1 in copra and products derived to 0.02 mg/kg (based on a product with a moisture content of 12%).	Validate refining process for aflatoxin removal.	Alatoxins will disappear under normal refining conditions.

*<http://www.fediol.be/5/index2.php>

Risk assessment of the chain of coconut oil products

			4.2 Physical refining: production of coconut fatty acid distillates						
HAZARD	CAT.	CHANGE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
General	C	low	high	3	PRP		Products intended for animal feed containing a level of undesirable substance that exceeds the legal limit may not be mixed for dilution purposes with the same, or other, products intended for animal feed (Directive 2002/32/EC).	No deliberate admixture of coconut distillates.	
PAH	C	high	medium	4	CCP	Light PAHs will concentrate into the fatty acid distillate during deodorisation. In case active coal have been added, heavy PAHs are removed.		Non-complying product should not be applied to feeding stuff.	
Dioxin from bleaching earth	C	low	high	3	PRP	A potential source of dioxin contamination during refining of the oil is bleaching earth. However, the dosage level of bleaching earth during refining is only 1-3%.	Directive 2002/32/EC limits the dioxin content in feed material of vegetable origin to 0.75 ng/kg (WHO-PCDD/F-TEQ) and limits the sum of dioxin and dioxin-like PCBs to 1,5 ng/kg (WHO-PCDD/F-PCB-TEQ). FEDIOL has developed a Code of Practice on the purchase conditions of fresh bleaching earth for oil refining*, which includes a maximum limit for dioxin and dioxin-like PCBs of 1,5 ng/kg (WHO-PCDD/F-PCB-TEQ) as upperbound value.	Purchase fresh bleaching earth from suppliers that fulfil the FEDIOL specifications as listed in the FEDIOL Code of Practice on the purchase conditions of fresh bleaching earth for oil refining.	
Pesticide residues above the MRL, i.e. residues of herbicides, insecticides, fungicides or rodenticides above the MRL.	C	low	medium	2		Hitherto no residues of pesticides have been detected in crude coconut oil.	Regulation 396/2005 sets limits for residues of pesticides. This regulation allows using a transfer factor for authorised pesticides into processed products, providing feed safety is assured.		
Pesticides residues as listed in EU Directive 2002/32 for undesirable substances in feeding stuff	C	low	high	3	PRP	Some of the banned pesticides may be present in the environment. The chance of finding them in crude coconut oil, however, is very low, but they will concentrate into the fatty acid distillates during physical refining.	Directive 2002/32/EC sets limits for a number of pesticides residues in feeding stuff.	Non-complying product should not be applied to feeding stuff.	
Alatoxins	C	medium	high	3	CCP	Alatoxin will concentrate during deodorisation.	Directive 2002/32/EC limits aflatoxin B1 in copra and products derived to 0.02 mg/kg (based on a product with a moisture content of 12%).	Non-complying product should not be applied to feeding stuff.	Alatoxins are water soluble. During physical refining they may be separated with the condense water.

*<http://www.fediol.be/5/index2.php>

Risk assessment of the chain of coconut oil products

4.3. Chemical refining: production of (salts of) coconut fatty acids free from distillates

HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
PAHs	C	high	medium	4	CCP	During chemical refining, the PAH content of the fatty acids is expected to be similar to that of the crude coconut oil.		Non-complying product should not be applied to feeding stuff.	
Pesticide residues above the MRL, i.e. residues of herbicides, insecticides, fungicides or rodenticides above the MRL.	C	low	medium	2		Hitherto no residues of pesticides have been detected in crude coconut oil.	Regulation 396/2005 sets limits for residues of pesticides. This regulation allows using a transfer factor for authorised pesticides into processed products, providing feed safety is assured.		
Pesticides residues as listed in EU Directive 2002/32 for undesirable substances in feeding stuff	C	very low	high	2		Some of the banned pesticides may be present in the environment. The chance of finding them in crude coconut oil, however, is very low.	Directive 2002/32/EC sets limits for a number of pesticides residues in feeding stuff.		
Aflatoxins	C	medium	high	4	CCP	Aflatoxins are water soluble. During chemical refining they are expected to transfer to the soap stock and they may stay with the fatty acids.	Directive 2002/32/EC limits aflatoxin B1 in copra and products derived to 0.02 mg/kg (based on a product with a moisture content of 12%).	Non-complying product should not be applied to feeding stuff.	It is not clear whether aflatoxins will stay with the fatty acids or will disappear with the effluent.

Risk assessment of the chain of coconut oil products

			4.4 Chemical refining: production of coconut distillates						
HAZARD	CAT.	CHANGE	SERIOUSNES S	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
General	C	medium	high	4	CCP		Products intended for animal feed containing a level of undesirable substance that exceeds the legal limit may not be mixed for dilution purposes with the same, or other, products intended for animal feed (Directive 2002/32/EC).	According to FEDIOL, distillates from chemical refining may not be used for feed purposes. Fatty products obtained from batch refining processes combining physical and chemical refining steps in one and the same equipment may be used for feed purposes, provided that there is analytical proof showing that limits for dioxin and pesticide residues are respected.	
PAH	C	high	medium	4	CCP	Light PAHs will concentrate into the fatty acid distillate during deodorisation. In case active coal have been added, heavy PAHs are removed.		Non-complying product should not be applied to feeding stuff.	
Dioxin from bleaching earth	C	medium	high	4	CCP	A potential source of dioxin contamination during refining of the oil is bleaching earth. During chemical refining, dioxins concentrate into the distillates.	Directive 2002/32/EC limits the dioxin content in feed material of vegetable origin to 0.75 ng/kg (WHO-PCDD/F-TEQ) and limits the sum of dioxin and dioxin-like PCBs to 1,5 ng/kg (WHO-PCDD/F-PCB-TEQ). FEDIOL has developed a Code of Practice on the purchase conditions of fresh bleaching earth for oil refining*, which includes a maximum limit for dioxin and dioxin-like PCBs of 1,5 ng/kg (WHO-PCDD/F-PCB-TEQ) as upperbound value.	Purchase fresh bleaching earth from suppliers that fulfil the FEDIOL specifications as listed in the FEDIOL Code of Practice on the purchase conditions of fresh bleaching earth for oil refining. According to FEDIOL, distillates from chemical refining may not be used for feed purposes	
Pesticide residues above the MRL, i.e. residues of herbicides, insecticides, fungicides or rodenticides above the MRL.	C	low	medium	3		Hitherto no residues of pesticides have been detected in crude coconut oil.	Regulation 396/2005 sets limits for residues of pesticides. This regulation allows using a transfer factor for authorised pesticides into processed products, providing feed safety is assured.	See above under "general".	
Pesticides residues as listed in EU Directive 2002/32 for undesirable substances in feeding stuff	C	medium	high	4	CCP	Some of the banned pesticides may be present in the environment. The chance of finding them in crude coconut oil, however, is very low, but they will concentrate into the distillates during refining.	Directive 2002/32/EC sets limits for a number of pesticides residues in feeding stuff.	See above under "general". According to FEDIOL, distillates from chemical refining may not be used for feed purposes	
Alatoxins	C	very low	high	2		Alatoxins are water soluble. During chemical refining aflatoxins will disappear with the soap stock.	Directive 2002/32/EC limits aflatoxin B1 in copra and products derived to 0.02 mg/kg (based on a product with a moisture content of 12%).		

*<http://www.fediol.be/5/index2.php>

			A. Storage of copra and transport of copra to the oil mill*						
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Aflatoxins	C					When improperly dried copra is stored for several days, aflatoxin may be formed. Rainfall during storage and transport will accelerate the formation of aflatoxins.			Storage and transport companies must protect copra against rainfall and sea water. Aeration during storage. If copra is processed directly after harvesting, the risk at aflatoxin formation is low.
Foreign bodies	P					Foreign bodies such as stones from dirty trucks and glass particles, dead rodents and tree leaves can be present.			Oil mills must inspect incoming copra and must remove foreign bodies.

* Assessment of risks outside the EU is out of the scope of this document. See Methodology document, paragraph 2.3 for more information.

Risk assessment of the chain of coconut oil products

B. Transport of tropical and seed oils and derived products for feed application according to EU food transport standards

HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Contamination by previous cargo - Tank cars, rail tanks and barges	C	low	high	3	PRP	Transport of oils is dedicated.	EC Regulation No. 852/2004 implies the transport of liquid food stuffs by tank cars, rail tanks and barges to be dedicated.	Check previous cargoes via FEDIOL practical guide to previous cargo(es) for means of transport and tank lining.	
- Tank coasters	C	low	high	3	PRP	Tank coasters carrying oils and fats during short sea voyages in the EU must have as an absolute minimum as the immediate previous cargoes a product that is either a foodstuff or a product appearing on the EU list of accepted immediate cargoes of Directive 96/3/EC.	FEDIOL code of working practice for bulk road and tank container transport of fats and oils for direct food use*. FEDIOL Code of Practice for the transport in bulk of oils and fats into or within the European Union*.	Check previous cargoes via FEDIOL practical guide to previous cargo(es) for means of transport and tank lining.	
Contamination by cleaning agents - Tank cars, rail tanks and barges	C	low	medium	2		Increased risk at cleaning stations that clean both feed and chemical tanks on one site.	FEDIOL Code of Practice for the transport in bulk of oils and fats into or within the European Union*.	Include safeguards to preclude contamination of the food or feed grade cargo tanks and equipment by steam, water and cleaning agents used in the cleaning of non-food grade cargo tanks.	FEDIOL code of working practice for bulk road and tank container transport of fats and oils for direct food use includes good practices for cleaning of tanks.
- Tank coasters	C	low	medium	2		Increased risk in case coaster is not dedicated to feed- or foodstuff.		Selected cleaning stations must have an implemented HACCP-system. Demand a signed cleaning certificate before loading.	

*<http://www.fediol.be/5/index2.php>

Risk assessment of the chain of coconut oil products

B. Transport of tropical and seed oils and derived products for feed application according to EU food transport standards (continued)

HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Heating or cooling fluids from equipment - Tank cars - Rail tanks, tank barges and coasters	C	low	high	3	PRP	Stainless steel tanks are used which are heated with cooling water from the motor through a system of double walls (and not coils).	FEDIOL Code of Practice for the transport in bulk of oils and fats into or within the European Union*.	Heating coils of rail tanks must be of stainless steel (FEDIOL). If thermal heating fluids have been used, the transporter of the oil must provide for documentation on possible nett losses and analyse accordingly if necessary.	
Foreign bodies	P	low	high	3	PRP			A quality plan should require the loading of tank cars with refined oils under a roof.	
Adulteration	C/P/ B	low	high	3	PRP	Adulteration can cause harm.		Application of minimum mandatory requirements in FEDIOL code of working practice for bulk road and tank container transport of fats and oils for direct food use.	

*<http://www.fediol.be/5/index2.php>

Risk assessment of the chain of coconut oil products

C. Transport of tropical and seed oils and derived products and by-products for feed application according not in compliance with EU food transport standards

HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Contamination by previous cargo	C	low	high	3	PRP	Tank cars and barges may have been used for non food or non feed compatible products such as petrochemicals.		Tank cars and barges that are not dedicated tot the transport of foodstuff or feeding stuff should have undergone a validated cleaning procedure.	
Contamination by cleaning agents	C	medium	medium	3	PRP	Increased risk at cleaning stations that clean both feed and chemical tanks on one site.		Feed- or food-grade cleaning agents must have been used.	FEDIOL code of working practice for bulk road and tank container transport of fats and oils for direct food use includes good practices for cleaning of tanks.
Heating or cooling fluids from failing equipment									
- Tank cars	C	low	<u>high</u>	<u>3</u>	<u>PRP</u>	Tank cars that use coils for heat transfer are banned. The tanks are heated with cooling water from the motor through a system of double walls.			
- Barges	C	low	high	3	PRP	Toxic thermal heating fluids may still be used. However, due to relatively low heating temperatures applied during transport, the chance of leakage of thermal heating fluids into the product is low.		If thermal heating fluids have been used, the transporter of the oil must provide for documentation on possible net losses and analyse accordingly if necessary.	The use of hot water or steam heating is recommended.
Foreign bodies	P	low	medium	2					
Misuse of additives	C	low	high	3	PRP	Additives allowed for food oil applied to oil going to feed –or vice versa- for which use they may not have been approved.		Agree on clear specifications as regards use of additives	
Adulteration with mineral oil		low	high	3	PRP	Adulteration with mineral oils is still a problem with the transport of oils in the countries of origin. Since October 1999 control has been intensified and the chance of adulteration taking place has decreased.		Prevent adulteration.	

Risk assessment of the chain of coconut oil products

			D. Storage						
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Contamination due to lack of segregation (contamination from previous cargoes, use of incorrect joinings, shared equipment)	C	low	high	3	PRP	This risk classification applies to terminals that store both chemicals and vegetable oils. Less risk is involved when the tank terminal applies the EU list of acceptable previous cargoes during sea transport to the storage of vegetable oils. Least risk is involved when the vegetable oils are stored in tanks that are dedicated to the storage of foodstuffs.	Terminals in the EU that store oils and fats for food application are obliged to apply HACCP (EC Regulation No. 852/2004)	Food or feed dedication of storage tanks. Otherwise, storage tanks must at least adhere to the EU rules on previous cargoes that have been set up for sea transport in Directive 96/3/EC.	
Contamination by cleaning agents	C	low	high	3	PRP	This risk classification applies to terminals that store both chemicals and vegetable oils. They may abstain from using cleaning agents that are suitable for use in the food industry. For tank terminals in the EU that apply HACCP and that keep the storage of vegetable oils and chemicals separated, the chance of using the wrong cleaning agents is very low.		Cleaning agents must be suitable for use in the food industry.	
Solvent from coating	C	low	high	3	PRP	Solvents from virgin coatings migrating to the oil, which may end up in the fatty acid distillates during refining		Use stainless steel tanks or in case of use of tanks with virgin coating, do not feed the FAD	
Thermal heating fluids from failing equipment	C	low	high	3	PRP	Toxic thermal heating fluids may still be used. However, due to the relatively low heating temperatures applied during storage, the chance of leakage of thermal heating fluids into the product is low.		If thermal heating fluids have been used, the storage company must provide for documentation on net losses and analyse accordingly, if necessary.	The use of water and steam heating is recommended.
Misuse of additives	C	low	high	3	PRP	Additives allowed for food oil applied to oil going to feed –or vice versa- for which use they may not have been approved.		Agree on clear specifications as regards use of additives	

Risk assessment of the chain of coconut oil products

E. Transport by ocean going vessel									
HAZARD	CAT.	CHANCE	SERIOUSNESS	RISK CLASS.	PRP or CCP	JUSTIFICATION	LEGISLATION, INDUSTRY STANDARDS AND/OR CONTRACT TERMS	CONTROL MEASURE	REMARKS
Transport contamination - Contamination by previous cargoes that is present in tanks or pipes - Contamination by cleaning agents	C	medium	medium	3	PRP	Ocean going vessels carrying oils and fats for edible use into the EU must have as an absolute minimum as the immediate previous cargoes a product that is either a foodstuff or a product appearing on the EU list of accepted immediate cargoes of Directive 96/3/EC.	Directive 96/3/EC (Derogation to EC Regulation No. 852/2004) requires that previous loads have to be checked. FOSFA contracts oblige the seller to inform the buyer what the three preceding cargoes have been during the sea transport of oils and fats. FEDIOL Code of Practice for the transport in bulk of oils and fats into or within the European Union*.	Before loading, FOSFA recognised superintendents need to check whether tanks are sufficiently cleaned. Before unloading, FOSFA recognised superintendents need to check the ship's logbook on compliance with previous cargo lists. The use of dedicated pipe lines at loading and unloading. Check ship log-book.	
Solvent from coating	C	low	high	3	PRP	Solvents from virgin coatings migrating to the oil, which may end up in the fatty acid distillates during refining		Use stainless steel tanks or in case of use of tanks with virgin coating, do not feed the FAD	
Thermal heating fluids (THF) from failing equipment	C	low	high	3	PRP	Toxic thermal heating fluids may still be used. However, due to the relatively low heating temperatures applied during transport, the chance of leakage of thermal heating fluids into the product is low.		If thermal heating fluids have been used, the transporter of the oil must provide for documentation on possible net losses and analyse accordingly if necessary.	The use of water and steam heating is recommended.
Hydraulic oils from failing portable pumps	C	low	high	3	PRP	Hydraulic oils from portable pumps may be toxic.		The use of portable pumps with clear separation of hydraulic motor from pump. If not, hydraulic oils of food grade quality must be used.	Hydraulic motors that are directly linked to the pump allow for unwanted leakages of hydraulic oil into the vegetable oil in case of seal failure.

*<http://www.fediol.be/5/index2.php>