


<b>FOOD SAFETY AND QUALITY MANUAL</b>			
DUE DILIGENCE TESTING	REF #	QPM 002	
	ISSUE #	3	
	DATE#	Jun 2016	

Periodic testing of products will be undertaken to ensure that the requirements of current legislation are met. Details of sampling and testing regime can be found in the QPM 002 R001 'Due Diligence Testing Schedule'.

Due Diligence Testing includes:

## Heavy Metal Analysis

Lead  
Arsenic  
Cadmium  
Mercury  
Nickel  
Tin

These are all considered to be low risk (see FEDIOL Risk Analysis for palm and palm kernel products, 16 December 2010)

## Pesticide Residues


Organo chlorine pesticides  
Organo phosphorus pesticides  
Pyrethroids  
Carbamates  
Other Pesticides

These are all considered to be low risk (see FEDIOL Risk Analysis for palm and palm kernel products, 16 December 2010)

## Dioxins

The common term dioxins is often used for a number of chemically related lipophilic compounds (*polychlorinated dibenzo-para dioxins (PCDDs)* and *polychlorinated dibenzofurans (PCDFs)*), including certain dioxin-like *polychlorinated biphenyls (PCBs)* with similar toxic properties. However, the denomination of dioxin is given to *2,3,7,8-tetrachloro-dibenzo-para-dioxin (TCDD)*. Of the identified dioxin-related compounds, which have a dioxin-like chemical structure, only about 30 are considered to have significant toxicity, with TCDD being the most toxic. Although dioxins and dioxin-like PCBs show similarities in their toxicological and chemical behaviour, their sources may be different.

There are also some non-dioxin-like PCBs (PCB 28, PCB 52, PCB 101, PCB 138, PCB 153 and PCB 180) for which legislation has now come into force.

<b>FOOD SAFETY AND QUALITY MANUAL</b>			
DUE DILIGENCE TESTING	REF #	QPM 002	
	ISSUE #	3	
	DATE#	Jun 2016	

These are considered to be low risk (see FEDIOL Risk Analysis for palm and palm kernel products, 16 December 2010), providing that the bleaching earth used in refining is sourced from a supplier in compliance with the FEDIOL code of practice for the purchase of fresh bleaching earth.

## Polycyclic Aromatic Hydrocarbons (PAH)

The term PAH is used to describe a range of related chemicals that are the result of combustion, and have the potential to be present in food. There are 17 PAH's that will be checked for: acenaphthene, acenaphthylene, anthracene, benz[a]anthracene, benzo[a]pyrene, benzo[e]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[j]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, fluoranthene, fluorine, indeno[1,2,3-c,d]pyrene, phenanthrene, pyrene

These are not considered to be a risk for palm oil, but they are considered a medium risk for palm kernel oil, due to poor drying practices (see FEDIOL Risk Analysis for palm and palm kernel products, 16 December 2010).

## Microbiological Contamination

Refined edible vegetable oils are considered microbiologically safe due to the fact that they do not contain water and are processed at high temperature, which effectively removes any risk of microbiological growth.

Margarines which do contain water are also considered to be a low risk for microbial contamination, routine screening is undertaken on samples for the contaminants in the table below:

Microbe	Unit	Maximum Expected Level	Caution Level	Action Level
E. Coli	cfu/g	<10	----	>10
Clostridium Perfringens	cfu/g	<10	----	>10
Staphylococcus Aureus	cfu/g	<20	----	>20
Bacillus Cereus	cfu/g	<20	----	>20
Enterococci Faecal Streptococci	cfu/g	<20	----	>20
Aerobic Mesophilic Spores	cfu/g	<10 <sup>1</sup>	>10 <sup>2</sup>	>10 <sup>3</sup>
TACC @ 30°C	cfu/g	<10 <sup>3</sup>	>10 <sup>4</sup>	>10 <sup>5</sup>
Salmonella spp	/25g	Absent	----	----
Lactobacillus	cfu/g	<10 <sup>1</sup>	>10 <sup>2</sup>	>10 <sup>3</sup>
Listeria spp	/25g	Absent	----	----
Yeasts	cfu/g	<10 <sup>3</sup>	>10 <sup>4</sup>	>10 <sup>5</sup>
Moulds	cfu/g	<10 <sup>3</sup>	>10 <sup>4</sup>	>10 <sup>5</sup>

All analyses will be performed by approved external laboratories.