

Legislative Proposals on Regulation of Edible Fats and Oils and Recycling of "Waste Cooking Oils"

July 2015



食物及衛生局
Food and Health
Bureau



環境局
Environment
Bureau



食物環境衛生署
Food and Environmental
Hygiene Department



食物安全中心
Centre for Food Safety



環境保護署
Environmental Protection
Department

Consultation Document

Legislative Proposals on Regulation of Edible Fats and Oils and Recycling of “Waste Cooking Oils”

Food and Health Bureau

Environment Bureau

**Food and Environmental
Hygiene Department**

**Environmental Protection
Department**

Centre for Food Safety

July 2015

Content

| | | Page |
|------------------|--|--------------|
| Chapter 1 | Introduction | 1-4 |
| Chapter 2 | Situation in Hong Kong | 5-7 |
| Chapter 3 | International Scene | 8-11 |
| Chapter 4 | Legislative Proposals | 12-21 |
| Chapter 5 | Views Sought | 22-24 |
| Annex I | Maximum Levels Specifically Established for Edible Fats and Oils Under the Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995, Amendment 2014) | 25 |
| Annex II | Codex Requirements on Other Quality and Composition Factors in Named Animal Fats | 26-27 |
| | Codex Requirements on Other Quality and Composition Factors in Named Vegetable Oils | 28-29 |
| | Codex Requirements on Other Quality and Composition Factors in Olive Oils and Olive Pomace Oils | 30-31 |
| | Codex Requirements on Other Quality and Composition Factors in Edible Fats and Oils Not Covered By Individual Standards | 32 |
| Annex III | Requirements on Safety Parameters for Edible Fats and Oils in Different Countries/Places | 33-35 |
| | Requirements on Quality Parameters for Edible Fats and Oils in Different Countries/Places | 36-37 |
| Annex IV | Official Certificates for Edible Fats and Oils Issued by Different Countries/Places | 38-41 |
| Annex V | Summary of the Proposed Amendments to Standards for Edible Fats and Oils | 42-43 |

Chapter 1 Introduction

1.1 Ensuring food safety is a priority of the Hong Kong Special Administrative Region Government. The Government has been committed to enhancing the food safety level through a multi-pronged approach and ensuring that the food on sale in Hong Kong is fit for human consumption. The work of the Government includes:

- (a) formulating and updating the legislation to enforce regulation;
- (b) monitoring food safety by taking samples for testing at the import, wholesale and retail levels and enforcing the law against problematic food;
- (c) maintaining close liaison with regulatory authorities of the main places of origin of food and undertaking early monitoring at source; and
- (d) enhancing consumer education and communication with the trade.

1.2 Edible fats and oils are commonly used for cooking in Hong Kong. According to the Hong Kong Edible Oils Association, the annual per capita oil consumption of Hong Kong people was over 11 kilograms (kg) in 2007. The Centre for Food Safety (CFS), through its routine food surveillance programme, takes samples of edible fats and oils at the import, wholesale and retail levels for chemical testing. Chemicals tested include erucic acid, mycotoxins, preservatives, anti-oxidants, metallic contaminants and colouring matter. In 2012, 2013 and 2014, a total of 200, 450 and 800 edible fat and oil samples were tested respectively for different chemicals under the food surveillance programme. Three samples taken in 2012 were found to contain Benzo[a]pyrene (B[a]P), with levels ranging from

14 micrograms per kilogram ($\mu\text{g}/\text{kg}$) to 17 $\mu\text{g}/\text{kg}$, exceeding the action level¹ of the CFS. The results of all samples taken in 2013 were satisfactory, while two samples were found to have excessive peroxide value² in 2014.

The Incident of “Substandard Lard”

1.3 An incident of “substandard lard” happened in Taiwan in September 2014. At first, the Taiwanese authorities announced that a total of 25 items of lard/lard products manufactured by Chang Guann Co., Ltd (Chang Guann) in Taiwan might have been contaminated as they were produced from substandard ingredients, such as collected waste oils and/or lard for animal feed. Subsequently, the Taiwanese authorities notified the CFS that some of the contaminated lard/lard products had been exported to Hong Kong and investigation by the CFS revealed that they had already been used to manufacture food products. Accordingly, the Director of Food and Environmental Hygiene (DFEH) made a Food Safety Order which took effect from noon on 14 September 2014 to prohibit the import into and the supply within Hong Kong of all lard/lard products produced by Chang Guann in Taiwan on or after 1 March 2014 and all food products made with those lard/lard products, and to mandate recall and proper disposal of all the products concerned.

1.4 Some fat and oil products of Taiwan were also found or suspected to be produced with substandard ingredients later (such as lard for animal feed, beef tallow for animal feed and inedible fats and oils of both animal and plant origins). The CFS had reasons to suspect that such malpractices in edible fat and oil production could

¹ In 2005, the Joint Food and Agriculture Organisation of the United Nations/World Health Organisation Expert Committee on Food Additives stated that the estimated intakes of polycyclic aromatic hydrocarbons (PAHs) including B[a]P were of low concern for human health. In order to protect public health and address public concerns, the CFS has set an action level of 10 $\mu\text{g}/\text{kg}$ for B[a]P in edible oils. The level has been endorsed by the Expert Committee on Food Safety and is also applicable to fats. The Expert Committee noted that based on local consumption data, even in the unlikely event that all edible oils consumed by a person are contaminated with B[a]P at 10 $\mu\text{g}/\text{kg}$, the derived Margin of Exposure (MOE) will be greater than 10 000, indicating an estimated intake of B[a]P which is of low concern for human health. If the action level is exceeded, the CFS will take follow up actions, including enforcement actions where appropriate.

² Peroxide value is not a safety indicator, but a quality parameter to indicate the oxidation level of edible fats and oils. A product with a peroxide value exceeding the relevant standard indicates that its quality is unsatisfactory.

have been systemic³. As the safety and quality of Taiwan's fat and oil products remain questionable, the CFS announced on 9 October 2014 that it was necessary to take precautionary measures by prohibiting import into and supply within Hong Kong of all edible oils of animal origins from Taiwan in exercise of the power under the Public Health and Municipal Services Ordinance (Cap. 132). The CFS took further measures on 15 October by imposing a total ban on the import into and sale within Hong Kong of all edible oils (of both animal and plant origins) produced in Taiwan. In response to the announcements made by the Taiwan authorities and with a view to further safeguarding Hong Kong's public health, the DFEH made two Food Safety Orders on 29 October and 7 November 2014 respectively to put it beyond doubt that all edible fats and oils produced by four Taiwanese companies and all food products manufactured with such fats and oils were prohibited from import into and supply within Hong Kong, and to mandate their recall in a systematic manner so as to ensure that they are no longer in circulation in the local market.

1.5 In the incident, the CFS also discovered that lard suspected to be contaminated had been exported from Hong Kong to Taiwan. As the case might involve frauds, it was referred to the Police for further investigation. On 12 September 2014, three persons were arrested for conspiracy to defraud.

1.6 The "substandard lard" incident in Taiwan has caused considerable public concern. As an international commercial city, Hong Kong prides itself as a logistic hub, a famous tourist destination, a centre for gastronomic delights and a shopping paradise. The reputation is built on our regulatory systems which are on a par with those of the international standards, self-discipline of the industries, long-established business goodwill and international confidence in Hong Kong, etc. Hong Kong's products are renowned for their good quality. The incident, which involves export of a small amount of "substandard edible fats and oils" produced in Hong Kong to other places, is utterly unfair to the majority of our law-abiding edible fat and oil manufacturers. It has also adversely and seriously affected the long-standing

³ The Taiwanese authorities first announced on 4 September 2014 the incident of "substandard lard". On 11 September 2014, the Taiwanese authorities announced that a total of 25 items of lard/lard products manufactured by Chang Guann Co., Ltd (Chang Guann) in Taiwan might have been contaminated as they were produced from substandard ingredients, such as collected waste oils and/or lard for animal feed. On 8 October 2014, the Taiwanese authorities announced that another manufacturer, namely Cheng I Food Co., Ltd (Cheng I) manufactured substandard oil products and the case might involve frauds. The oil products manufactured by Cheng I were discovered to be produced from substandard ingredients, for example, lard for animal feed. The scope of affected products extended beyond lard/lard products to involve beef tallow, margarine and shortening. The FEHD had reasons to suspect that such malpractices in edible fat and oil production could have been systemic which involved not only lard/lard products, but also fats and oils of animal origin.

reputation of Hong Kong and our international image with far-reaching implications. In this connection, it is necessary for the food trade to comply with the relevant legal requirements in the production and use of edible fats and oils and in the processing of “waste cooking oils” so as to ensure food safety for the public. On the other hand, members of the public should stay vigilant and choose carefully products made by reputable manufacturers.

1.7 To forestall unscrupulous traders from threatening our food safety and jeopardising our reputation which is essential to Hong Kong’s success, and to maintain Hong Kong’s long-term competitiveness, it is necessary to strengthen regulation of the production and supply of edible fats and oils and to regularise these activities under the regulatory systems. After consulting the relevant international standards, the Food and Health Bureau and the Environment Bureau recommended that we should, in the light of Hong Kong’s circumstances, strengthen the regulation of edible fats and oils and the recycling of “waste cooking oils” through legislative amendments, with a view to striking a reasonable balance between effective market operation and public health protection.

1.8 This consultation paper puts forward legislative proposals on the regulation of edible fats and oils and the recycling of “waste cooking oils”. Your views on the proposals are welcome.

Chapter 2 Situation in Hong Kong

Local Market of Edible Oils

2.1 Hong Kong imports most of its edible oils from the Mainland (24%), Canada (20%), Brazil (18%), the United States (US) (10%), Argentina (8%), the United Arab Emirates (4%), Malaysia (3%), Taiwan (2%), Singapore (2%) and Thailand (1%).

Legislation Relating to Safety of Edible Fats and Oils

Production of Edible Fats and Oils

2.2 Under the Food Business Regulation (Cap. 132X), a food business engaged in the preparation of food for sale for human consumption off the premises must obtain a food factory licence issued by the Food and Environmental Hygiene Department (FEHD). As such, anyone who manufactures fat and oil products for human consumption in Hong Kong must obtain a food factory licence from the FEHD. At present, there are 11 licensed food factories⁴ in the territory permitted to manufacture/process edible oils/oil products for human consumption, but not lard and fats for human consumption.

2.3 If the production process of a licensed food factory involves boiling of lard, boiling of fat or melting of tallow, the premises must also obtain an offensive trade licence issued by the FEHD under the Offensive Trades Regulation (Cap. 132AX). At present, no factory manufacturing edible fats and oils in Hong Kong holds such a licence. As such, no licensed food factory in Hong Kong is allowed to carry on the business of producing edible lard for human consumption.

2.4 The premises which merely carry on the business of bottling or canning edible oil are exempted from holding a food business licence under the Food Business Regulation (Exemption from Section 31(1)) Notice (Cap. 132Z). Nevertheless, these premises are still required to register with the FEHD under the Food Safety Ordinance (Cap. 612) for their import and distribution businesses. In addition, the FEHD

⁴ As at 10 June 2015, nine of these licensed food factories were operating under a full licence while the remaining two were under a provisional licence.

officers conduct regular inspections to check the sanitary conditions of the premises concerned. At present, there are 26 premises⁵ carrying on the business of bottling and canning edible oil in the territory.

Import and Export of Edible Fats and Oils

2.5 Currently, there is no specific legislation to regulate the import and export of edible fats and oils in Hong Kong. However, the legislation regulating food safety in general is also applicable to edible fats and oils for human consumption. Edible fats and oils for export are only required to meet the statutory requirements of the authorities of the export destinations.

Food Safety Legislation Applicable to Imported Edible Fats and Oils for Human Consumption

2.6 Section 54 of the Public Health and Municipal Services Ordinance (Cap. 132) stipulates that all food for sale must be fit for human consumption. This requirement covers all food, including edible fats and oils.

2.7 The subsidiary legislation under the Public Health and Municipal Services Ordinance (Cap. 132) regulates the individual safety standards of food (including edible fats and oils). Examples include the following:

- (a) The Harmful Substances in Food Regulations (Cap. 132AF) regulate the import and sale of food containing harmful substances. The regulations stipulate the maximum concentration of aflatoxin and erucic acid allowed in edible fats and oils and other foods, and that malachite green is not allowed in any food (including edible fats and oils); and
- (b) The Food Adulteration (Metallic Contamination) Regulations (Cap. 132V) regulate the levels of metallic contamination in food. The maximum permitted concentration of four specified metals (arsenic, lead, mercury and tin) is applicable to any food of a description specified in the regulations, including edible fats and oils. There are also provisions in the Regulations that expressly prohibit the import, manufacture and sale of any food containing

⁵ Figure as at 10 June 2015.

any metal in such amount as to be dangerous or prejudicial to health.

Situation of the Recycling Market of “Waste Cooking Oils”

2.8 During the process of food preparation, “waste cooking oils” (including grease trap waste, used cooking oils and unused edible oils which, for reasons like spoilage, has to be disposed of) is produced in restaurants or food factories. Currently, some local restaurants sell the “waste cooking oils” to collectors, who will then export the collected “waste cooking oils”, or sell them to recyclers for industrial purposes, such as production of biodiesel, or used as materials or additives for other manufacturing processes.

2.9 From 2013 to 2014, the Hong Kong Productivity Council was commissioned by the Environmental Protection Department (EPD) to carry out a consultancy study. According to the estimation of the study, restaurants in Hong Kong produce about 16 000 tonnes of used cooking oil and not less than 160 000 to 180 000 tonnes of grease trap waste every year⁶.

2.10 The Hong Kong Collector/Recycler Directory is available on the Hong Kong Waste Reduction Website of the EPD. In addition, the List of Grease Trap Waste Collectors and the List of Grease Trap Waste Treatment Facilities can also be found on the EPD’s Green Restaurant Website. Whether individual collectors and facilities would like to be included in the lists is entirely voluntary. The lists are compiled to provide reference for those who intend to use the relevant collection and recycling services and they should by no means be taken as the EPD’s recommendation or approval for the services concerned.

Legislation Applicable to Recycling of “Waste Cooking Oils”

2.11 At present, there is no specific licensing system in place for regulating the recycling of “waste cooking oils” in Hong Kong. Subject to their respective business scope and practices, individual recyclers are required to comply with the relevant environmental protection legislation, such as obtaining a licence for discharge of wastewater.

⁶ According to the estimation by Hong Kong Productivity Council, not more than 10% of grease trap oil separated from grease trap waste treatment can be utilised for recycling.

Chapter 3 International Scene

Regulation of Edible Fats and Oils

3.1 Codex Alimentarius Commission (Codex) is an international body established in 1963 by the Food and Agriculture Organisation of the United Nations and the World Health Organisation to develop food standards and guidelines for protecting the health of consumers and ensuring fair trade practices in the food trade. Codex has set certain standards for edible fats and oils⁷. Besides, the authorities of some jurisdictions have laid down different requirements for edible fats and oils in the light of their own circumstances.

Codex Definition of Edible Fats and Oils

3.2 In accordance with the Codex definition, “edible fats and oils” mean food which is in a state for human consumption and is composed of glycerides of fatty acids of vegetable, animal or marine origin. They may contain small amounts of other lipids such as phosphatides, of unsaponifiable constituents and of free fatty acids naturally present in the fat or oil. Fats of animal origin must be produced from animals in good health at the time of slaughter and be fit for human consumption. Fats and oils that have been subjected to processes of modification (such as trans-esterification or hydrogenation) or fractionation are also included.

Relevant Codex Standards

3.3 The Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995) sets out the maximum levels of contaminants and toxins allowed in various types of food. Contaminants relating to edible fats and oils include arsenic and lead. Please see **Annex I** for details of the relevant standard.

3.4 Codex has also developed four sets of standards for different edible fats and oils:

⁷ According to the principles for establishing maximum levels (MLs) of contaminants in food laid down by Codex, MLs shall only be set for food in which the contaminant may be found in amounts that are significant for the total exposure of the consumer.

- (a) The Codex Standard for Named Animal Fats (CODEX STAN 211-1999) applies to lard, rendered pork fat, premier jus and edible tallow;
- (b) The Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999) applies to 24 types of vegetable oil including arachis oil, maize oil, canola oil, soya bean oil and sesameseed oil;
- (c) The Codex Standard for Olive Oils and Olive Pomace Oils (CODEX STAN 33-1981) applies to various types of olive oils and olive-pomace oils; and
- (d) The Codex Standard for Edible Fats and Oils not Covered by Individual Standards (CODEX STAN 19-1981) applies to edible fats and oils not covered by the above three standards, such as poultry fat, tea seed oil and walnut oil.

3.5 These standards set out the specific requirements for different types of edible fats and oils, covering essential composition and quality factors as well as labelling requirements etc. They also set out the maximum levels relating to other quality and composition factors intended for voluntary application by commercial partners and not for application by governments (see **Annex II**).

Regulation in Other Jurisdictions

Regulatory Control of Edible Fats and Oils

3.6 At present, some jurisdictions have set out the maximum levels of contaminants and toxins, including arsenic, lead, erucic acid, aflatoxin and/or B[a]P, allowed in edible fats and oils. Individual jurisdictions also regulate specified edible fats and oils through developing quality indicators, such as those for peroxide value and acid value. Please see **Annex III** for details.

Import and Export Regulation of Edible Fats and Oils

3.7 On the international front, there is no uniform requirement concerning whether imported edible fats and oil should be accompanied by official health certificates. The European Union (EU) and US require that imported edible fats and oils must meet the same or equivalent food hygiene and compositional standards as those produced within the EU and US respectively. Both the EU and US have no

specific requirements as to whether imported edible oils of plant origins should be accompanied by official health certificates, although the EU requires that food of animal origins (including lard and rendered fats) must be accompanied by official health certificates issued by the authority of the place of origin. In Singapore, importers of processed food (including edible fats and oils) are required to maintain regulated source documentation and produce them when requested by the relevant enforcement agency. These documents may include Certificate of HACCP (Hazard Analysis Critical Control Point), Certificate of GMP (Good Manufacturing Practices), health certificate, food factory licence, etc.

3.8 As for export requirements, exporting countries/places generally do not require that edible fats and oils for export must be accompanied by official health certificates. Nevertheless, different countries/places issue health certificates for specific edible fat and oil products if required by the importing countries/places. Examples include the veterinary certificate for lard issued by the Taiwan authority, the health certificate for peanut oil issued by the Mainland's Entry-Exit Inspection and Quarantine Bureau, the sanitary certificate for olive oil issued by the Italian authority, the "Phytosanitary Certificate" for olive oil and grape seed oil issued by the Spanish authority, the health certificate for corn oil by South Korea, the veterinary certificate for the export of lard and rendered fats by the Netherlands, etc. For edible oils of animal origins, the Canadian Food Inspection Agency (CFIA) issues a standard export certificate for meat and meat products to companies seeking to export such products. For edible oils of plant origins, no official certificate is issued. However, for canola oil manufactured in Canada, a "Manufacturer's Declaration for Export of Food Products manufactured in Canada" could be completed by the manufacturer and countersigned by the CFIA stating that the CFIA would have no objection to the sale of the product in Canada. Details are listed in **Annex IV**. Currently, the US Food and Drug Administration (FDA) does not issue any health certificate for export of edible plant oils. The FDA only issues "Certificates of Free Sale" for the products concerned, certifying that the products are marketed in the US or eligible for export, and that the FDA has no enforcement action taken or pending against the particular manufacturer.

Regulation of Recycling of "Waste Cooking Oils"

3.9 To ensure food safety, better manage effluent discharge and promote recycling, some countries and regions in Asia, Europe and North America have been regulating "waste cooking oils". Regulatory measures include licensing or registration of collectors/disposers of "waste cooking oils", restricting the delivery of

“waste cooking oils” to designated disposal facilities only and keeping complete transaction records.

Chapter 4 Legislative Proposals

4.1 The “substandard lard” incident has revealed that although the current food safety legislation and regulatory mechanism exercises some form of control over the ingredients, production and supply of edible fats and oils in Hong Kong, there is room for enhancement of regulation over the unlawful acts of unscrupulous manufacturers and suppliers regarding edible fats and oils as a particular food item.

4.2 On the law and regulation front, there is no specific regulatory legislation or safety standard for edible fats and oils in Hong Kong. Safe consumption of edible fats and oils is only regulated through general statutory provisions which cover all food items under a rather broad regulatory framework. The proposed regulatory system is a more specific one focusing on the safety of edible fats and oils.

4.3 On the law enforcement front, as most of our food (including edible fats and oils) comes from different places of the world, with the upstream activities of edible fats and oils production mainly conducted outside Hong Kong, the focus of our enforcement agencies is monitoring the downstream supply chain to prevent entry of “substandard fats and oils”. In the “substandard lard” incident, the CFS found that lard suspected to be contaminated had been exported from Hong Kong to Taiwan. As such, under the proposed regulatory system, uniform standards should be adopted for regulating the edible fats and oils produced domestically or outside Hong Kong and their supply, while adhering to the principle of fair trade and equal treatment. In other words, for the sake of comprehensive regulation and fair trade, the proposed legal requirements will cover all the processes involved, including production, use, disposal, import and export.

4.4 Based on the above principles, we consider that a multi-pronged approach should be adopted in respect of the overall production and supply chain of edible fats and oils in the local market, so as to ensure the safety of edible fats and oils imported into, sold and manufactured locally, and exported from Hong Kong. Measures to be taken include formulating specific regulatory requirements (by establishing statutory safety standards for edible fats and oils for human consumption), improving source management (by introducing a certificate system), regulating the production process (by issuing food factory licenses), strengthening inspection and testing (through routine surveillance conducted by regulatory bodies and self-inspection and testing by the trade), enhancing food traceability (by requiring importers and manufacturers of edible fats and oils to provide a copy of the relevant

certificate to their downstream distributors, retailers or restaurants), monitoring the disposal of waste oils (preventing waste cooking oils, which is unfit for human consumption, from re-entering the local food chain), and making export regulatory arrangements.

4.5 However, the so-called “gutter oil”, “tainted oil” and “substandard oil” are all generic terms without a scientific definition. There is no universal testing standard to identify this kind of oil in the international community. Regulatory authorities can only focus on testing for or identifying harmful substances possibly present in the oil, and use the testing results as a reference indicator of whether the oil concerned is fit for human consumption, but it is impossible to determine whether it is “substandard oil”. According to some studies, “substandard oil” after processing may be able to meet the standards of individual harmful substances. Therefore, there are inherent limitations even if we establish a specific regulatory framework for edible fats and oils through legislation. In fact, it takes the interaction and co-operation among the Government, the trade and consumers to ensure food safety. The introduction of a regulatory system will serve this purpose only when it is complemented by proper regulation, self-discipline, education and publicity.

Regulation of Edible Fats and Oils

Definition

4.6 For edible fats and oils, we propose to make reference to the Codex definition to ensure that Hong Kong’s regulatory regime is aligned with international practices. The relevant definition is as follows:

“Edible fats and oils” means food which is in a state for human consumption and is composed of glycerides of fatty acids derived from any plant or animal⁸ or bird or fish. They may contain small amounts of other lipids such as phosphatides, of unsaponifiable constituents and of free fatty acids naturally present in the fat or oil. Fats and oils that have been subjected to processes of modification (such as transesterification or hydrogenation) or fractionation are included.

⁸ Under the Public Health and Municipal Services Ordinance (Cap. 132), “animal” includes reptiles, but does not include birds or fish.

4.7 According to the above definition, all edible fats and oils generally used in the preparation of food, such as fats and oils used for cooking and frying, table oils or salad oils, will be subject to the proposed regulation. As categorised by Codex, fat emulsions (such as emulsified products including butter and margarine) fall outside the scope of edible fats and oils and are governed by different sets of standards. We therefore propose to exclude fat emulsions and cocoa butter from the proposed regulation. However, edible fats and oils that are used in the preparation of fat emulsions will be covered.

4.8 Examples of products covered in and excluded from the proposed regulatory regime are as follows:

Products covered in the proposed regulatory regime

- Vegetable oils, such as olive oil, cottonseed oil and peanut oil
- Animal fats, such as lard and tallow
- Edible fats and oils used as ingredients

Products excluded from the proposed regulatory regime

- Fat emulsions, including butter, margarine, blends of butter and margarine, fat-reduced butter, fat-reduced margarine and their mixtures
- Cocoa butter

4.9 We suggest making it a statutory requirement that “waste cooking oils” or “substandard fats and oils” not intended for human consumption should not be used as ingredients for the production of edible fats and oils. At present, there is no consensus on the definition of “waste cooking oils”, or that of “substandard fats and oils” not intended for human consumption in the international community. We propose to define “waste cooking oils” as “oils abandoned from any cooking process for human consumption other than those from household, regardless whether they have been used for its original purpose⁹”. We understand that the food trade may use the same edible fats and oils more than once for the said purpose, and this definition exempts such edible fats and oils from the regulation. “Substandard fats and oils” not intended for human consumption will include fats and oils abandoned by food premises (such as cooking fats and oils which have passed their expiry date and grease trap waste), fats and oils generated and abandoned in the handling of meat or meat products, and fats and oils for animal feed.

⁹ Including grease trap waste, used cooking oil and unused oil abandoned for reasons such as spoilage.

Proposed Regulation on the Import and Export of Edible Fats and Oils

4.10 We propose, through legislative amendments and strengthened surveillance, to improve source management, regulate the production process, strengthen inspection and testing, enhance safety standards and penalty system, etc. We propose making it a statutory requirement that “waste cooking oils” and “substandard fats and oils” not intended for human consumption should not be used as ingredients for edible fats and oils produced in or imported into Hong Kong.

4.11 Specifically, we propose that edible fats and oils manufactured in Hong Kong (for export or domestic sale) should be accompanied by an official certificate or a certificate issued by an officially recognised independent testing institution (such as institutions which can perform the relevant tests under the Hong Kong Laboratory Accreditation Scheme). The FEHD will regulate local edible fat and oil production activities by its routine inspection and enforcement work. We suggest incorporating this requirement into the conditions of licences issued under the Food Business Regulation (Cap. 132X). The FEHD may cancel the license of any licensed factory manufacturing edible fats and oils if it is found to be in breach of the condition.

4.12 As regards edible fats and oils imported to Hong Kong, as the local regulatory agencies cannot exercise its jurisdiction outside Hong Kong, we will require importers of edible fats and oils to provide an official certificate or a certificate issued by an officially recognised independent testing institution certifying that the edible fats and oils imported into Hong Kong fulfill the above-mentioned requirements, i.e. meeting the proposed statutory standards and being fit for human consumption. This is to ensure that the imported fats and oils align with the requirements for edible fats and oils produced locally, in order to accomplish similar regulatory effects.

4.13 As one of the most important logistics and trading hubs in the world, imposing equivalent import and export regulation control would help demonstrate our sense of responsibility.

Provision of Copies of Certificates or Other Supporting Documents to Downstream Distributors or Retailers

4.14 We propose to make it a statutory requirement for importers and manufacturers of edible fats and oils to provide copies of certificates or other supporting documents (see paragraphs 4.10 to 4.12 above) to their downstream distributors, retailers or food premises for the FEHD’s inspection. At present, the

Food Safety Ordinance (Cap. 612) requires any person who imports, acquires or supplies by wholesale food in Hong Kong in the course of business to keep transaction records (such as keeping the receipts/invoices) of the business from which he acquired the food and the business to which he supplied the food. Given that it is the current practice of the edible fat and oil trade to request and keep transaction records for compliance with the ordinance, we consider that this proposed requirement will not impose an undue compliance burden on the trade.

Proposed Safety Standards for Edible Fats and Oils

Metallic Contaminants

4.15 We propose to tighten the maximum permitted concentration of arsenic and lead in edible fats and oils in accordance with the Codex standards (See paragraph 2.7(b) above and **Annex V**). According to the food surveillance results of the CFS, the level of arsenic and lead in edible fats and oils available in local market can generally meet the proposed maximum permitted concentration requirements. As such, tightening the legislative requirements is not likely to affect food supply.

4.16 For other metallic contaminants currently under regulatory control, like mercury and tin, Codex has not established any specific requirement on their maximum permitted concentration in edible fats and oils. Moreover, the CFS has not found any associated food safety risks. The CFS therefore proposes to maintain the existing legislative requirements.

Erucic Acid

4.17 Erucic acid in edible oils is a monounsaturated fatty acid. Tests on experimental animals showed that excessive intake of erucic acid might damage their heart tissues, but this link has not yet been established in humans. To safeguard food safety, the existing Harmful Substances in Food Regulations (Cap. 132AF) stipulate that the level of erucic acid in edible fats and oils shall not exceed 5% by weight of the total fatty acid content. We propose to follow the requirements in the Codex Standard for Named Vegetable Oils (Codex Stan 210-1999) and lower the maximum level of erucic acid in low-erucic acid rapeseed oil (canola oil). The maximum level of erucic acid in other edible fats and oils will remain unchanged and in line with the EU standards.

4.18 According to the food surveillance results of the CFS, the erucic acid level in low-erucic acid rapeseed oil available in local market generally meets the proposed standard. Therefore, tightening the requirement will not affect food supply.

Aflatoxins

4.19 The maximum concentration of aflatoxins in edible fats and oils is stipulated in the existing Harmful Substances in Food Regulations (Cap. 132AF). Although Codex has not established any maximum level of aflatoxins in edible fats and oils, we propose to lower the maximum level of aflatoxins in edible fats and oils in the legislation, after taking into account the health impact of aflatoxins¹⁰ and examining the practices of different jurisdictions. The proposed maximum level, which is on par with that of Singapore, is lower than some other jurisdictions.

4.20 According to the CFS's food surveillance results, 99% of the edible fat and oil samples meet the proposed standard. As such, the impact of the proposed limit on food supply will be minimal.

B[a]P

4.21 Currently, there is no regulatory standard in Hong Kong to control the B[a]P¹¹ level in food in Hong Kong. The CFS has adopted an action level, endorsed by the Expert Committee on Food Safety, of 10 µg/kg for B[a]P in edible oils. This action level also applies to fats. The CFS's food surveillance results (2012 - 2014) showed that about 1% of the edible fat and oil samples contained B[a]P level greater than 10 µg/kg i.e. current local action level and Mainland standard, while about 5% and 9% of the samples exceeded 5 µg/kg and 2 µg/kg i.e. EU and Korean standards respectively.

4.22 We propose to establish a regulatory standard for B[a]P with a maximum limit at 5 µg/kg by taking into account the ALARA (as low as reasonably

¹⁰ Aflatoxins can cause both acute and chronic toxicity. Aflatoxin B1 is the most potent aflatoxin and can cause acute liver damage and cirrhosis in animals. Naturally occurring aflatoxins, including aflatoxin B1, has been classified as a human carcinogen (Group 1) by the International Agency for Research on Cancer (IARC). Aflatoxin M1 is also classified by IARC as a possible human carcinogen (Group 2B). The level of aflatoxin can be substantially reduced in the refining process of vegetable oils.

¹¹ B[a]P is toxic to genes and can cause cancer in human. B[a]P is a kind of polycyclic aromatic hydrocarbons (PAHs). PAHs are ubiquitous in the environment. When cooking oil is heated during processing, B[a]P may also be generated. Refining processes can reduce the level of B[a]P in cooking oil and the final levels depend on the refining conditions adopted.

achievable) principle to control contaminants in food and by making reference to the practices adopted by different jurisdictions. Feasibility of the industry to comply with the proposed standard has also been considered. We expect that the relevant proposal can strike a balance between protecting public health and maintaining stable supply of edible fats and oils in Hong Kong.

Proposed Quality Parameters for Lard

4.23 While we have always been committed to enhancing food safety, we will also take into consideration public concern over the quality of individual food items. In response to the recent food incidents, we propose to refer to the practices of some jurisdictions and set our own statutory standards for peroxide value and acid value in lard, with a view to enhancing the quality of the relevant products in the market. However, we do not intend to introduce too many statutory standards to regulate the quality of edible fats and oils, in order to avoid incurring excessive extra costs for the trade and creating unnecessary trade barriers where it does not pose a risk to the public health.

4.24 A comparison between the standards adopted by Codex and some jurisdictions is at Annex III, and a comparison between our proposed standards for edible fats and oils and those currently in force is at Annex V.

4.25 In addition, we consulted the Expert Committee on Food Safety in December 2014 on the proposal to regulate the safety and quality of edible fats and oils. The Expert Committee is in support of the direction of the proposed standards.

Strengthening Regulation of Recycling of “Waste Cooking Oils”

4.26 The EPD proposes to make legislative amendments to introduce specific provisions for “waste cooking oils” in the Waste Disposal Ordinance (Cap. 354). The proposed regulatory framework is as follows:

- (a) “Waste cooking oils” is defined as “oils” abandoned from any cooking process for human consumption other than those from household, regardless whether they have been used for its original purpose¹¹”.

¹² Including grease trap waste, used cooking oil and unused oil abandoned for reasons such as spoilage.

- (b) Regulation of “waste cooking oil” collectors: the EPD proposes that all “waste cooking oil” collectors, including those who collect “waste cooking oils” from restaurants and food factories and “waste cooking oil” traders, must hold a waste collection licence issued under the Waste Disposal Ordinance (Cap. 354). With reference to the provisions in the Waste Disposal Ordinance (Cap. 354), the EPD will formulate licensing requirements of the “waste cooking oil” collectors proposed to be regulated. The major objectives are to ensure (i) collectors undertake to develop a proper “waste cooking oil” collection system and keep proper documentary records of the flow of “waste cooking oils”, in order to prevent improper handling, and (ii) “waste cooking oils” will only be sold or handed over to another holder of “waste cooking oil” licence (e.g. collector or disposer). Collecting “waste cooking oils” without a licence will be subject to a fine/imprisonment once convicted.
- (c) Regulation of “waste cooking oil” recyclers: the EPD proposes that all “waste cooking oil” disposers must hold a waste disposal licence under the Waste Disposal Ordinance (Cap. 354). Disposers include local processors e.g. biodiesel plants and related government facilities. “Waste cooking oil” disposers who carry out business without a valid waste disposal licence will be subject to a fine/imprisonment once convicted. With reference to the provisions in the Waste Disposal Ordinance (Cap. 354), the EPD will formulate licensing requirements of the “waste cooking oil” disposers proposed to be regulated. The disposers will have to ensure that all their disposal facilities are operating in compliance with the applicable permits/licences. The major objectives are to ensure all licensed disposers can demonstrate that (i) they have a proper operation system and keep proper documentary records of the flow of “waste cooking oils”, in order to prevent improper handling, and (ii) “waste cooking oils” will only be recycled locally for legitimate industrial re-use.

4.27 Regulation of importers/exporters of “waste cooking oils”: the EPD also proposes that importers and exporters of “waste cooking oils” must secure a licence. In addition, all “waste cooking oil” importers and exporters have to obtain a

permit issued under the Waste Disposal Ordinance (Cap. 354) to cover all import or export shipments of “waste cooking oils”.

4.28 The EPD also proposes that, except for licensed “waste cooking oil” exporters who export “waste cooking oils” to places outside Hong Kong in accordance with the terms and conditions of the permits, any person, including “waste cooking oil” producers like restaurants and food factory operators, who allows or causes “waste cooking oils” to be sold, delivered, collected or handed over to a party without a “waste cooking oil” licence under the Waste Disposal Ordinance (Cap. 354) commits an offence and will be subject to a fine/imprisonment once convicted.

4.29 To strengthen the above mechanism, the FEHD will impose additional licensing conditions to require all restaurants, factory canteens, food factories and bakeries to hand over their “waste cooking oils” to collectors licenced by the EPD under the amended Waste Disposal Ordinance (Cap. 354) for further disposal. They are also required to keep records accordingly. Otherwise, the licence holders will be in breach of the licensing conditions and liable to penalties such as cancellation of licences.

4.30 Before effecting amendments to the Waste Disposal Ordinance (Cap. 354), the FEHD will work in collaboration with the EPD. The FEHD proposes that an additional licensing condition be imposed on the 21 400 or so food premises operating under a licence for a restaurant, factory canteen, food factory or bakery, requiring that any “waste cooking oils” produced during the cooking process on the licensed premises must be handed over to a collector, disposer or exporter registered by the EPD for disposal. In the light of the licensing condition imposed by the FEHD, the EPD will introduce corresponding administrative measures to register eligible local collectors, disposers and exporters of “waste cooking oils”. As a condition for registration, a registered collector should only hand over the “waste cooking oils” so collected to a registered disposer or exporter, or another registered collector. All registered collectors, disposers and exporters must keep proper transaction records of collection and delivery of “waste cooking oils” for 12 months for inspection by the EPD.

4.31 The FEHD will require food premises issued with the above licences to record the dates on which “waste cooking oils”, grease trap waste and other waste cooking oils and fats are collected from their premises, their respective quantities, and the names and addresses of the collectors and recyclers. The licence holders are required to keep the relevant records for at least 12 months. The FEHD will conduct random checks to ensure that “waste cooking oils”, grease trap waste and other waste

cooking oils and fats will not be refined again into oils for human consumption or their raw materials. After the implementation of the above measures, the FEHD will issue warning to any licence holders found to be in breach of the relevant licensing conditions. For repeat offenders, the FEHD will consider cancelling their licences.

4.32 As regards the used cooking oils generated during the cooking process by individuals or households, given the significant number of households involved, the small amount of oils involved and the difficulty in separating them from other kitchen waste, the FEHD and EPD do not plan to regulate the recycling of such kind of cooking oils for the time being.

Grace Period

4.33 We propose to provide a reasonable grace period for the trade to refine its product formula where necessary to meet the new requirements. This also ensures that there will be adequate private laboratories with the necessary testing equipment and techniques to carry out the tests. The duration of the grace period will be determined after thorough consideration of the views received during the consultation.

Chapter 5

Views Sought

5.1 The Government proposes to regulate the safety of edible fats and oils and the recycling of “waste cooking oils” by way of legislation. The proposed regulatory measures set out in Chapter 4 include the following major elements:

- (a) On regulation of imported edible fats and oils, “waste cooking oils” and “substandard fats and oils” not intended for human consumption should not be used as ingredients for the production of edible fats and oils imported into Hong Kong. All imported edible fats and oils must meet the proposed statutory standards. To ensure that imported edible fats and oils comply with the relevant requirements, we will require importers to provide an official certificate issued by the place of origin, or a certificate issued by an independent testing institution recognised by the government of the place of origin, or any other supporting documents, certifying that the edible fats and oils imported into Hong Kong are fit for human consumption;
- (b) Edible fats and oils manufactured in Hong Kong for export or domestic sale should be accompanied by an official certificate or a certificate issued by an officially recognised independent testing institution to certify that the edible fats and oils are fit for human consumption. This requirement is in alignment with that for imported edible fats and oils;
- (c) Importers of edible fats and oils should also provide copies of certificates or other relevant documents to their downstream distributors, retailers or food premises for the FEHD's inspection;
- (d) A legislative framework is proposed for regulating “waste cooking oils”; and
- (e) Grace period will be provided to allow the trade sufficient time to make necessary preparation for meeting the new requirements.

5.2 The regulatory proposals aim to introduce a specific regulatory framework for edible fats and oils to ensure that they meet the safety standards and, through a certificate system, prevent the import or export of problematic edible fats

and oils. Although the proposals may incur additional compliance costs on the trade, we believe that they will help build public confidence, which is essential to the sustainable development of the industry. In drawing up the regulatory proposals, we seek to strike a reasonable balance between protecting public health and facilitating market operation. After the legislative consultation, we will review and optimise the regulatory measures in the light of practical need and operational experience. The Government welcomes your views on the proposed regulatory framework. Please send your comments by letter, facsimile or e-mail to the Centre for Food Safety or the Environmental Protection Department before 6 October 2015:

Centre for Food Safety

Centre for Food Safety

Food and Environmental Hygiene Department

43/F, Queensway Government Offices,

66 Queensway, Hong Kong.

Facsimile : 2893 3547

E-mail address : edible_oils@fehd.gov.hk

Environmental Protection Department

Waste Reduction and Recycling Group

Environmental Protection Department

28/F, Southorn Centre, 130 Hennessy Road, Wan Chai, Hong Kong

Facsimile : 2574 6571

E-mail address : wco_consultation@epd.gov.hk

5.3 The Government will take into account the views received before finalising the details of the legislative proposals.

5.4 Members of the public are free to supply their personal data when giving views on the consultation document. Any personal data provided with a submission will only be used for the purpose of this consultation exercise.

5.5 The submissions and personal data collected may be transferred to the relevant government bureaux, departments or agencies for purposes directly related to this consultation exercise. The parties receiving the data are bound by such purposes in their subsequent use of the data.

5.6 The names and views of individuals and organisations submitting their views in response to the consultation document (senders) may be published for public viewing after conclusion of the consultation exercise. The Centre for Food Safety may, either in discussion with others or in any subsequent report, whether privately or publicly, quote the senders and the views they submitted in response to the consultation document. We will respect the wish of senders to remain anonymous and/or keep the views confidential in part or in whole, but if no such wish is indicated, it will be assumed that the sender can be named and his views be published for public information.

5.7 Any sender providing personal data to the Centre for Food Safety in his submission will have the right of access and correction with respect to such personal data. Any request for data access or correction of personal data should be made in writing to the contact specified in paragraph 5.2 above.

Maximum Levels Specifically Established for Edible Fats and Oils
Under the Codex General Standard for Contaminants and Toxins in Food and Feed
(CODEX STAN 193-1995, Amendment 2014)

Arsenic, total

| Product Name | Maximum Level (mg/kg) | Portion of the Commodity/Product to which the ML Applies |
|----------------------|----------------------------------|---|
| Edible fats and oils | 0.1 | Whole commodity |

Lead

| Product Name | Maximum Level (mg/kg) | Portion of the Commodity/Product to which the ML Applies |
|----------------------|----------------------------------|---|
| Edible fats and oils | 0.1 | Whole commodity as prepared for wholesale or retail distribution |

Codex Requirements on Other Quality and Composition Factors
in Named Animal Fats*

1. QUALITY CHARACTERISTICS

1.1 Colour:

| | |
|--------------------|-----------------------------|
| Rendered pork fat: | White when solid |
| Lard: | White to cream |
| Premier jus: | Creamy white to pale yellow |
| Edible tallow: | Off white to pale yellow |

1.2 Odour and Taste:

Characteristic and free from foreign and rancid odour and taste.

Maximum level

1.3 Matter Volatile at 105°C:

0.3 %

1.4 Insoluble Impurities:

0.05 %

1.5 Sodium Soap Content:

| | |
|-------------------|---------|
| lard | nil |
| premier jus | nil |
| rendered pork fat | 0.005 % |
| edible tallow | 0.005 % |

1.6 Iron (Fe):

1.5 mg/kg

1.7 Copper (Cu):

0.4 mg/kg

1.8 Acid Value:

| | |
|-------------------|-----------------------------------|
| lard | 1.3 mg KOH/g fat = ffa max 0.65 % |
| premier jus | 2.0 mg KOH/g fat = ffa max 1.00 % |
| rendered pork fat | 2.5 mg KOH/g fat = ffa max 1.25 % |
| edible tallow | 2.5 mg KOH/g fat = ffa max 1.25 % |

1.9 Peroxide Value:

up to 10 milliequivalents active oxygen/kg fat

* It is intended for voluntary application by commercial partners and not for application by governments.

2. CHEMICAL AND PHYSICAL CHARACTERISTICS

| | Lard | Rendered pork fat | Premier jus | Tallow |
|--|-------------|------------------------------|--------------------|---------------|
| 2.1 Relative Density (40°C/water at 20°C) | 0.896-0.904 | 0.894-0.906 | 0.893-0.904 | 0.894-0.904 |
| 2.2 Refractive Index (ND 40°C) | 1.448-1.460 | 1.448-1.461 | 1.448-1.460 | 1.448-1.460 |
| 2.3 Titre (°C) | 32-45 | 32-45 | 42.5-47 | 40-49 |
| 2.4 Saponification Value (mg KOH/g fat) | 192-203 | 192-203 | 190-200 | 190-202 |
| 2.5 Iodine Value (Wijs) | 55-65 | 60-72 | 36-47 | 40-53 |
| 2.6 Unsaponifiable Matter (g/kg) | ≤ 10 | ≤ 12 | ≤ 10 | ≤ 12 |

Codex Requirements on Other Quality and Composition Factors
in Named Vegetable Oils*

1. QUALITY CHARACTERISTICS

1.1 The **colour, odour and taste** of each product shall be characteristic of the designated product. It shall be free from foreign and rancid odour and taste.

| | <u>Maximum level</u> |
|--------------------------------------|---|
| 1.2 Matter Volatile at 105°C: | 0.2 % m/m |
| 1.3 Insoluble Impurities: | 0.05 % m/m |
| 1.4 Soap Content : | 0.005 % m/m |
| 1.5 Iron (Fe): | |
| Refined oils | 1.5 mg/kg |
| Virgin oils | 5.0 mg/kg |
| 1.6 Copper (Cu) : | |
| Refined oils | 0.1 mg/kg |
| Virgin oils | 0.4 mg/kg |
| 1.7 Acid Value: | |
| Refined oils | 0.6 mg KOH/g Oil |
| Cold pressed and virgin oils | 4.0 mg KOH/g Oil |
| Virgin palm oils | 10.0 mg KOH/g Oil |
| 1.8 Peroxide Value: | |
| Refined oils | up to 10 milliequivalents of active oxygen/kg oil |
| Cold pressed and virgin oils | up to 15 milliequivalents of active oxygen/kg oil |

2. COMPOSITION CHARACTERISTICS

2.1 The **arachidic and higher fatty acid content** of arachis oil should not exceed 48g/kg.

2.2 The **Reichert values** for coconut, palm kernel and babassu oils should be in the ranges 6-8.5, 4-7 and 4.5-6.5, respectively.

2.3 The **Polenske values** for coconut, palm kernel and babassu oils should be in the ranges 13-18, 8-12 and 8-10, respectively.

2.4 The **Halphen test** for cottonseed oil should be positive.

* It is intended for voluntary application by commercial partners and not for application by governments.

- 2.5 The **erythrodiol content** of grapeseed oil should be more than 2% of the total sterols.
- 2.6 The **total carotenoids** (as beta-carotene) for unbleached palm oil, unbleached palm olein and unbleached palm stearin should be in the range 500-2000, 550-2500 and 300-1500 mg/kg, respectively.
- 2.7 The **Crismer value** for low erucic acid rapeseed oil should be in the range 67-70.
- 2.8 The **concentration of brassicasterol** in low erucic acid rapeseed oil should be greater than 5% of total sterols.
- 2.9 The **Baudouin test** should be positive for sesameseed oil.

**Codex Requirements on Other Quality and Composition Factors
in Olive Oils and Olive Pomace Oils***

1. QUALITY CHARACTERISTICS

1.1 Moisture and volatile matter:

| | <u>Maximum level</u> |
|--------------------------|-----------------------------|
| Virgin olive oils | 0.2 % |
| Refined olive oil | 0.1 % |
| Olive oil | 0.1 % |
| Refined olive-pomace oil | 0.1 % |
| Olive-pomace oil | 0.1 % |

1.2 Insoluble impurities:

| | <u>Maximum level</u> |
|--------------------------|-----------------------------|
| Virgin olive oils | 0.1 % |
| Refined olive oil | 0.05 % |
| Olive oil | 0.05 % |
| Refined olive-pomace oil | 0.05 % |
| Olive-pomace oil | 0.05 % |

1.3 Trace metals:

| | <u>Maximum level</u> |
|-------------|-----------------------------|
| Iron (Fe) | 3 mg/kg |
| Copper (Cu) | 0.1 mg/kg |

1.4 Organoleptic characteristics:

1.4.1 Olive oils and olive pomace oils other than virgin olive oils:

| | Odour | Taste | Colour |
|--------------------------|------------|------------|----------------------------------|
| Refined olive oil | acceptable | acceptable | light yellow |
| Olive oil | good | good | light, yellow to green |
| Refined olive-pomace oil | acceptable | acceptable | light, yellow to brownish yellow |
| Olive-pomace oil | acceptable | acceptable | light, yellow to green |

1.4.2 Appearance at 20°C for 24 hours:

Refined olive oil, olive oil, refined olive-pomace oil, olive-pomace oil: Limpid

* It is intended for voluntary application by commercial partners and not for application by governments.

2. COMPOSITION CHARACTERISTICS

2.1 Saturated fatty acids at the 2-position in the triglyceride (sum of palmitic & stearic acids):

| | <u>Maximum level</u> |
|--------------------------|----------------------|
| Virgin olive oils | 1.5 % |
| Refined olive oil | 1.8 % |
| Olive oil | 1.8 % |
| Refined olive-pomace oil | 2.2 % |
| Olive-pomace oil | 2.2 % |

3. CHEMICAL AND PHYSICAL CHARACTERISTICS

3.1 **Relative density (20°C/water at 20°C):** 0.910-0.916

3.2 **Refractive index (n_D^{20}):**

| | | |
|-------------------|---|---------------|
| Virgin olive oils | } | 1.4677-1.4705 |
| Refined olive oil | | |
| Olive oil | | |
| Olive-pomace oils | | 1.4680-1.4707 |

3.3 **Saponification value (mg KOH/g oil):**

| | | |
|-------------------|---|---------|
| Virgin olive oils | } | 184-196 |
| Refined olive oil | | |
| Olive oil | | |
| Olive-pomace oils | | 182-193 |

3.4 **Iodine value (Wijs):**

| | | |
|-------------------|---|-------|
| Virgin olive oils | } | 75-94 |
| Refined olive oil | | |
| Olive oil | | |
| Olive-pomace oils | | 75-92 |

3.5 **Unsaponifiable matter:**

| | <u>Maximum level</u> | |
|-------------------|----------------------|---------|
| Virgin olive oils | } | 15 g/kg |
| Refined olive oil | | |
| Olive oil | | |
| Olive-pomace oils | | 30 g/kg |

3.6 **Absorbency in ultra-violet K232**

| | <u>Absorbency in ultra-violet at 232 nm</u> |
|------------------------|---|
| Extra virgin olive oil | $\leq 2.50^{\S}$ |
| Virgin olive oil | $\leq 2.60^{\S}$ |

[§] The country of retail sale may require compliance with these limits when the oil is made available to the end consumer.

**Codex Requirements on Other Quality and Composition Factors
in Edible Fats and Oils Not Covered By Individual Standards***

1. QUALITY CHARACTERISTICS

1.1 Colour:

Characteristic of the designated product.

1.2 Odour and Taste:

Characteristic of the designated product and free from foreign and rancid odour and taste.

| | <u>Maximum level</u> |
|--|--|
| 1.3 Matter Volatile at 105°C: | 0.2% m/m |
| 1.4 Insoluble Impurities: | 0.05 % m/m |
| 1.5 Soap Content: | 0.005 % m/m |
| 1.6 Iron (Fe): | |
| Refined fats and oils | 2.5 mg/kg |
| Virgin fats and oils | 5.0 mg/kg |
| Cold pressed fats and oils | 5.0 mg/kg |
| 1.7 Copper (Cu): | |
| Refined fats and oils | 0.1 mg/kg |
| Virgin fats and oils | 0.4 mg/kg |
| Cold pressed fats and oils | 0.4 mg/kg |
| 1.8 Acid Value: | |
| Refined fats and oils | 0.6 mg KOH/g fat or oil |
| Virgin fats and oils | 4.0 mg KOH/g fat or oil |
| Cold pressed fats and oils | 4.0 mg KOH/g fat or oil |
| 1.9 Peroxide Value: | |
| Virgin oils and cold pressed fats and oils | up to 15 milliequivalents of active oxygen/kg oil |
| Other fats and oils | up to 10 milliequivalents of active oxygen/kg oil |

* It is intended for voluntary application by commercial partners and not for application by governments.

Requirement on Safety Parameters for Edible Fats and Oils in Different Countries/Places

| Jurisdiction | Codex | European Commission (EC) | Australia/ New Zealand | Canada | Mainland China | Korea | Singapore |
|--------------|--|--|---|--|---|--|----------------------------------|
| Reference | Codex General Standard for Contaminants and Toxins in Food and Feed (Codex Stan 193-1995) (unless otherwise specified) | Commission Regulation (EC) No. 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs | Australia New Zealand Food Standards Code Standard 1.4.1 Contaminants and Natural Toxicants | Food and Drug Regulations (unless otherwise specified) | “食品安全國家標準 食品中污染物限量” GB 2762-2012; “食品安全國家標準 食品中真菌毒素限量” GB2761-2011 (unless otherwise specified) | Food Code: Article 2. Common Standards & Specifications for General Foods; Article 5. Standards and Specifications for Each Food Product | Food Regulations |
| Arsenic | ≤0.1mg/kg | NA | NA | NA | ≤0.1mg/kg (Edible fats and oils and their products) | NA | ≤0.1mg/kg (Edible oils and fats) |
| Lead | ≤0.1mg/kg | ≤0.1ppm (Fats and oils, including milk fat) | NA | NA | ≤0.1 mg/kg (Edible fats and oils and their products) [Note: ≤0.2 mg/kg (edible animal fats) set out in “食用動物油脂衛生標準” (GB 10146-2005); ≤1.0 mg/kg (edible lard) set out in “食用豬油” (GB/T 8937-2006)] | NA | ≤0.1mg/kg (Edible oils and fats) |

| Jurisdiction | Codex | European Commission (EC) | Australia/ New Zealand | Canada | Mainland China | Korea | Singapore |
|--------------------|---|--|--|--|--|---|---|
| Reference | Codex General Standard for Contaminants and Toxins in Food and Feed (Codex Stan 193-1995) (unless otherwise specified) | Commission Regulation (EC) No. 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs | Australia New Zealand Food Standards Code Standard 1.4.1 Contaminants and Natural Toxicants | Food and Drug Regulations (unless otherwise specified) | “食品安全國家標準 食品中污染物限量” GB 2762-2012; “食品安全國家標準 食品中真菌毒素限量” GB2761-2011 (unless otherwise specified) | Food Code: Article 2. Common Standards & Specifications for General Foods; Article 5. Standards and Specifications for Each Food Product | Food Regulations |
| Erucic acid | ≤2% (Low-erucic acid rapeseed oil) [Set out in Codex Standard for Named Vegetable Oils (Codex Stan 210-1999)] | ≤50g/kg (Vegetable oils and fats); ≤50g/kg (food containing added vegetable oils and fats with the exception of infant formulae and follow-on formulae) | ≤20,000mg/kg (edible oils) | NA | low-erucic acid rapeseed oil: Not detected-3%; general rapeseed oil: 3-60% [Set out in "菜籽油" (GB1536-2004)] | Not detected (sesame seed oil) | NA |
| Aflatoxins | NA | NA | NA | ≤15ppb (nuts and nut products; the aflatoxin content of a nut or nut product shall be calculated on the basis of the nut meat portion.) | Aflatoxin B1: ≤20ppb (peanuts oil, corn oil); ≤10ppb (other vegetable oils) | ≤10ppb (peanut, nuts and their processed food (grinding, cutting etc.)) | Aflatoxin B1: 5ppb (Any article of food except food for infants or young children); Aflatoxins, total (B1, B2, G1 and G2): 5ppb (Any article of food except food for infants or young children) |

| Jurisdiction | Codex | European Commission (EC) | Australia/ New Zealand | Canada | Mainland China | Korea | Singapore |
|----------------|--|---|---|--|---|--|------------------|
| Reference | Codex General Standard for Contaminants and Toxins in Food and Feed (Codex Stan 193-1995) (unless otherwise specified) | Commission Regulation (EC) No. 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs | Australia New Zealand Food Standards Code Standard 1.4.1 Contaminants and Natural Toxicants | Food and Drug Regulations (unless otherwise specified) | “食品安全國家標準 食品中污染物限量” GB 2762-2012; “食品安全國家標準 食品中真菌毒素限量” GB2761-2011 (unless otherwise specified) | Food Code: Article 2. Common Standards & Specifications for General Foods; Article 5. Standards and Specifications for Each Food Product | Food Regulations |
| Benzo[a]pyrene | NA | ≤2ppb (oils and fats (excluding cocoa butter and coconut oil) intended for direct human consumption or use as an ingredient in food)); ≤2ppb (Coconut oil intended for direct human consumption or use as an ingredient in food) | NA | NA | ≤10ppb (Edible fats and oils and their products) | ≤2ppb (edible oil) | NA |

Requirement on Quality Parameters for Edible Fats and Oils in Different Countries/Places

| Jurisdiction | Codex | European Commission (EC) | Australia/ New Zealand | Canada | Mainland China | Korea | Singapore |
|-----------------------|---|--|--|--|---|--|--|
| Reference | Codex standard for named animal fats (Codex Stan 211-1999); Codex standard for named vegetable oils (Codex Stan 210-1999); Codex standard for olive oils and olive pomace oils (Codex Stan 33-1981); Codex standard for edible fats and oils not covered by individual standards (Codex Stan 19-1981) | REGULATION (EC) No 853/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 laying down specific hygiene rules for food of animal origin; COMMISSION REGULATION (EEC) No 2568/91 of 11 July 1991 on the characteristics of olive oil and olive-residue oil and on the relevant methods of analysis | Australia New Zealand Food Standards Code Standard 2.4.1 Edible oils | Food and Drug Regulations | “食用植物油衛生標準” GB 2716-2005; “食用動物油脂衛生標準” GB 10146-2005; “食用豬油” GB/T 8937-2006 | Food Code Article 5. Standards and Specifications for Each Food Product | Food Regulations |
| Peroxide value | <i>Established for various types of fats and oils* e.g. named animal fats: up to 10 milliequivalents active oxygen/kg fat</i> [mandatory for various oils under the Codex standard for olive oils and olive pomace oils] | Established for various types of fats and oils* e.g. lard: not more than 4 milliequivalents peroxide oxygen/kg fat | NA | Established for various types of fats and oils* e.g. lard: not more than 16 milliequivalents peroxide oxygen/ kg fat | Established for various types of fats and oils* e.g. ≤0.2g/100g for lard under "食用動物油脂衛生標準" (GB 10146-2005); ≤0.1% for lard under "食用豬油" (GB/T 8937-2006) | Established for various types of fats and oils* e.g. palm oleic oil: ≤5.0 | Edible fats and oils: not more than 10 mgKOH/ kg of fat or oil; dripping: not more than 16 milliequivalents peroxide oxygen per kg fat |

| Jurisdiction | Codex | European Commission (EC) | Australia/ New Zealand | Canada | Mainland China | Korea | Singapore |
|-----------------------------|---|---|--|---|--|---|---|
| Reference | Codex standard for named animal fats (Codex Stan 211-1999); Codex standard for named vegetable oils (Codex Stan 210-1999); Codex standard for olive oils and olive pomace oils (Codex Stan 33-1981); Codex standard for edible fats and oils not covered by individual standards (Codex Stan 19-1981) | REGULATION (EC) No 853/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 laying down specific hygiene rules for food of animal origin; COMMISSION REGULATION (EEC) No 2568/91 of 11 July 1991 on the characteristics of olive oil and olive-residue oil and on the relevant methods of analysis | Australia New Zealand Food Standards Code Standard 2.4.1 Edible oils | Food and Drug Regulations | “食用植物油衛生標準” GB 2716-2005; “食用動物油脂衛生標準” GB 10146-2005; “食用豬油” GB/T 8937-2006 | Food Code Article 5. Standards and Specifications for Each Food Product | Food Regulations |
| Acid value/ free acidity | <i>Established for various types of fats and oils (some are expressed in acid value while some are expressed in free acidity)* e.g. lard: not more than 1.3mg KOHg/fat =ffa max 0.65%</i> [mandatory for various oils under the Codex standard for olive oils and olive pomace oils] | Established for various types of fats and oils* e.g. lard: not more than 0.75 m/m oleic acid | NA | Established for various types of fats and oils* e.g. lard: not more than 2.5mg KOHg/fat | Established for various types of fats and oils* e.g. ≤1.5 mg KOH/g for lard under "食用動物油脂衛生標準" (GB 10146-2005); ≤1.0 mg KOH/g for 1 st class lard under "食用豬油" (GB/T 8937-2006) | Established for various types of fats and oils* e.g. soybean oil: ≤ 0.6 | Established for various types of fats and oils (in free fatty acid content)* e.g. lard: not more than 2% calculated as oleic acid |

Remarks:

Voluntary provisions are provided in *italics*; others are mandatory requirements

* Refer to relevant standards for details

Official Certificates for Edible Fats and Oils Issued by Different Countries/Places

| Country / Place | Issuing Authority | Products concerned | Attestations on the Official Certificate |
|------------------------|---|------------------------------------|--|
| Canada | Canadian Food Inspection Agency (CFIA) | Animal Based Oil Canola Oil | For animal based oil - the Canadian Food Inspection Agency (CFIA) issues a standard Export Certificate for Meat and Meat Products to companies seeking to export animal based edible oils to Hong Kong. It certifies that “the meat products herein identified derive from food animals that received antemortem and postmortem veterinary inspection at the time of slaughter and are fit for human food, have not been treated with and do not contain any preservative, colouring matter or other substance not permitted by the Meat Inspection Act and Regulations, and have been handled only in a sanitary manner in Canada”. For plant based oil, no official certificate is issued. However, for canola oil manufactured in Canada, a "Manufacturer's Declaration for Export of Food Products manufactured in Canada" could be completed by the manufacturer and countersigned by the CFIA stating that the CFIA would have no objection to the sale of the product in Canada. |
| Mainland China | Linyi Entry-Exit Inspection and Quarantine Bureau (山東省臨沂出入境檢驗檢疫局) | Peanut Oil | The “Health Certificate” certifies that “the goods are free from harmful material and fit for human consumption”. |

| Country / Place | Issuing Authority | Products concerned | Attestations on the Official Certificate |
|------------------------|--|---------------------------|---|
| Italy | Regione Abruzzo A.S.L.02 Lanciano Vasto Chieti | Olive Oil | <p>The “Sanitary Certificate for the Export of Alimentary Products” certifies that -</p> <ul style="list-style-type: none"> (a) The firm (exporter) has a situated plant to the address shown on the certificate for the producing, the packing, the storing and the marketing of aliments mentioned in the certificate. (b) The factory has the sanitary authorisation. (c) The product is in free sale for the human consumption. (d) The factory is subject to hygienic inspection from the authorities in accordance with the laws in force in Italy. |

| Country / Place | Issuing Authority | Products concerned | Attestations on the Official Certificate |
|-----------------|--|------------------------|--|
| Netherlands | Food and Consumer Product Safety Authority | Lard and Rendered Fats | <p>The “Veterinary Certificate for Export of Lard and Rendered Fats from the Netherlands to Hong Kong” certifies that:</p> <ul style="list-style-type: none"> (a) The lard and rendered fats herein described come from animals slaughtered in the Netherlands or in other member states of the European Union; (b) The lard and rendered fats have been subjected to one of the following heat treatment processes as mentioned in Council Directive 92/118/EEC, chapter 9: <ul style="list-style-type: none"> i. at least 70 degrees Centigrade for 30 minutes, or ii. at least 90 degrees Centigrade for 15 minutes, or iii. a minimum temperature of 80 degrees Centigrade in a continuous rendering system; (c) Where the lard and rendered fats are packaged, they have been packed in new containers and all precautions have been taken to prevent recontamination in accordance with the Netherlands and EU legislation; (d) Where bulk transport of lard and rendered fats is intended, all pipes, pumps and bulk tank and any other bulk container tanks or bulk road tanker used in the transportation of the products from the manufacturing plant either directly to the ship or into shore tanks or direct to establishments were inspected and found to be clean before use; (e) The product is fit for human consumption; (f) All agricultural products originating from the Netherlands/EU have been (and still are) subjected to a permanent monitoring system on radioactivity and that measured levels are far below those considered as safe by the World Health Organisation. |

| Country / Place | Issuing Authority | Products concerned | Attestations on the Official Certificate |
|------------------------|---|------------------------------|---|
| South Korea | Ministry of Food and Drug Safety (Gyeongin Regional FDA) | Corn Oil | The “Health Certificate” certifies that “the products (corn oil) are manufactured, distributed and fit for human consumption with compliance and supervision under the Food Sanitation on Act of the Republic of Korea”. |
| Spain | Ministry of Agriculture, Food and Environment | Olive Oil and Grape Seed Oil | The “Phytosanitary Certificate” certifies that “the plants products described above (olive oil and grape seed oil) have been inspected according to appropriate procedures, and are considered to be free from quarantine pests, and practically free from other injurious pests, and that they are considered to conform with the current phytosanitary regulations of the importing country”. |
| Taiwan | “Bureau of Animal and Plant Health Inspection and Quarantine, Council of Agriculture, Executive Yuan” (「行政院農業委員會動植物防疫檢疫局」) | Lard | The “Veterinary Certificate for Export of Animal Products” certifies that “there has been no outbreak of Rinderpest, Anthrax and Highly Pathogenic Avian Influenza in Taiwan since 1951, 1999 and April 2013 respectively. In addition, African Horse Sickness, African Swine Fever, Blackleg, Contagious Bovine Pleuropneumonia, Glanders and Lumpy Skin Disease have not been known to occur in Taiwan, Republic of China”. |

Summary of the Proposed Amendments to the Standards for Edible Fats and Oils

| | Local situation | | | Proposed amendments | |
|--------------------|---|---|---|--|---|
| | Regulatory control | Description of food | Maximum level | Description of food | Maximum level |
| Arsenic | Regulated under the Food Adulteration (Metallic Contamination) Regulations, Cap. 132V | All food in liquid form [including edible oils] | 0.14mg arsenic (As ₂ O ₃)/kg | Edible fats and oils | 0.1mg total arsenic/kg |
| | | All food in solids other than fish, shellfish and their products [including edible fats] | 1.4mg arsenic (As ₂ O ₃)/kg | | |
| Lead | | All food in liquid form [including edible oils] | 1 mg/kg | Edible fats and oils | 0.1mg/kg |
| | | All food in solid form [including edible fats] | 6 mg/kg | | |
| Erucic acid | Regulated under the Harmful Substances in Food Regulations, Cap. 132AF | Any food to which oil or fat or a mixture thereof has been added | 5 per centum by weight of their fatty acid content | Low-erucic acid rapeseed oil or any food to which low-erucic acid rapeseed oil but no other edibles fats and oils has been added | 2 per centum by weight of their fatty acid content |
| | | | | Any food to which edible fats and oils or a mixture thereof has been added except any food to which low-erucic acid rapeseed oil but no other edibles fats and oils has been added | 5 per centum by weight of their fatty acid content |
| | | Any oil or fat or any mixture thereof | 5 per centum by weight of their fatty acid content | Any edible fats and oils or any mixture thereof except low-erucic acid rapeseed oil | 5 per centum by weight of their fatty acid content |
| Aflatoxins | | Any food other than peanut or its products [including edible fats and oils except peanut oil] | 15 micrograms aflatoxin (B1+B2+G1+G2+M1+M2+P1 and aflatoxicol) per kilogram of the food | Edible fats and oils | 5 micrograms aflatoxins, total (B1+B2+G1+G2) per kilogram of the food |
| | Peanuts or peanut products [including peanut oil] | 20 micrograms aflatoxin (B1+B2+G1+G2+M1+M2+P1 and aflatoxicol) per kilogram of the food | | | |

| | Local situation | | | Proposed amendments | |
|------------------------|---|--|---|----------------------|---|
| | Regulatory control | Description of food | Maximum level | Description of food | Maximum level |
| Benzo[a]pyrene* | Action level endorsed by the Expert Committee on Food Safety | Edible oils [also applies to edible fats] | 10 micrograms per kilogram of the food | Edible fats and oils | 5 micrograms per kilogram of the food |
| Acid value# | No specific subsidiary legislations; assessed in a case-by-case basis and made reference to the respective Codex standards where applicable | Various edible fats and oils including lard | Lard: 1.3 mg KOH/g fat = ffa max 0.65% | Lard | 1.3 mg KOH/g fat = ffa max 0.65% |
| Peroxide value# | No specific subsidiary legislations; assessed in a case-by-case basis and made reference to the respective Codex standards where applicable | Various edible fats and oils including lard | Lard: up to 10 milliequivalents active oxygen/ kg fat | Lard | Up to 10 milliequivalents active oxygen/ kg fat |

* It is proposed to introduce the regulatory limit of BaP in edible fats and oils under the First Schedule of the Harmful Substances in Food Regulations (Cap. 132AF).

It is proposed to introduce the regulatory limits of acid value and peroxide value in lard under the proposed subsidiary legislation for edible fats and oils.

