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BaP Action Level Set for Cooking Oil

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Report Highlights:

Hong Kong adopted an action level of 10 mcg/kg for Benzo[a]pyrene (BaP) in edible cooking oil. The Center for Food Safety (CFS) will take enforcement action if there is any detection of BaP with a level higher than 10mcg/kg but lower than 20 mcg/kg in edible oil. If a BaP level at 20 mcg/kg or higher is detected, the CFS will initiate a mandatory recall of the product concerned. The CFS's decided to adopt an action level for BaP after local media revealed in December that substandard cooking oil (gutter oil) was sold to catering industry at lower prices.

Background

Hong Kong media in December 2012 reported that a cooking oil processing plant in Hong Kong used “gutter oil” for production and sold the tainted oil at cheaper prices to restaurants. The reports immediately aroused huge public concern for food safety.

Hong Kong consumers have heard reports of the use of gutter oil in China in the past few years. Gutter oil is reprocessed kitchen waste dredged from drains and contains carcinogenic constituents created during the combustion process.

The Center for Food Safety (CFS) took immediate action by inspecting the suspected oil processing plant and collected a total of 39 samples of peanut oil from the plant, its supplying importer and restaurant customers for BaP testing.

The CFS explained that there does not exist any established scientific method for identifying “gutter oil”. However, BaP may exist in food and the levels may vary depending on the processing conditions and are often higher in barbecued or smoked meat or fish. BaP may be generated when cooking oil is heated during processing but the level will depend on the quality control during processing. BaP is toxic to genes and may cause cancer in humans.

Test results indicated that two samples collected from the importer contained BaP levels at 16 and 17 mcg/kg respectively, exceeding the limits set by China (10 mcg/kg) and EU (2mcg/kg). Two samples collected from the oil processing plant showed BaP levels of 5.8 and 6.2 mcg/kg respectively, exceeding the limit of EU but lower than the standard set by China. BaP was either not detected or below the EU limit for the remaining 35 samples.

The CFS then conducted a risk analysis and concluded that the health risk concern for consuming the cooking oil with a BaP level at 17 mcg/kg should not be high, taking into account the dietary consumption pattern of the Hong Kong population. However, at the request of the CFS, the importer initiated a voluntary recall of the products. A total of 80 barrels, each weighing 300 MT, were imported to Hong Kong by the importer. While 35 barrels were successfully recalled and returned to the supplying country, the remaining 45 barrels had already been consumed. According to the investigation result of the CFS, the cooking oil in question was produced by an established producer in China.

Despite the detection of BaP in various samples collected, CFS’s reported that their investigation did not show any evidence that “gutter oil” was involved. Also, CFS has not found any evidence indicating that used cooking oil collected from restaurants enters the food chain in Hong Kong after recycling.

In Hong Kong, there is trade for used cooking oil. A plant undertakes the recycling of used cooking oil, turning the used oil collected locally in Hong Kong into bio-diesel that meets international standards. Apart from being recycled into bio-diesel in Hong Kong, some of the used cooking oil generated from the local catering industry is exported to the neighboring region or even Europe for

recycling uses such as being refined into bio-diesel, reused as industrial fuel or manufactured as soap.

Remedial Measures

The existing Hong Kong legislation does not stipulate a statutory limit on BaP in food. As a result of the detection of BaP in cooking oil exceeding the level of China and Europe, the CFS, with the endorsement of an expert committee in late January, now adopts an action level of 10mcg/kg for BaP in cooking oil. If a BaP level at 20mcg/kg is detected in cooking oil, CFS will initiate a mandatory recall of the cooking oil concerned.

In addition, the CFS will step up its surveillance program on cooking oil with particular reference to BaP content. The CFS has been monitoring the quality of cooking oil in Hong Kong. Between January 2011 and October 2012, more than 310 cooking oil samples were tested for different chemicals, which include erucic acid, coloring matter, mycotoxins, antioxidants, metallic contaminants, etc, under the general food surveillance program. The contents of these substances in cooking oil are regulated by law. All the samples taken were found to be satisfactory. After the detection of excessive BaP in cooking oil, the CFS announced that they will include BaP in its routine testing.

The Trade

Peanut oil is a major edible oil type consumed in Hong Kong. In 2012, Hong Kong imported a total of \$14 million worth of refined peanut oil and China accounted for over 76 percent of the market share. The market has been traditionally dominated by three major players. The playing field has had some changes with one China associated company setting foot in Hong Kong's oil business in recent years and it is the one involved as an importer with respect to this incident of detection of excessive level of BaP in peanut oil.

The trade is also characterized with a number of small processors/distributors who are selling their oil products to retailers/restaurants after bottling or canning. Industry sources said that very often these processors blend different oil products according to the need of their customers before undertaking packaging processes.

Table 1. Hong Kong's Imports of Peanut Oil (Refined) in Value

Year To Date: January - December							
Partner Country	United States Dollars			% Share			% Change
	2010	2011	2012	2010	2011	2012	2012/2011
World	18,527,221	18,722,026	14,104,471	100.00	100.00	100.00	- 24.66
China	15,144,049	16,020,104	10,844,553	81.74	85.57	76.89	- 32.31
U.S.	1,315,344	1,411,373	2,014,823	7.10	7.54	14.28	42.76
Singapore	2,039,329	1,259,549	1,220,354	11.01	6.73	8.65	- 3.11

Source: Hong Kong Census & Statistics Department

Table 2. Hong Kong's Imports of Peanut Oil (Refined) in Volume

Year To Date: January - December			
Partner Country	Quantity	% Share	% Change

	2010	2011	2012	2010	2011	2012	2012/2011
World	8,349	7,262	4,296	100.00	100.00	100.00	- 40.84
China	6,707	6,177	3,152	80.34	85.05	73.35	- 48.98
U.S.	521	540	679	6.24	7.43	15.79	25.71
Singapore	1,110	536	461	13.29	7.38	10.72	- 14.06

Source: Hong Kong Census & Statistics Department