

# Targeted Food Surveillance on Grains And Grain Products

Civic and Municipal Affairs Bureau  
Food Safety Centre



# Targeted Food Surveillance

- **Objective:** The Centre proactively identifies potential risks of the targeted food items and assesses the safety of food items commonly consumed in Macao in order to safeguard food safety.



# Targeted Food Surveillance

- The Centre conducts relevant analysis based on the types of foods. Priority will be given to the popular food items.

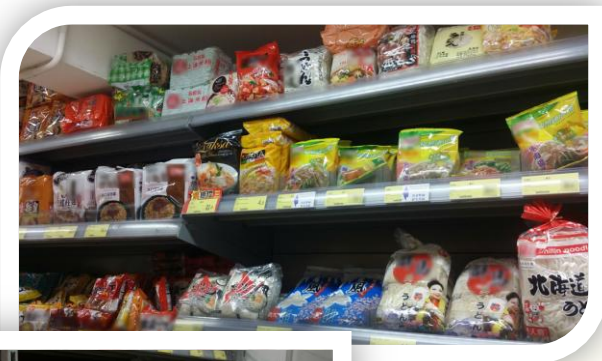
Factors

Risk Level

Social Concern

Eating Habits

Food Incidents



# Surveillance on Grains And Grain Products

- There are a wide range of grains and grain products in the market, and they are staple food items with high consumption level in the local diet ;
- Heavy metals are environmental contaminants present naturally in the Earth' s crust, they may also be discharged to the environment through industrial uses. Food crops growing in polluted environment tend to accumulate heavy metals in their tissues, and human may be exposed to these metals through the food chain ;
- Under improper production and storage conditions, food crops may be more susceptible to fungal infection and they might also be contaminated with toxins produced by fungi ;
- Prolonged intake of foods containing heavy metals and mycotoxins can be detrimental to health ;
- In order to assess the safety of grains and grain products, Food Safety Center of IACM carried out relevant food surveillance .



# Market Surveillance

## Popularity

Covers grain and grain products under various brand in the market

## Country or Region of Origin

Mainland China, Macao, Hong Kong, Taiwan, Thailand, Australia, Cambodia, France, Japan, Laos, US, Portugal, Vietnam, Indonesia, Turkey, UK, Canada, Argentina, Italy and Malaysia, etc.

## Location

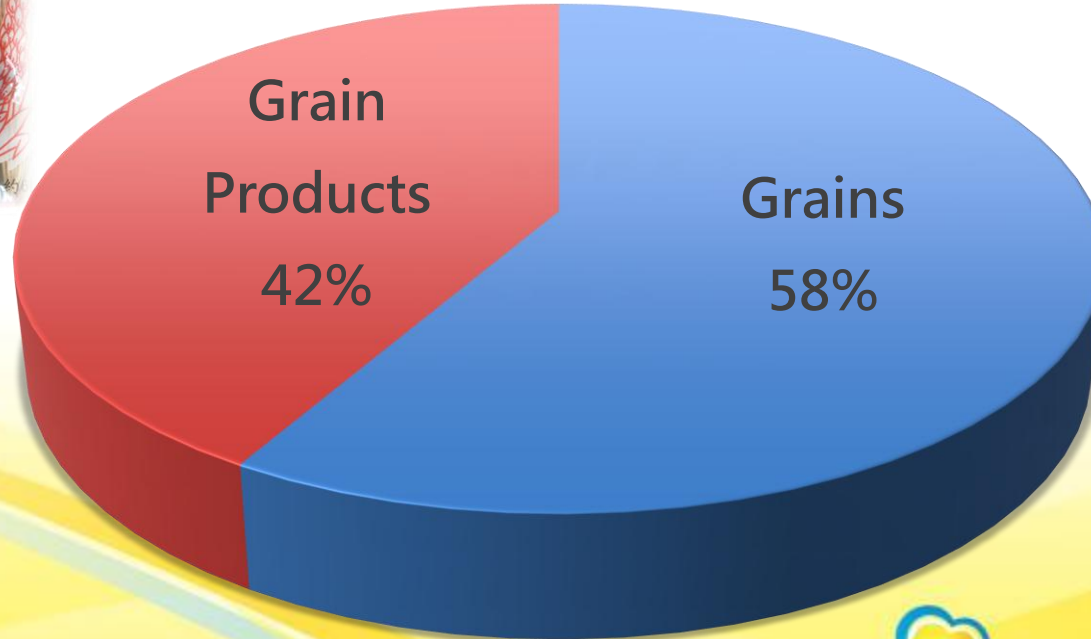
Local supermarket and department store



# Types of Samples

- Collected a total of 60 samples of grains and grain products, which include:

## Grains And Grain Products



# Test Parameters

## ■ Test Parameters - Heavy Metal

Lead, Cadmium, Total Mercury and Total Arsenic, in total of 4 tests.

## ■ Test Parameters - Mycotoxin

Ochratoxin A



# Samples (Grains) Information (Partial)

Sample	Packaging Condition	Origin	Test Parameters	Test Result
Jasmine Rice	Pre-packaged	Mainland China	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
Glutinous Rice	Pre-packaged	Thailand		Satisfactory
White Rice	Pre-packaged	Japan		Satisfactory
Wheat Flour	Pre-packaged	Mainland China		Satisfactory
Tapioca Flour	Pre-packaged	Hong Kong		Satisfactory
Cassava Flour	Pre-packaged	Indonesia		Satisfactory
Soya Beans	Pre-packaged	Canada		Satisfactory
Organic Black Eye Peas	Pre-packaged	US		Satisfactory
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# Samples (Grain Products) Information (Partial)

Sample	Packaging Condition	Origin	Test Parameters	Test Result
Corn Flakes	Pre-packaged	Thailand	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
Ramen	Pre-packaged	Mainland China		Satisfactory
Quick Serve Macaroni	Pre-packaged	Hong Kong		Satisfactory
Superior Soup Instant Noodle	Pre-packaged	Vietnam		Satisfactory
Shrimp Noodles	Pre-packaged	Macao		Satisfactory
Soyabean Milk	Pre-packaged	Hong Kong		Satisfactory
Baked Beans in Tomato Sauce	Pre-packaged	UK		Satisfactory
Baked Beans	Pre-packaged	Malaysia		Satisfactory
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# Test Results

- All the samples were satisfactory. The overall **satisfactory rate was 100%** ;
- Although the results were satisfactory, but IACM reminded the public to maintain a balanced diet, and choose a wide variety of food from different food groups .

## Reference:

Macao Administrative Regulation No. 13/2016 《 Maximum Limits of Mycotoxins in Food 》 , CODEX STAN 193-1995 《 Codex General Standard For Contaminants And Toxins In Food And Feed 》 , China GB 2762-2012 《 Maximum Levels of Contaminants in Foods 》 and Hong Kong 《 Food Adulteration (Metallic Contamination) Regulations 》

# Advice To The Public

**When purchasing grains and grain products, you should :**

- Purchase from approved and reliable sources ;
- Food should be stored in cool, dry places and under appropriate temperature ;
- For pre-packaged food, check the package if it is intact and pay attention to the expiry date, store them according to label instructions after purchase ;
- Consume as soon as possible after opening ;
- It is difficult to verify whether the online food trading meets the food safety standards in various food processes, such as storage and transportation, the public should pay special attention to the nature of food and potential risks when purchasing food online ;
- Do not purchase or eat any food if there is any doubt about its safety or quality .

# Advice To The Trade

- The trade should purchase food products from reputable suppliers, meet the hygiene and safety requirements in various food processes such as transportation and storage, store and display the food properly ;
- The trade should **keep all the purchase and sales records** for product tracing by the competent government authorities whenever necessary ;
- Do not sell any food if there is any doubt about its safety or quality, such as the products have gone mouldy or discoloured .



## 保存食品紀錄指引

### 目的：

根據《食品安全法》，食品生產經營者有義務在指定期間內保存進出貨紀錄或相關單據。本指引旨在使食品生產經營者了解保存食品紀錄的要件及如何妥善進行相關的保存工作，以便一旦發生食品事故時能讓政府有關部門進行及時有效的食品溯源及跟進工作，共同攜手保障本澳的食品安全。

### 適用範圍：

- 適用於所有擬供人食用的食品。根據《食品安全法》，「食品」指任何供人食用的經處理或未經處理的物質，包括飲料及香口膠類產品，以及在生產、配製及處理食品過程中所使用的所有成分。
- 本指引旨在為食品生產經營者提供原則性的保留食品紀錄建議，但受現行其他指引規範者，則可沿用既有的規定。

### 保存紀錄的內容：

為有效追查食品的來源和流向，保存紀錄的內容應清晰並涵蓋以下資料：

1. 食品的日期(獲取食品的日期；以批發方式供應食品的日期)；
2. 食品的來源資料(公司或個人的名稱、地址及電話)；
3. 食品的數量；
4. 食品的描述(應為特徵性描述，讓人可清楚辨識，如食品名稱、批號及產地來源等)。

### 食品生產經營者一般須備存的紀錄

	進口紀錄	獲取紀錄	供應紀錄
食品進口商	√		√
食品分銷商		√	√
食品零售商 (直接供應給消費者)		√	
飲食業界		√	
本地食品製造商		√	√

# Released Results and Enquiries

The Centre releases food surveillance results and information through the following channels:

- Press releases;
- Food Safety Information website and Food Safety Information App.





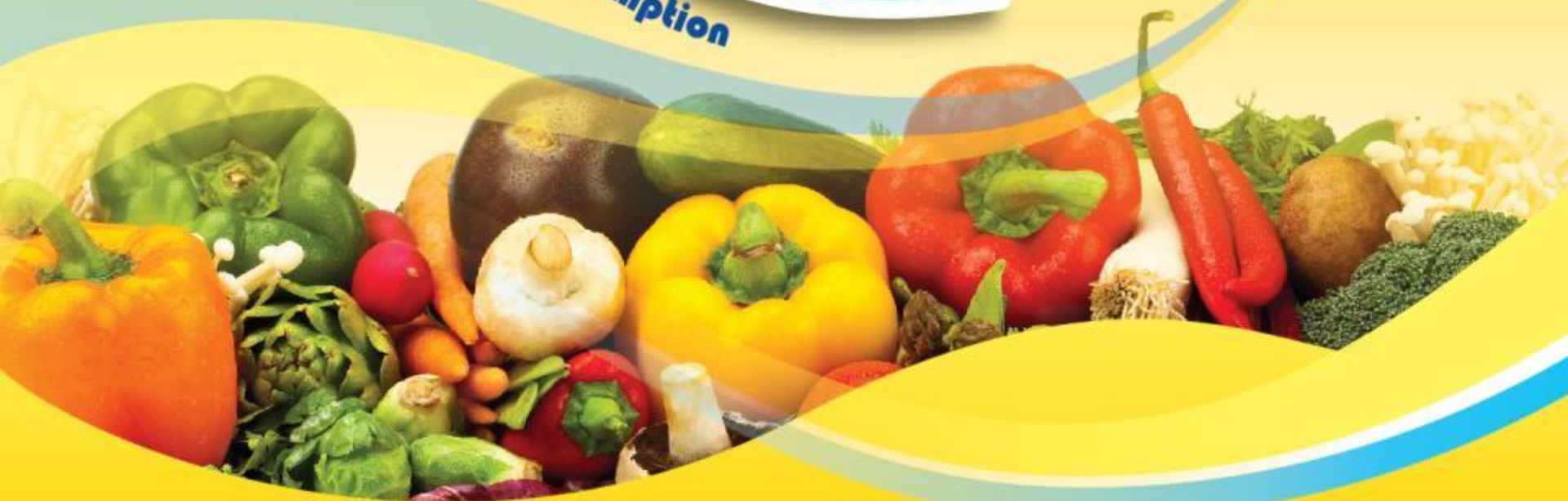


民 政 總 署  
INSTITUTO PARA OS  
ASSUNTOS CÍVICOS  
E MUNICIPAIS

Safe food. Safe Consumption

安全  
食品  
安心  
食得

Alimentar-se com segurança e prazer





## 2016 Targeted Food Surveillance on Grains And Grain Products

Food Safety Centre of IACM collected a total of 60 samples of grains and grain products, and conducted heavy metal and mycotoxin contents analysis of food samples.

Test Parameters - Heavy Metal :

Lead, Cadmium, Total Mercury and Total Arsenic, in total of 4 tests.

Test Parameters - Mycotoxin :

Ochratoxin A.

Grains							
No.	Sample	Packaging Condition	The Form of Food As Sold	Origin	Location	Test Parameters	Test Result
1	Jasmine Rice	Pre-packaged	Room Temperature	Mainland China	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
2	Premium Rice	Pre-packaged	Room Temperature	Thailand	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
3	Glutinous Rice	Pre-packaged	Room Temperature	Thailand	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
4	Calrose Rice	Pre-packaged	Room Temperature	Australia	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
5	Basmati Rice	Pre-packaged	Room Temperature	Cambodia	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
6	Couscous	Pre-packaged	Room Temperature	France	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
7	Mixed Grains	Pre-packaged	Room Temperature	Taiwan	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
8	White Rice	Pre-packaged	Room Temperature	Japan	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
9	Organic Fragrant Rice	Pre-packaged	Room Temperature	Laos	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
10	Wheat Flour	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
11	Low Gluten Flour	Pre-packaged	Room Temperature	Hong Kong	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
12	Tapioca Flour 1	Pre-packaged	Room Temperature	Hong Kong	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
13	Tapioca Flour2	Pre-packaged	Room Temperature	Thailand	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
14	Corn Starch 1	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
15	Bread Flour	Pre-packaged	Room Temperature	Taiwan	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
16	Plain Flour 1	Pre-packaged	Room Temperature	US	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
17	Corn Starch 2	Pre-packaged	Room Temperature	Thailand	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
18	All Purpose Flour 1	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
19	Plain Flour 2	Pre-packaged	Room Temperature	US	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
20	All Purpose Flour 2	Pre-packaged	Room Temperature	Taiwan	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
21	Cassava Flour	Pre-packaged	Room Temperature	Indonesia	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
22	Sweet Potato Flour 1	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
23	Sweet Potato Flour 2	Pre-packaged	Room Temperature	Thailand	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
24	Black-eyed Beans	Pre-packaged	Room Temperature	Portugal	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
25	Bulgar Wheat	Pre-packaged	Room Temperature	Turkey	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
26	Mixed Beans	Pre-packaged	Room Temperature	UK	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
27	Soya Beans 1	Pre-packaged	Room Temperature	Canada	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
28	Red Beans	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
29	Raw Almond Kernel	Pre-packaged	Room Temperature	US	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
30	Soya Beans 2	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
31	Pearl Barley	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
32	Black-eyed Peas	Pre-packaged	Room Temperature	US	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
33	Rice Beans	Pre-packaged	Room Temperature	Mainland China	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
34	Chia seeds	Pre-packaged	Room Temperature	Argentina	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory

35	Organic Black Eye Peas	Pre-packaged	Room Temperature	US	supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
<b>Grain Products</b>							
No.	Sample	Packaging Condition	The Form of Food As Sold	Origin	Location	Test Parameters	Test Result
1	Pearl Tapioca	Pre-packaged	Room Temperature	-	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
2	Corn Starch	Pre-packaged	Room Temperature	US	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
3	Premium Oats	Pre-packaged	Room Temperature	Australia	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
4	Corn Flakes 1	Pre-packaged	Room Temperature	Thailand	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
5	Corn Flakes 2	Pre-packaged	Room Temperature	Portugal	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
6	Corn Flakes 3	Pre-packaged	Room Temperature	US	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
7	Instant Oatmeal	Pre-packaged	Room Temperature	Taiwan	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
8	Ramen	Pre-packaged	Refrigerating	Mainland China	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
9	Quick Serve Macaroni	Pre-packaged	Room Temperature	Hong Kong	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
10	Chicken Flavour Instant Noodle	Pre-packaged	Room Temperature	Hong Kong	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
11	Superior Soup Instant Noodle	Pre-packaged	Room Temperature	Vietnam	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
12	Shrimp Noodles	Pre-packaged	Room Temperature	Macao	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
13	Golden Sweet Potato	Pre-packaged	Room Temperature	Mainland China	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
14	Dried Sweet Potato	Pre-packaged	Room Temperature	Mainland China	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
15	Tapioca	Pre-packaged	Room Temperature	Thailand	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
16	Soyabean Milk	Pre-packaged	Refrigerating	Hong Kong	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
17	Ground Coffee	Pre-packaged	Room Temperature	Macao	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
18	Coffee Bean 1	Pre-packaged	Room Temperature	Indonesia	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
19	Ground Coffee 1	Pre-packaged	Room Temperature	UK	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
20	Coffee Bean 2	Pre-packaged	Room Temperature	Macao	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
21	Coffee Bean 3	Pre-packaged	Room Temperature	Italy	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
22	Ground Coffee 2	Pre-packaged	Room Temperature	Japan	Department Store	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
23	Baked Beans in Tomato Sauce	Pre-packaged	Room Temperature	UK	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
24	Baked Beans	Pre-packaged	Room Temperature	Malaysia	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory
25	Red Kidney Beans in Brine	Pre-packaged	Room Temperature	Mainland China	Supermarket	Lead, Cadmium, Total Mercury, Total Arsenic, Ochratoxin A	Satisfactory