



Food Safety
AUTHORITY OF IRELAND

**GM Maize Survey 2004
Sweet corn and Popcorn**

August 2005

1. SUMMARY

The Food Safety Authority of Ireland (FSAI) carried out a survey to determine whether GM corn was present in samples of fresh, canned and frozen sweet corn kernels, corn-on-the-cob and popcorn.

DNA from GM corn was not detected in any of the samples tested.

2. BACKGROUND

2.1 Food Safety Authority of Ireland - Competent Authority for GM Food in Ireland

The FSAI's mission is to protect consumers' health by ensuring that food consumed, distributed, marketed or produced in Ireland meets the highest standards of food safety and hygiene. To be able to make an informed choice about the food they buy, consumers must be provided with appropriate information and this is achieved mainly through accurate product labelling.

The FSAI is the Competent Authority for GM foods in Ireland. EU GM food legislation (Regulation EC 1829/2003) stipulates that GM food and food ingredients must be authorised before being placed on the market and must adhere to specific GM food labelling regimes. By carrying out regular surveys of the food supply the FSAI monitors the level of compliance with GM food regulations and avails of this opportunity to inform industry of its responsibilities with respect to the legislation.

2.2 Maize (or corn, *Zea mays*)

Maize is one of the world's largest crops, with annual harvests in excess of 560 million tonnes. The majority of maize cultivated is used in animal feed, with the remainder used for human food. One variety, a sweet corn, is eaten as a vegetable, while two other varieties, hard (flint) and soft (dent) maize are used in food processing. Hard maize is grown in South America and is mainly used in foods such as bakery products and breakfast cereals. Popcorn is a specific variety of hard maize grown primarily in the US and comes in white or yellow varieties. Yellow popcorn is generally larger while white popcorn is considered a better flavour and more tender.

2.3 GM Maize

The yield and quality of maize crops can be seriously affected by competing weeds along with injury from pests such as the corn borer. Some varieties of maize have been genetically modified to be able to tolerate certain herbicides and repel certain insect pests. Almost 50% of the US maize crop is engineered to be either pest resistance, herbicide tolerant or both and while these varieties are common in the US, Canada among other countries, the EU limits cultivation to a few GM varieties. Commission Decision of 19 May 2004 authorised the placing on the EU market of Syngenta's GM sweet maize line Bt11 which is resistant to the European corn borer pest. The aim of this limited

survey was to test corn products to determine if GM corn, including Bt11 was on the market, and if so, if it was labelled correctly.

3. METHODOLOGY

A total of 14 sweet corn products (Table 1) were purchased directly 'off the shelf' by the FSAI in three supermarkets in Dublin city centre in autumn 2004. In addition, three samples of butterfly type and three samples of mushroom type popcorn kernels were procured from CPAC Foods, Foxford, by an Environmental Health Officer based in Mayo.

Table 1: Sweet corn samples tested for GM content

brand	product	batch	origin
Tesco	twinpack supersweet sweet corn – fresh cobs	BOB01	UK
Marks & Spencer	2 fresh sweet corn cobs	1816	British
Marks & Spencer	fresh baby corn	4848U	Thailand
Green Isle	2 frozen corn cobs	S4095	n/r
Marks & Spencer	frozen sweet corn kernels	26074F 20:28	Israel
Marks & Spencer	frozen petit pois & sweet corn kernels	29074F 13:00	(various)
Clayton Love 1st choice	frozen petit pois & sweet corn kernels	SH4176 11:07	n/r
Green Isle	frozen sweet corn kernels	L 103 01 4222	n/r
Brookerpaks Quality Foods	2 longlife cooked corn on the cob	224N / Lot 227 224S P4606	n/r
Green Giant	tinned Niblets original	07 08 15:38 2032A3	France
Rob Roy Fine Foods	tinned sweet corn	2D 6681 1 FA	France
Tesco	tinned sweet corn	02BCWV1 040508 1117	Thailand
Tesco value	tinned sweet corn	KOKN 13602	Thailand
Lustre	tinned sweet corn	6681 5 13:27 1	France

n/r not recorded

Analysis involved extraction and purification of DNA from the corn followed by polymerase chain reaction (PCR) using specific DNA primers to detect and identify any GM ingredients. All samples were extracted in duplicate and each PCR was carried out at least twice to ensure reproducibility of the results. A

series of controls was routinely incorporated to ensure that the results obtained were reliable and not likely to be due to false positives or negatives.

4. RESULTS

The results presented in this report relate solely to the individual samples tested and do not necessarily represent the GM status of any product in general. None of the popcorn or sweet corn samples were labelled as containing GM ingredients and GM DNA was not detected in any of the samples tested.

5. CONCLUSION

In conclusion, this survey did not reveal any breaches of GM food legislation with respect to the sweet corn or popcorn tested in this survey.

FURTHER INFORMATION

Further information on this survey can be obtained from:

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