

DETECTION OF GM IN PROCESSED SWEET CORN: REVIEW OF PRODUCT TRACEABILITY AND PRODUCTION SYSTEM.

**7-8 July 2003
Report Summary**

BACKGROUND

The review was initiated following detection of GM material by a Japanese laboratory, in a proprietary pizza topping containing sweet corn produced by a local company.

The purpose of the investigation was to:

1. Determine the traceability of processed sweet corn product back to production site and sweet corn variety;
2. Examine the production process to determine whether any contamination of the final product by GM material could occur during the manufacturing process.

REVIEW TEAM

The review was conducted jointly by New Zealand Food Safety Authority (NZFSA) and Ministry of Agriculture and Forestry (MAF), Biosecurity Authority.

THE COMPANY

The company is made up of 6 companies, two of which are relevant to this investigation. One of the companies provides marketing, financial and administrative functions for the group while the other is a specialist food processing company that produces retort packaged vegetables for the retail and commercial sector. Currently the facility is only processing sweet corn. This investigation examined the company's ability to trace seed and product from planting to distribution to customers and the sweet corn processor's processing system, quality control records and process documentation. Most of the company's product (95-99%) is for the export market.

SEED

The company requires that their seed suppliers provide a certificate issued by an independent certified laboratory that the seeds are free from GMO. Certification sighted by the NZFSA-MAF review team for the suspect seed batch stated that no GMO was detected in the suspect variety at the 0.1% level of detection. The covering letter (10 September 2002) that they have received from the supplier states that the seed has been produced by conventional processes to exclude GM, but does not provide an absolute guarantee of GM freedom.

Delivery dockets were sighted by the review team that showed, at planting, the company delivers a specific quantity of seed to the contractor. Unused seed is collected at the completion of sowing for grower refunds and stored by the company in a specific secure seed store; credit notes are produced to enable growers to obtain refunds for seed not sown.

GROWING SITE

The sweet corn variety linked to the positive tests was grown in a field situated at Gisborne. The reviewers sighted and validated trace-back records linking expiry date printed on the product back to the field of origin and date of harvest.

Pollination dates and implications for these paddocks are covered in Incursion Investigation Team report IIT-03/04-GM1-002

HARVEST

The company harvests the corn themselves using a specifically designed sweet corn harvester, owned by the company. No contractors are used. Production is segregated, and single sites and varieties are harvested to prevent the occurrence of mixing. The harvested cobs are taken to the processing plant in covered trailer units owned by the company.

The reviewers confirmed that the truck and trailer units are not “topped up” with other varieties of corn, or corn of the same variety from other growers. The trailer units are weighed on a weighbridge situated near the company before being delivered to the processing plant. Harvested weights are recorded on weighbridge dockets. The review team sighted these dockets. Each variety and grower’s crop delivered to the plant is identified with a tag that describes the variety and the property from which it came. Payment to growers is based on these dockets.

QUALITY ASSURANCE

The existing Quality Assurance System is geared to the detection of cosmetic defects for export product and the monitoring of Food Safety hazards by such means as microbiological testing. The company has a policy of continued quality improvement and have recently appointed a specific Quality Assurance Manager. This role was previously incorporated in the Factory Manager’s role.

PRODUCT

Product is produced as either whole kernel corn (WKC) or whole cob corn (WCC). WCC is a premium value product aimed at the retail market whilst WKC is a new product of the company’s produced for the food-processing industry.

Production summaries of all affected sweet corn products, with batch number, grower and amount of product were provided to the review team with the request that the information must be managed by MAF “in confidence”. This was used as the basis to check production records for processed product as well as records of consignments of seeds sent to growers and on what dates. The review team was able to examine the quality control dockets for the batches of sweet corn in question. These dockets are linked to the batch tags (with grower name included) that accompany every batch through the process.

The processing plant was partly disassembled at the time of the review team’s visit. As a result of the review team’s inspections no potential sources of contamination were identified at the site of production, the factory or the warehouse. There are no additives other than salt and town-supply water added to the whole kernel product. Whole cob product is sealed in retort pouches following blanching prior to cooking and no material can be added after this.

TRACEABILITY OF PRODUCT

Documentation was examined including production summaries, quality control sheets and bin identification tags. This demonstrated that the company could do a traceback from database records based on the expiry date of product. The ease of traceability from all aspects of the system can be improved upon, but for the purpose of this review the system met the requirement of being able to trace all product produced from a specific batch of seed.

Quality control records for the WCC indicate the occurrence of a “pollination event” variously described as “maize” or “cross-pollination” in the sweet corn grown at the property. The staff at the processing plant remember batches from the time frame in question as having a particularly high level of such events. Further analysis of test results has indicated that cross-pollination is not likely to be the source of the contamination.

PRODUCT CONTROL

Using process summary information the review team was able to verify that no suspect product has been released on to the New Zealand market. The company has also isolated the product in Japan.

PRODUCT RECALL

The review team verified that the company has a system enabling follow-up action to be taken to trace and withdraw product from market, and that this system was activated when the GM positive report was received from Japan. This product was identified by the company and sighted by the review team at the company's storage facility in Gisborne.

COMPANY CORRECTIVE ACTION

The company intends to seek all test results for all shipments of the affected seed variety from the supplier from now on. This will be required of all seed suppliers in future. Seed suppliers of New Zealand grown seed will be required to present to the company results of testing of the parent lines.

CONCLUSIONS

- The company has traceability of their product back to seed purchased.
- There was no evidence that contamination of the product occurred at the processing plant. The only material that is added to the whole kernel product is salt and water, in the form of brine.
- The company has taken steps to ensure the product identified from suspect batches has been contained pending further information on the results of sampling and investigations.