

Fact Sheet

GMO Analysis

Guidelines and Information

The technique used by us for determining the presence of GMOs is PCR-based and utilises multiple PCR primer sets. This allows for flexibility in the detection of all current GMO soya and maize varieties and provides rigorous controls on results. There are two types of test available for soya and maize, qualitative and fully-quantitative. The quantitative tests will determine percentage GMO content whereas the qualitative test gives a simple positive or negative answer (at a 0.1% detection limit) with no information on GMO levels. We usually recommend the use of the qualitative test for screening programmes. The answers to specific questions are listed below.

Duration of Analysis

Turnaround time is typically 10 working days from receipt of sample. Shorter turnaround times may be possible but will usually incur additional costs. To assist us in processing your results in the shortest possible time we request that a purchase order number to be supplied with the samples. If a sample is upgraded to a quantitative test following a positive qualitative result, a further 10 working days is required to complete the extra testing.

Limit of Detection

The operational limit of detection for the test is 0.1% GM soya or maize in the sample. The absolute limit of detection is 10-fold lower than this but we use the 0.1% limit to ensure maximum confidence in reporting results to this level. Tests that operate at the absolute limit of detection run the risk of reporting false positive and false negative results.

Real-Time PCR for GM Detection

The validation data from our Real-Time system shows that we can achieve a relative accuracy of around +/- 10% on raw materials, such as soya and corn flours and soya protein isolate, in a single analytical run. This means that a positive result of 1% GMO would in fact contain between 0.9% and 1.1% GMO. Other uncertainties must be taken into account, including sampling and other analytical errors and therefore we consider the relative accuracy is of the order of +/- 25%. Consequently, we believe that data should be reported with these levels of precision in mind.

Samples

Samples should be representative of the larger batch. We recommend a minimum of 200g of most materials (e.g. flour, starch, protein and finished products), but a minimum of 3kg of maize grain or soya beans. This minimum quantity ensures that there are sufficient beans or grains in the sample to achieve a statistically significant result at 0.1% detection. If less than this amount is supplied, the statistical relevance of results at this detection limit will be adversely affected. Samples should be marked for the attention of the DNA and Protein Department. To assist us in reporting results to you, any sample details (such as identification codes or batch numbers), along with the analysis requested, should be recorded on the containers and on paper within the package.



For further information contact Customer Services

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UKAS Accreditation for GMO Testing

We are UKAS accredited for qualitative and fully quantitative tests for GM soya and GM maize in grain, raw materials and ingredients.

Product Types

The products that we are able to analyse are given below for you to refer to:

Simple Soya Commodities

The following can be successfully tested by PCR:

- Soya beans (including hulls and meal)
- Soya protein and soya protein derivatives
- Soya flour
- Soya milk

Simple Maize Commodities

The following can be successfully tested by PCR:

- Maize grain (including meal and by-products)
- Cornflour
- Maize gluten
- Tortilla chips
- Taco shells
- Breakfast cereals
- Crisp-like snacks made from corn

Soy and Maize Derivatives

The following can usually be tested by PCR (individual samples vary, depending on the exact nature of processing):

- Soya lecithin
- Soya oil (unrefined)
- Soya sauce
- Maize starch
- Dextrose/maltodextrins and similar products

Typically we cannot test soya oil (refined), corn oil or glucose syrup by PCR.

Almost all finished products can be analysed. The following have been found to contain relatively high levels of soya or maize:

Quiche (maize)

Kebabs (soya)

Battered products e.g. fish (maize)

Economy sausages and burgers (soya)

Vegetarian "meat-like" products e.g. veggie burgers, tofu (soya)

Cook-chill and pre-prepared meals (soya)

Economy deserts (soya)

Herb and spice mixes (soya and maize)

Food flavouring mixes (soya and maize)



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Powdered protein "health drinks" (soya)
Animal feed (soya and maize)
Baby food/infant formula (maize)
Natto/Miso (soya)



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