INTERTEK FOOD SERVICES

LAB INSIGHT
GUIDANCE & BEST PRACTICES

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INTRODUCTION

Trying to understand food product test requirements can be difficult. Even when you believe the answer to your problem to be found, the choice of options can seem confusing, the terminology bewildering and the results occasionally without context.

It is possible to overcome many of the queries that arise from product / raw material testing by having clear information provided between laboratories and customers before any analysis is performed. As we will see, there are a number of key pieces of information that can be exchanged at the enquiry stage to allow the best advice to be given. But there is one overarching question for food business operators to answer – what do I want my test result to demonstrate?

Intertek offers advice, inspections and certification as critical elements of its end-to-end business protection approach. Our risk-based, targeted analysis, informed by our global technical expertise, is often key in creating due diligence programmes with real insight and allowing our customers to demonstrate compliance. In order for us to best support your analytical requirements, what information do we need you to share?

The Matrix

The first area to be clear on is the nature of the test material itself. Now, it might seem odd to have to ask customers to tell their laboratory provider what products they are sending, but we do, and sample matrix is of real importance.

Knowing what a sample is, what form it is to be supplied in and what ingredients it contains is key in choosing the most appropriate analytical method. Some product matrices may interfere with the methodology; others may not be appropriate for the extraction procedure. In certain cases, the testing requested simply has no value in terms of validating the product (performing standard full nutritional analysis on drinks, for example).

Products supplied with specifications at the request stage are ideal. Also, samples supplied in their finished packaging we love – complete product information that allows visibility of ingredients and claims. Even samples with just a clear description, e.g. "Feta and Beetroot Crumble" will be welcomed. However, a bag of indeterminate powder labelled "Line 3, 11/06/20 16:06 RGFST" leaves us without any indication of special preparation or analytical approaches required.

When enquiring about testing, make sure you provide the product details as fully as you can – it will ensure that no inappropriate methodology is applied, and any limitations of the method advised up front.

The Methods

NMR, PCR, FT-IR, IRMS, GC-MS, HLPC, UHPLC, NGS, AAS, ICP; as is the case with many disciplines, the jargon associated with laboratory techniques can be baffling and intimidating.

If you have a preferred method, then please just mention it at the enquiry stage. It is possible that your customer has requested you to do the work and it is always worth asking them to confirm if they have a specific method that must be employed. Often they do, possibly because there is a technique that they understand and are comfortable with, they have a product history of results against the method and want to meaningfully compare data or they are addressing a specific risk and believe a particular method is the best control. On occasion, the required method is based on an international (ISO), American (AOAC) or British (BS) standard. If you quote this, your lab provider will know if they can offer the standard or an equivalent.

If you don't have a preference, ask your lab provider to confirm the technique to be used.

Expected values

Do you have a target value for your test parameters? If so, sharing this with your lab of choice will allow them to apply any required dilutions, check any deviating results before approval and anticipate any questions you might have regarding possible reasons for results variance.

Know your limits

Limits of detection (LODs) are critical to establish at the outset of testing in order to ensure that the result is meaningful and of genuine value to the client.

They are important as many laboratory LODs are driven by the legal limits set by the EU (this is especially true of contaminants, e.g. pesticides, where the method Limits of Detection tend to mirror the Maximum Residue Levels set by EFSA).

Some limits may not be set in law – not all allergens, for instance, have a legally binding limit – but could still be requested by a retail customer or supplier.

Laboratories tend to employ Limits of Detection based on:

- Compliance with specific legislation
- Customer requirements
- The kit or instrument manufacturer's validation or recommendation
- In-house validation

For these reasons, it is likely that your lab provider will be in line with your requirements. However, it is important to be clear. For some potentially allergenic ingredients, e.g. lactose, sulphites, multiple methods exist – some to show absence and others to show presence within a specified limit. In each case the LOD will be different. Always ask in advance and supply your own preferred LOD if you have one.

I would also highlight the issue of reporting units, which sometimes causes confusion. This can occur when customers try and compare analysed values in, e.g. ug/g, with %, IU or ppb. You should ask for the method's reporting units and compare with any specific requirements your business may have. If the laboratory reports in different units than those required, they may ask if you will accept the existing units or, in some cases, a comment on a conversion.

Accreditation status

Employing an analytical method accredited by an independent body to an international standard is essential for some customers where their brand integrity may be at risk, or where there is the possibility of a legal challenge.

Always make sure you make it clear where this is the case. Even where laboratories show the test as accredited on their scope, it is possible that the accreditation only applies to certain matrices (e.g. meats, fruit and vegetables, edible oils). Outside of these specified categories, any analysis will not be covered by the accreditation and certificates released for that analysis will state this.

Intertek Food Services is accredited in the UK by UKAS to ISO17025. We are always happy to answer any questions about accredited services and areas where we can offer an unaccredited service. This is not unusual and unaccredited methods are often used a) where the test may be considered as pertaining to general quality rather than a safety or compliance issue, b) where demand is low and infrequent (part of the ISO standard requires frequency of testing for accreditation) or c) where there are currently insufficient reference materials available. It is worth noting that even unaccredited tests involve significant amounts of validation and measurements of repeatability, reproducibility, uncertainty etc.

International markets

Anyone who has tried to export food from the UK (especially outside the EU) or import into the country, will understand the amount of work potentially involved. In almost all cases, customs approval is linked directly to the performance of key analyses to demonstrate safety or compliance.

The exact requirements for successfully clearing customs vary from country to country and may involve an esoteric combination of local legislation, international (ISO) standards and the Codex Alimentarius. Codex standards are government agreements, whereas ISO standards tend to reflect market needs.

The laws to be complied with in the target market are likely to be detailed by product type and include prescribed methods and defined limits to demonstrate compliance. So far, so straightforward? Well, not always. Some Codex standards and ISOs are based on methodology which has been superseded in commercial labs and may not be available routinely. As it is not acceptable in all cases to substitute a method for a more recent equivalent, this can cause problems. If your testing request is relevant to a specific target export market, then include that, along with as much of the above information as you can pull together.

Intertek's expertise is not only broad, but deep. Our global Government Trade Services, Product Assurance and Food Services teams can advise on requirements and testing and ensure that all documentation required for certificates of conformity for the target market is in place.

Intertek's Lab capabilities

Intertek has a network of state-of-the-art food testing laboratory facilities based in the UK. Not only do our laboratories provide cutting-edge food testing and analysis services, but our customers also benefit from access to a more extensive global network of expertise and resources than our competitors are able to offer. This is due to Intertek's innovative and bespoke Assurance, Testing, Inspection and Certification solutions, which enable us to provide end-to end support for our customers' operations and supply chains.

At Intertek, we have the capacity and expertise to provide advisory services, as well as assisting with all your food testing requirements including microbiology, such as pathogens like E.coli, Campylobacter, Salmonella, along with nutritional analysis, shelf life testing, label reviews, allergens, meat species identification, food fraud and water testing. Finally, we are able to oversee the product conformity, from advisory in relation to the initial idea through to R&D and ingredient approval, through to manufacture of the finished product and placing that product on the market and marketing substantiation.

ABOUT THE AUTHOR

Patrick McNamara, Technical Specialist Manager, Food Services UK, has been in commercial food laboratories since 1996, working as a food chemist with clients that included some of the UK's largest supermarkets. Patrick was then involved in managing retailer due diligence and graduate training until he joined Intertek in 2016. He now works as Technical Specialist Manager, advising clients on testing programmes to support their end-to-end business security.

Intertek is a leading Total Quality Assurance provider to industries worldwide. Our network of more than 1,000 laboratories and offices and over 46,000 people in more than 100 countries, delivers innovative and bespoke Assurance, Testing, Inspection and Certification solutions for our customers' operations and supply chains. Intertek Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enabling our customers to power ahead safely.

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