

# Honey Testing



right solutions.  
right partner.



ALS Analytica Laboratories offer a broad range of tests for the New Zealand honey industry. We understand honey and the needs of your business and are always happy to help you decide what tests to do and how to understand the results.

## Accreditation

Detail of our accreditations is available on request and include:

- IANZ accreditation to the ISO 17025 standard.
- MPI Recognised Laboratory for Tutin, Glyphosate, AFB, and the DNA & Chemical Markers tests that form a part of MPI's definition of mānuka honey.

## Turn-around Time

Listed turnaround times apply to all samples received before 12pm on any given working day. All samples received after 12pm may carry over to the next available run, on the next working day.

## Sample Submission

- Analytica have specially designed sample containers for you to use when sending in honey. Our sample containers are provided free of charge and to place an order simply email [dispatch@analytica.co.nz](mailto:dispatch@analytica.co.nz)
- Analysis request forms are available for download from our website and must accompany your samples to the lab [www.analytica.co.nz/resources/download-forms/](http://www.analytica.co.nz/resources/download-forms/)
- Please provide a minimum sample of 50g for testing. Refer to our tech note 'Tests, TAT's and Sample Volumes' to find the additional amount of sample needed per test.

- Once you have decided the testing you require, complete an Analysis Request form and send it along with your samples to us at this address:

Analytica Laboratories  
Site E–Ruakura Research Centre  
10 Bisley Road  
Hamilton, 3214

## Duplicate Sample

If you require Microbiology or Extended Chemistry testing you will also need to provide an additional sample pot. See our 'Tests, TAT's and Sample Volumes' tech note for more information.



## Sample storage

Samples will be retained for 4 weeks following testing before being disposed of. If you would like to have your samples returned to you after the 4 weeks (for the cost of handling, packaging, and return shipping), please indicate this on your request form.

## Analytica Direct

Our online customer dashboard enables you to view test results at any time, access all existing data and reports, filter, search and save results, as well as having API functionality.

## Analytica Online

Our online pre-registration portal allows you to pre-register samples, speeding up the process of registration when they arrive at the lab, and saving you the job of filling in paper submission forms. If you are using the pre-registration portal, please ensure you print out your booking confirmation and send it in with your samples or transcribe the job number onto the packaging.

## Test Packs

Our packages simplify the process of requesting common tests at extraction and processing and provide a price advantage that reflects our increased efficiency when running multiple tests at the same time. You are welcome to request additional tests if you wish.

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<b>Mānuka Pack</b>	Provides the range of testing information required for testing mānuka grade (such as MG or NPA) and authenticity (using the MPI 5 Attributes with multi/mono/non-mānuka classification).
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<b>Extraction Pack</b>	Provides the range of testing information that is often requested by honey buyers. In addition to mānuka tests for grade and authenticity, it includes the C4 Sugars Screen test. All tests are IANZ accredited and are MPI recognised (where relevant).
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<b>Processing Pack</b>	Provides the range of testing information that is often requested by processors who want information to export and sell packed honey. It includes mānuka tests for grade and authenticity, as well as the C4 Sugars AOAC test. All tests are IANZ accredited and are MPI recognised (where relevant).
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## Individual Tests

### Mānuka Grade and Authenticity

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<b>Mānuka 3-in-1 (plus free mānuka forecast)</b>	<p>This test measures DHA, MG, and HMF in honey samples, and calculates NPA from the MG result using a conversion equation provided by the UMF Honey Association. This is the most commonly used test for mānuka honey grading.</p> <p>Results for the mānuka 3-in-1 test change over time, and the mānuka forecast provided free with the test estimates the future grade of the honey if stored at controlled temperatures. Built on data from several years of incubation experiments, the report helps identify the future potential of honey when stored carefully. While provided free when requested at the same time as a 3-in-1 test, reports can be generated at a small charge if results are provided from other sources.</p>
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## Leptosperin

This is a chemical marker which is unique to mānuka and is used to authenticate mānuka honey. It is a part of the UMF Grading system and is required if UMF Honey Association members wish to label a batch of honey with a UMF grade. Leptosperin is quite stable over time and is often tested in freshly extracted honey to provide information to buyers. The UMF Honey Association require laboratories to collect a royalty each time a Leptosperin test is carried out—\$5 +GST for UMFHA members, and \$10 +GST for others.



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## MPI 5 Attributes

The markers first proposed by MPI in mid-2017 have now been confirmed as a way of defining mono-floral or multi-floral mānuka honey, and Analytica is approved by MPI to perform all these tests. All 5 attributes need to pass MPI's definition for the honey to be labelled as mono-floral mānuka, or multi-floral mānuka for export. For more information see: [www.mpi.govt.nz/growing-and-harvesting/honey-and-bees/mānuka-honey/](http://www.mpi.govt.nz/growing-and-harvesting/honey-and-bees/mānuka-honey/)

**MPI mānuka chemical markers**—a suite of the 4 chemical markers included in the MPI mānuka definition. These can be tested separately from, or at the same time as the MPI mānuka pollen DNA test.

**MPI mānuka pollen DNA**—the DNA test which identifies whether there is sufficient mānuka pollen DNA in the sample for it to meet the MPI mānuka definition. This can be tested separately from, or at the same time as the MPI mānuka chemical markers test.



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## Residues, Toxins & Hive Health

### Tutin

This test measures the concentration of the potent natural toxin, Tutin, found in honey harvested in the North Island and northern South Island of NZ. There are regulations about testing and otherwise managing honey for Tutin—see MPI's website: <http://www.mpi.govt.nz/processing/honey-and-bee-products/managing-tutin-contamination-in-honey/>

**Tutin Individual**—provides a result for an individual sample that can be directly compared with the MPI maximum residue limit of 0.7 mg/kg.

**Tutin Composite**—allows for up to 10 samples to be combined into a single sample to be analysed. If low enough, the result allows you to confirm that none of the samples in the composite have a concentration above the MPI maximum residue limit. A high result will require further testing of samples to confirm which (if any) are above the maximum residue limit.

**Tutin 5 Sample Composite Pack**—this pack allows for up to 5 samples to be tested as a composite, for a flat rate. When 5 samples are tested using this option, the average cost per sample is the same as a 10 sample composite, with the advantage of having a smaller group to re-test in the event of a high composite result.



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**American Foulbrood (AFB)** This is a DNA PCR-based method that detects the presence of AFB spores in honey. This can be used as a management tool to understand AFB risk within a beekeeping operation and can be useful for checking whether a honey conforms to Chinese import requirements.

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**Glyphosate** This is an herbicide that can end up in honey when sprayed in areas where bees are foraging (e.g. pasture that is being desiccated during wilting) or near hives. Glyphosate is the active chemical in Roundup. This test can be used to check whether glyphosate use near hives is contributing to increased levels of glyphosate in honey and can be useful for checking whether a honey conforms to Japanese import requirements. We will report both.

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**Amitraz** This is the active compound in Apivar/Apitraz strips used to kill Varroa mites. When strips are over-used in hives amitraz can end up in the honey. Screening of batch samples representing hive sites will give information about the appropriateness of use of miticides at those sites, as well as identifying any honey posing a residue risk to manufacturing operations.

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## Adulteration

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**C4 Sugars** This test follows the internationally recognised AOAC 998.12 method for detecting cane sugar or high fructose corn syrup in honey. It uses a technique called Isotope Ratio Mass Spectroscopy. There are some complications when the test is applied to mānuka honey, as the test result can increase (get worse) with time. Please contact the laboratory for more information.

**C4 Sugars AOAC**—a comprehensive test following the AOAC 998.12 method. With less variable results than the Screen Method, it is recommended for use in final production or packed samples, or situations where reduced variability in results is of value.

**C4 Sugars Screen**—a ‘cut down’ version of the AOAC Reference Method which gives a good indication of what the test result would be if tested using that method, but at half the price. Recommended for use in drums or bulk honey.

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## General Honey Tests

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**Pollen Count** Provides a count of the number of pollen grains per gram of honey and identifies the pollen grains that are most common in the honey sample. The test is often used to identify the flowers that bees have been visiting when collecting nectar and is often requested for honey that does not meet the MPI definition of being a mono-floral or multi-floral mānuka. Pollen count results can be needed for honey that is being exported to some overseas countries.

For guidance on how to interpret your pollen count results, see our ‘Understanding your pollen count results’ tech note.

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## Diastase

This is an enzyme that is found naturally in honey and can be used to indicate the age and exposure of honey to heat. Testing for diastase forms a part of CODEX for honey and is receiving increased attention in the last 1-2 years for honey being exported to some parts of the world. Analytica offer both the Phadebas Method and the Nitrophenol Method for testing Diastase

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## Physical Properties Suite

A suite of four accredited tests which measure moisture, colour, conductivity, and brix (sugar content) in honey. Among other things, these tests are useful for characterising honeys from different origins honeydew, and other floral sources.

**Colour Only**—is often used for characterising honeys from different floral sources.

**Moisture Only**—honey with a moisture content that is above 18% is at an increased risk of fermentation. You may wish to have a yeast test performed on high moisture honey to investigate this risk further. High moisture levels are often found in uncapped honey.

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## Heavy Metals

On occasion overseas buyers of honey will express interest in knowing about concentrations of heavy metals in honey. Most commonly lead (Pb) and Zinc (Zn) are requested, but our testing technology makes it possible for a larger suite of common heavy metals to be tested for only a small increase in total cost.

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## Microbiology & Extended Chemistry

Analytica subcontracts microbiology and extended chemistry testing to our partner laboratories Food Lab Pacific (FLP) and CAIQTEST (Pacific), who are onsite here with us. Samples may also be subcontracted to Gribbles Dunedin (LABNET) and QSI, all are well-established and accredited testing laboratories.

Samples can be submitted directly to Analytica for forwarding or can be sent direct to our partner laboratories by prior arrangement. Invoicing for tests will come from Analytica, to simplify your process of paying bills.

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**Aerobic Plate Count (APC)** A general method which tests the hygiene of the honey, by measuring the number of micro-organisms which grow in the presence of oxygen. Higher results indicate contamination, which can arise from beekeeping or extraction practices. APC is a common requirement when exporting honey.

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**Yeast & Mould (Y&M)** A general method which measures the number of yeast and mould organisms in the honey (but not bacteria). Higher results can indicate a risk of fermentation in the honey, especially if moisture levels are above 18%. Y&M is a common requirement when exporting honey.

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**Osmophilic Yeast** A more specific method which measures the presence of yeasts that can grow in a high sugar environment like honey. This is another useful test for assessing risk of fermentation in honey with moisture levels above 18%.

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A wide range of other tests are available—please contact the laboratory to discuss.



## A note about microbiology methods

The least expensive testing options use internationally recognised methods from the United States or Europe. In most cases these methods will be fit for purpose and are recommended for use. The official test methods used in China are called GB methods, which can differ slightly from the international methods. If your honey is to be exported to China, you may wish to specify testing using GB methods.

## Contact us

Customer Service  
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