

About Us

MilkTestNZ continues to lead the way in providing solutions to emerging issues in the dairy industry.

During the peak of season, MilkTestNZ receives over 25,000 samples a day. The high level of automation in place allows MilkTestNZ to process large volumes of samples with a rapid turnaround time. MilkTestNZ now tests 100% of supplier milk from throughout the country.



In conjunction with our strategic alliance partner (Analytica Laboratories), a number of tests have been developed including detergent residues (QAC, NPE, etc.), teat spray residues (NPE, iodine, chlorhexidine) and 1080.

MilkTestNZ provides a rapid testing service at extremely competitive prices for our customers.



Inhibitory Substances & Antibiotics Testing

Inhibitory Substances in Milk

Testing for inhibitory substances is carried out on all suppliers, according to the regime set by their dairy company. Samples are tested to ensure that there are no detectable levels of antibiotics or other inhibitory substances in the raw milk before manufacturing. Inhibitory substances need to be monitored in milk and dairy products, as they can pose a risk to human health and negatively impact the quality of the product.

MilkTestNZ can detect the presence of inhibitory substances in raw milk and dairy products at 0.003 IU/mL Penicillin G Equivalent during the screening process and detect at even lower concentrations via LC-MS/MS testing. This provides confidence and ensures that the highest quality of dairy products can be manufactured.

How are Samples Tested?

Samples are tested through a screening assay, using a 96 well Delvotest® T plate containing agar with a pH indicator. Each well is inoculated with antibiotic-sensitive bacteria which break down lactose to lactic acid. This production of lactic acid then causes a pH change within the agar that indicates that growth has occurred and no inhibitory substances are present. If there are inhibitory substances present, they will prevent the bacteria from growing, no lactic acid will be

produced, and no change will occur to the pH indicator. Samples that do not change with the pH indicator are given a result of “interim positive” and the dairy company is informed. All interim positives are then further confirmed via the confirmation process.

Confirmation of the Result

The confirmation process confirms the original result, as well as providing an estimation of the concentration range of the inhibitory substance present. The confirmation process also determines if any antibiotics present are a beta-lactam (most common family of antibiotics found in New Zealand milk). The determination of beta-lactam antibiotics is carried out by the use of a penase enzyme.

Penase is mixed with a sample of the interim positive, and this mix is tested again on the Delvotest® T assay. Penase enzymes target and break down the beta-lactam ring of beta-lactam antibiotics. When the beta-lactam ring is broken, the inhibitory action of beta-lactams is stopped, allowing the antibiotic-sensitive bacteria to grow. If the interim positive has bacterial growth after the addition of penase, the antibiotic present is a beta-lactam and given a result of “penase sensitive”. If the interim positive still inhibits bacterial growth after the addition of penase, the sample is “penase resistant” and not a beta-lactam.

Contact Information

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Inhibitory Substances & Antibiotics Testing

Understanding the Results

Results are reported based on the level of inhibitory substance detected on the plate. The table below outlines the different results which may be reported.

| Result Reported | Code in MADCAP |
|--|----------------|
| <0.003 IU/mL | 0 |
| ≥0.003 IU/mL (Interim Result) | 1 |
| ≥0.003 – <0.006 IU/mL (No Penase Test Performed) | 20 |
| ≥0.003 – <0.006 IU/mL (Penicillinase Resistant) | 21 |
| ≥0.003 – <0.006 IU/mL (Penicillinase Sensitive) | 22 |
| ≥0.006 – <0.01 IU/mL (No Penase Test Performed) | 30 |
| ≥0.006 – <0.01 IU/mL (Penicillinase Resistant) | 31 |
| ≥0.006 – <0.01 IU/mL (Penicillinase Sensitive) | 32 |
| ≥0.01 – <0.03 IU/mL (No Penase Test Performed) | 340 |
| ≥0.01 – <0.03 IU/mL (Penicillinase Resistant) | 41 |
| ≥0.01 – <0.03 IU/mL (Penicillinase Sensitive) | 42 |
| ≥0.03 IU/mL* (No Penase Test Performed) | 50 |
| ≥0.03 IU/mL* (Penicillinase Resistant) | 51 |
| ≥0.03 IU/mL* (Penicillinase Sensitive) | 52 |

*Results above this level are diluted 10-fold to give an estimated concentration.

Note: While a sample may come back as <0.003 IU/mL, this is the reporting level of the assay, thus inhibitory substances may be present at even lower concentrations.

LC-MS/MS Confirmation

All samples that have been confirmed positive for inhibitory substances are tested further via Liquid Chromatography Mass Spectrometry (LC-MS/MS). The LC-MS/MS is a powerful instrument that can identify chemical compounds via their mass and molecular structure. With LC-MS/MS technology, MilkTestNZ can accurately identify the specific antibiotic responsible for the positive result, as well as the concentration of the antibiotic found in the sample.



MilkTestNZ is accredited to ISO17025 by International Accreditation New Zealand (IANZ) under the Dairy Testing Laboratory Accreditation Programme

