

# Metals

## Food Industry

### “Specialist Laboratory Services”



Although some metals are essentially healthy in small doses, they can be quite toxic when exposure is at certain levels. For instance, copper, selenium and zinc are essential to maintain the metabolism of the human body. At higher concentrations they can be poisonous and have a tendency to bioaccumulate, like most heavy metals. Heavy metals are able to be absorbed far greater than their ability to be metabolised or be excreted (e.g. mercury). Mercury occurs naturally in the environment and it can also be released into the air through industrial pollution. Bacteria present in water can change mercury into methyl mercury which binds tightly to the proteins in fish tissue. As smaller fish are eaten by predatory fish and so on, the methyl mercury accumulates up the food chain. High amounts of mercury can damage the central nervous system which can cause memory loss, lack of coordination, reproductive problems, and possibly death. Hence, the importance of being able to monitor low level concentrations of metals in food to ensure that levels are not exceeded.

Recommended Daily Intakes (RDI) are set by Food Standards Australia New Zealand (FSANZ) and are monitored through survey's such as the Total Dietary Survey and the National Residue Survey. Leeder Consulting also conduct testing for the local, export and import markets and are an approved testing laboratory under the Australian Quarantine and Inspection Service (AQIS) Imported Foods Program. Metals that are monitored by FSANZ and AQIS can be found in the table below.

Table 1.0. FSANZ 20th Total Dietary Survey

Metal	Limit of Reporting (mg/kg)
Antimony	0.002
Arsenic (total)	0.01
Arsenic (inorganic)	0.05
Cadmium	0.005
Copper	0.01
Lead	0.01
Mercury (total)	0.002
Mercury (inorganic)	0.0005
Selenium	0.01
Tin	0.01
Zinc	0.01

Leeder Consulting can offer a full range of metals for testing in food, water and soil by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). ICP-MS can identify and quantify at higher sensitivities and can cost effectively analyse a suite of elements in the one analysis. Detection limits range from 0.01-1ug/L with up to 60 elements per analysis.

Quality Assurance and Quality Control are primary considerations when undertaking food analysis. Leeder Consulting is AS/NZS ISO 9001 Certified, the laboratory is NATA Accredited, a Registered Quarantine Laboratory and “Appointed Analyst” under the Commonwealth Imported Food Control Act.

Leeder Consulting offer a range of specialised high-tech, non-routine and on-site services. Access to leading edge technology and expertise in Australia and overseas guarantees results when and where you require. To discuss your requirements or for more information call us now.



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