



# Infant Formula

PROVENANCE SCIENCE SERVICE

**In 2023 Source Certain analysed key infant formula brands to determine if their origin can be verified using scientific provenance verification technology, TSW Trace®.**

In 2023, Source Certain led a world-first initiative to confirm that TSW Trace® verification technology could be used to accurately verify the manufacturing origin of infant formula.

## THE DETAILS

Formula and milk powder supply chains have faced a spectrum of issues over the last decade. From mislabelling and misrepresentation of origin to adulteration, and in some cases, complete substitution, these have a profound impact on availability, product safety, brand and industry value, and consumer trust.

In 2023, Source Certain developed a program to demonstrate the ability of scientific provenance verification technology, TSW Trace, to verify the origin and differentiate various brands and batches of commercially available infant formula.

## SCIENTIFIC PROVENANCE VERIFICATION

TSW Trace® is the proprietary scientific solution that underpins our provenance science services. It utilises trace element and stable isotope analysis to determine a unique chemical profile, or 'signature', for a reference sample. The signature can be referenced at a later point to verify an origin claim for a product claiming to come from the same location as the original sample.



**Chemical profiling of naturally grown or manufactured material is one of the most robust methods available to enhance supply chain traceability for organic and inorganic products.**



## PROGRAM DETAILS

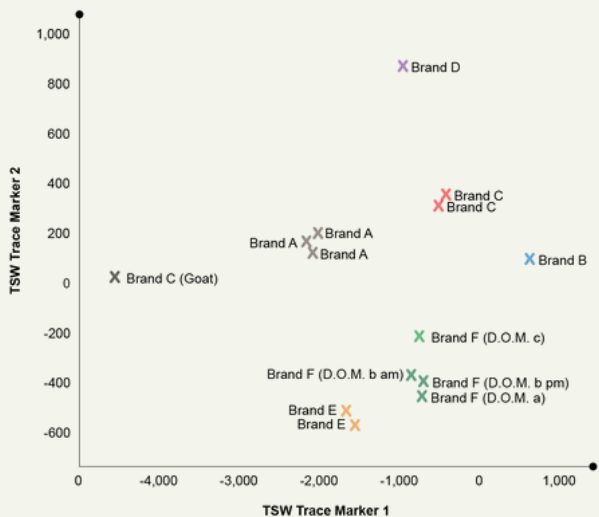
- Infant formula was sourced from 14 producers globally.
- Several tins from both the same batch and different batches were analysed, and the results were assessed using multivariate analysis.
- The results enable verification of source – the geographical location and the batch of product manufactured.



The program determined that brands and origin are easily discriminated.

## PROGRAM OUTCOMES

- As the de-identified graph on the right indicates, individual brands are easily discriminated.
- Timestamped tins from a single brand can also be discriminated.
- The technology also showed discrimination between tins produced 2 hours apart.
- Formula of an unknown origin was verified to its brand and timestamp of origin. This is useful in cases of recall but also for overcoming market access issues.



To find out more please contact us. Scan the QR code to find more case studies.  
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