Agilent Case Study: Source Certain

Using Elemental Fingerprints To Confirm The Geographic Origin Of Products

Source Certain has pioneered the use of elemental analysis for minerals, beverage, and food authenticity testing.

Agilent spoke to Cameron Scadding, CEO at Source Certain in Perth, Australia. The company is a pioneer of minerals, beverage, and food authenticity testing. Their robust scientific solutions are trusted by worldwide agriculture, seafood, mining, and resource sectors. Source Certain helps food and resource companies strengthen their supply chains by providing a scientific solution that verifies the origin of their products.

Q. Can you tell us what Source Certain does?

We are Australia's leading provider of provenance science services. We help food and resource companies strengthen their supply chains by providing a scientific solution that verifies the origin of their products.

Our service portfolio also includes an established and highly regarded foundational analytical and forensic service department that has been supporting global law enforcement for over fifteen years.

Q. What do your customers use your services for?

Product origin and production claims, like sustainable and ethical sourcing, are vital information to consumers these days. It's not just the product that matters anymore but also the promise. These promises are becoming as important, in some situations, more important than price and other product features. Our customers come to us to help them support their product promises.

We provide much more than just the analytical testing component. From supply chain mapping, database building, routine in-market sampling and crafting stakeholder communications, our provenance science service offers an end-to-end solution for clients.

"Our clients tend to be loyal and stay with us for a long period of time. Agilent is always there, there's always a timely resource available when we need it."

Cameron Scadding
CEO
Source Certain

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Q. What sets you apart from your competition?

Our programs tend to run for several years and we have found that having a committed inhouse commercial and scientific team is key to maintaining these long term relationships.

Our state-of-the-art lab certainly sets us apart from the competition because of the quality control and efficiency it provides us. We have an ongoing internal R&D process to continuously improve our solutions – we can only do this if we have access to the methodologies and instrumentation ourselves.

Our analysts are highly skilled and manage all aspects of a project – not just the analytical part. They work with our customers directly, so they understand their business intimately and our customers can talk directly to them if they have a question.

Q. What type of samples do you receive?

We analyze a very wide range of sample types – from seafood to gold to grains and minerals. Almost any naturally derived product can undergo our analysis.

We have to be able to analyze whatever comes into our lab – so an instrument's ability to handle whatever we throw at it is important.

Q. Can you describe your analytical approach?

Typically, we measure all elements in every sample. This generates loads of data so good management of this data is critical to our process.

We also need high integrity results that will stand up in a court of law – our findings have been admitted as forensic evidence in courts before. This makes our service attractive for certain commodities.

When we receive a new type of sample we'll typically add it to the end of an ICP-OES batch to give us an idea about which elements are in the samples and their concentrations. Alternatively, we'll use our laser ablation ICP-MS system to provide that information.

We have one ICP-OES for each ICP-MS. We run all samples on both the OES and the MS and this is used as a cross check for results. There are very few CRMs for our sample types, so we have multiple ways to QC results.

We can achieve PPQ detection limits without a cleanroom by carefully eliminating sources of contamination from the analysis.

Q. What is your relationship with Agilent?

Our relationship with Agilent goes back to 2005. We now have six Agilent atomic spectroscopy instruments. We purchased two new ICP-MS instruments recently as we needed more capacity.

Q. What features of the Agilent instrument have you found the most useful?

As we have labs at two different sites we have setup remote control of our instruments. I can log onto any of our ICP instruments from anywhere. This was useful when we had to implement social distancing during the pandemic.

Our sample measurement times are long as we measure most elements in each sample. The dual view mode of the 5900 ICP-OES allows us to measure both the radial and axial view for each element at the same time, which reduces analysis time and gives us more data.

We use a switching valve on both our ICP-MS and ICP-OES instruments – I'm a huge fan of these from a productivity perspective. We also aim to minimize our cost of analysis per sample. Argon is a major cost and the switching value helps us contain that cost. At our new lab we have installed a much larger dewar to supply all the instruments for a longer period than we previously could.

Q. How have you found Agilent's support?

If something does go wrong with an instrument our analysts can typically solve the problem 80% of the time. If they can't fix it then they call the Agilent service – we've found their response time and capabilities to be exceptionally reliable and professional.

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