MILESTONE
HELPING CHEMISTS

MILESTONE'S ULTRAWAVE ALLOWS CANNABIS LABS TO STREAMLINE HEAVY METAL TESTING

CUSTOMER

CannaSafe Labs is a full-service cannabis testing laboratory based in Van Nuys, CA with a dozen scientists and researchers, using sophisticated analytical instrumentation. They pride themselves on being a one-stop solution for their 700+ clients where cannabis cultivators and distributors can ensure that they are in full compliance with all regulatory requirements and that their products are effective and safe for use.

CHALLENGE

The company is committed to consumer safety and quality assurance standards for cannabis testing. The lab needed a microwave digestion system that was not restricted to batching similar matrices, but had the capability of handling multiple samples in a simultaneous manner irrespective of the sample matrix.

SOLUTION

With the acquisition of the ultraWAVE, CannaSafe can now digest all their cannabis and related products rapidly, safely, and efficiently. The ultraWAVE's ability to digest different samples at the same time, without crosscontamination saves time and allows CannaSafe to keep up with increased throughput demands.

INSTRUMENTATION

The company offers the full range of quality testing of cannabisproducts for the traditional analytes including potency, terpenoids, pesticides, residual solvents, moisture content, mycotoxins, pathogens, foreign materials and heavy metals. To carry out these analyses they have invested in a suite of analytical instrumentation including: Liquid and Gas Chromatography (LC/ GC) fitted with both traditional and mass spec (MS) detection using single and triple quadrupole technology, Polymerase Chain Reaction (PCR), Thermogravimetric Analyzer (TGA), and Microscopy, together with inductively coupled plasma massspectroscopy (ICP-MS).

IMPLEMENTATION

Because of the dramatic increase in CannaSafe's heavy metals workload over the past 12 months, preparing a sample for analysis is often the rate determining step. The actual measurement of the four major heavy metals by ICP-MS would typically take a few minutes. Unfortunately, preparing the sample using traditional digestion techniques and getting it into the instrument could easily take 1-2 hours, depending on the sample matrix. Despite a talented group of scientists, their heavy metals workload was severely impacted by the sample digestion step prior to ICP-MS analysis.

LAB PROFILE
ultraWAVE | CANNABIS

SOLUTION

After evaluating a number of different closed vessel digestion systems on the market it became obvious that only Single Reaction Chamber (SRC) technology using Milestone's ultraWAVE would give CannaSafe the flexibility and throughput to keep up with their workloads. The ultraWAVE's ability to digest different samples at the same time, without cross-contamination, saves CannaSafe a significant amount of time and allows them to keep up with the increased demands. However, what has surprised CannaSafe the most is that recoveries of volatile elements like Hg are much better than previously achieved, thus now even the most challenging samples can be characterized with accuracy and precision.

"The system allows for high efficiency and throughput, leading to faster turnaround times. The fact that you can run multiple sample matrices concurrently is a game-changer for the cannabis industry. In my mind there's no better solution for preparing samples for trace element analysis."
– Iniobong Afia Executive Lab Director, CannaSafe

"The ultraWAVE performs extremely well and is able to handle different matrices with relative ease in one simultaneous run. We have also been impressed with the excellent and timely response from the Milestone applications and technical support team."

FUTURE PLANS

The data that CannaSafe is collecting will prove invaluable in current and future scientific studies to get a better understanding of the impact of cannabis on the human body. For that reason, CannaSafe has a research pipeline with local universities in California dedicated to finding genetic primers specific to individual people. Aaron Riley, President at Cannasafe, firmly believes that someday there will be genetic tests that will be able to identify what strain of cannabis is best suited for any individual. He states, "we'll be able to tell how certain cannabinoids are going to affect someone, or which topical treatment, ingestion, or smoking is the best approach, or even which strain contains optimum terpenes for a person's specific ailment."

As their workload increases, CannaSafe will also consider further instrument purchases in order to increase sample throughput for all assays, particularly for elemental impurities. They currently determine the "big four" heavy metals, Pb, Cd, As, and Hg on a regular basis. However, if the cannabis industry eventually becomes regulated and falls under the umbrella of the FDA, there is a strong possibility that the full suite of 24 elemental impurities required by the pharmaceutical industry will need to be measured.

ABOUT MILESTONE

With over 50 patents and more than 20,000 instruments installed in laboratories around the world, Milestone has been widely recognized as the global leader in metals prep technology for the past 30 years. Committed to providing safe, reliable and flexible platforms to enhance your lab's productivity, customers worldwide look to Milestone for their metals digestion, organic extractions, mercury analysis and clean chemistry processing needs.

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