



| CUSTOMER Nutrilab has existed for more than 60 years as the quality's assessing laboratory of the Schouten Group that celebrated its 125th anniversary in 2018. Nutrilab has become an independent commercial laboratory since 1990. Nutrilab is a specialized in protecting quality and ensure safety of an increasingly global food supply chain.

| CHALLENGE "We needed new technologies able to handle the growth in sample workload and to get complete digestion in a safe lab environment."

| SOLUTION "Since 2015, we invested in an ETHOS UP microwave digestion system from Milestone to help reduce our sample prep bottleneck. This system increased the sample digestion capacity of our laboratory by 50%, while reducing costs, and significantly improving digestion quality."

| BACKGROUND

According to Nutrilab, food companies should not only be guided by laws and regulations, but also undertake the responsibility to produce and process safe food. Nutrilab, which is specialized in feed and food analyses, has the goal to assure high safety standards. By implementing new technologies and procedures, such as microwave digestion of samples for elemental analysis and LC-MS/MS analysis for allergens, they are at the forefront in increasing efficiency in food testing laboratory analyses.

| MEETING REGULATIONS

"It is fundamental to comply with European requirements in the area of chemical and microbiological contaminants in food, feed and pet food. It is up to the producer to directly assess foodstuff, or to decide to assign analyzes to commercial laboratories, such as ours" says Pieter Vos, director of the Nutrilab based in Giessen, Holland.

"But meeting regulations is not enough from our point of view. Companies must also be aware that they have their own responsibility to bring safe food to the market.

A supervisory authority is always remote; companies, on the other hand, know where the risks are, what they need to look out for, what kind of preventive measures they can take. Our role in this mainly concerns measuring and analyzing, but it is not limited to this only. We are strongly involved in the whole process to investigate possible cause of contaminations with the final goal of working together to get food safety as high as possible."

LAB PROFILE

ETHOS UP | FOOD



| EFFICIENT SAMPLE PREPARATION

Partnering with the customer can also be translated into performing the analyzes as efficiently as possible, which results in benefits such as cost, speed and reliability. “We at Nutrilab are constantly looking for ways to achieve that. This is possible through the development of new methods, optimization of processes and development of new services”, says Bart van der Nagel, who has been working as a R&D manager at Nutrilab for more than a year.

In terms of efficiency, Nutrilab is currently taking a big hit in the field of sample preparation for elemental analysis. “We have been using ICP-OES for the element analysis for years, but partly because of developments in regulations - the standard for cadmium in food has recently been lowered - we want to be able to achieve a lower detection limit.

Moreover, we also want to be able to detect heavy metals in baby food, where the standards are even sharper. We have therefore invested in an ICP-MS for the trace analysis of contaminants such as arsenic, cadmium and lead. For the determination of mercury we have a separate mercury analyzer. The ICP-OES is now mainly used for measuring minerals” says Bart.

“We are also getting more and more samples to analyze: we are gaining new customers and are also increasing the number of requests from existing customers.”



Photo: R&D manager Bart van der Nagel with Milestone's ETHOS Up microwave digestion system with which Nutrilab performs the digestion of samples for ICP-OES element analysis and ICP-MS contaminants analysis.

| MICROWAVE DIGESTION

The sample preparation for the element analysis was performed using a open vessel digestion systems. This technology required long sample preparation time (up to two hours) and did not offered ideal working conditions for the analysts due to the acid vapors that were released in the fume cupboard. Moreover, relatively large quantities of sample and chemicals were needed to get complete dissolutions.

Since 2015, they implemented microwave digestion technology in their lab. This technique offers several advantages:

- Samples can be weigh very accurately and unlocked directly in the acid in a closed vessel, resulting in less loss of volatile elements.
- Due to the microwave radiation, the sample is heated from the inside, which gives a more uniform heat profile than with the conventional method.

The sample preparation with microwave technology is also faster. With the ETHOS UP of Milestone, which was supplied by Salm and Kipp, the microwave program lasts from fifteen minutes to twenty minutes. Including cooling, the lead time for the fourteen samples (and one blank) that fit in the tray is one and a half hours. This is a gross time, because during the program running time, the analyst can start with the preparations of the next run. With ETHOS UP you can set different programs based on temperature and/or power, you want to achieve, enabling to optimize the digestion of specific matrices.

Because the ICP-MS will also be added in the short term, the Milestone ETHOS UP will be used more and more. “With three important lines of analysis, sample preparation should not become a bottle-neck.

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| 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.



MILESTONE
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