



Working Group: Detection and Quantification of *Legionella*

Background:

AOAC INTERNATIONAL established the Analytical International Methods and Standards (AIMS) program in 2018, in an effort to meet emerging industry needs. Specifically, the stated goal of AIMS is to “...provide standards for microbial pathogen detection that will incorporate novel and emerging technologies...for projects that will focus on delivering analytical solutions for current capability gaps in laboratory testing, responding to emerging microbial threats to food safety, and developing standards for the use of cutting-edge diagnostic technologies and applications”.

A thought leader discussion was held during the AIMS session at the 2023 AOAC Midyear Meeting to understand current industry needs regarding detection, and enumeration of *Legionella* spp. Representatives from method development, independent laboratory, and the water treatment industries provided perspective on gaps with currently available cultural techniques, and the need for a framework for validation of alternative methods.

Specifically, the most widely accepted method for enumeration of *Legionella* spp. is ISO 11731 (Water Quality – Enumeration of *Legionella*) poses a number of challenges to the end user. Notably, its long time to result (7-14+ days), room for subjective interpretation, and variable quantitative accuracy for different *Legionella* spp. Both cultural, and molecular, alternative methods have been developed, but there is currently no framework for robust validation.

The focus of this program will be to provide a framework for validation of alternative methods in *Legionella* detection and quantification. This work will also expand the reach of AOAC INTERNATIONAL into the water industry. As such, success of this program may provide a platform for the establishment of a standalone science program focused on microbial and chemical contaminants in water.

Goals:

1. Establish an interdisciplinary Advisory Panel within AIMS focused on *Legionella*.



2. Convene a Working Group to draft Standard Method Performance Requirements (SMPRs®) for molecular quantification of *Legionella*.

- Determine appropriate reference method parameters.
- Establish success criteria for molecular methods.
- Allow framework for modern molecular technologies (e.g., multiplex qPCR, ddPCR, etc.).

3. Recruit microbiologists for a *Legionella* Expert Review Panel.

- Expertise in molecular techniques (i.e., PCR, qPCR, ddPCR)
- Expertise in *Legionella* culture and quantification (i.e., ISO 11731)
- Commitment to the AOAC INTERNATIONAL standards for method validation

4. Establish ties with other industry stakeholders globally.

- The American Society for Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
- The American Society for Health Care Engineering (ASHE)
- American Water Works Association (AWWA)
- The Water Management Society
- The United Kingdom Health Security Agency
- Others

5. Develop framework for harmonized validation with international method accreditation bodies.

- AFNOR
- MicroVal
- NordVal
- Others

Seeking Support

The *Legionella* Working Group will be established under the auspices of AIMS but will be guided by an independent Advisory Panel. This panel will meet at least quarterly to determine the objectives of the working group, review progress, and consider any required directional changes.

Advisory Panel Organizations are eligible to receive AOAC discounts and are highlighted on the AOAC website and program communications.

Annual Dues & Benefits	Voting Advisory Panel Member	Method Validation Training Course Discount*	AOAC PTM Application Fee Discount**	AOAC Consulting Services Discount
\$10,000	✓	20%	10%	\$1,000/year

Benefits offered as discounts off retail price for the current year

**Training discount applicable for a maximum of 2 registrations per organization*

***PTM discounts may be combined with other RI benefits, up to 5 applications*

AP members are at the forefront of establishing the standards used by method developers, and AOAC, so that resulting Performance Tested Methods and *Official Methods of Analysis* are fully validated and meet the analytical needs of the community. These AOAC adopted reference methods will meet the growing, and evolving needs of the water management industry, by providing data to support effective, scientifically justified methods. Join the *Legionella* Working Group AP today – your investment will help ensure the best available science drives public health policy and regulation.

Next Steps

Sign up to join the Advisory Panel or to receive more information:

<https://tinyurl.com/AOACLegionella>



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