



AQUACULTURE

Monitoring microbial water quality in near real-time

For optimal and stable Aquaculture
production environment.

BactiQuant

INTRODUCTION

Aquaculture is a growing industry worldwide, and water quality is one of the critical elements influencing fish performance and health

Monitoring and maintaining optimal water quality conditions are essential for fish growth, waste reduction, and water usage. Nutrient inputs can stimulate microbial growth, leading to poor water quality, which affects fish health and performance.



Modern aquaculture production facilities operate at maximum carrying capacity, and high biological risk factors are involved.

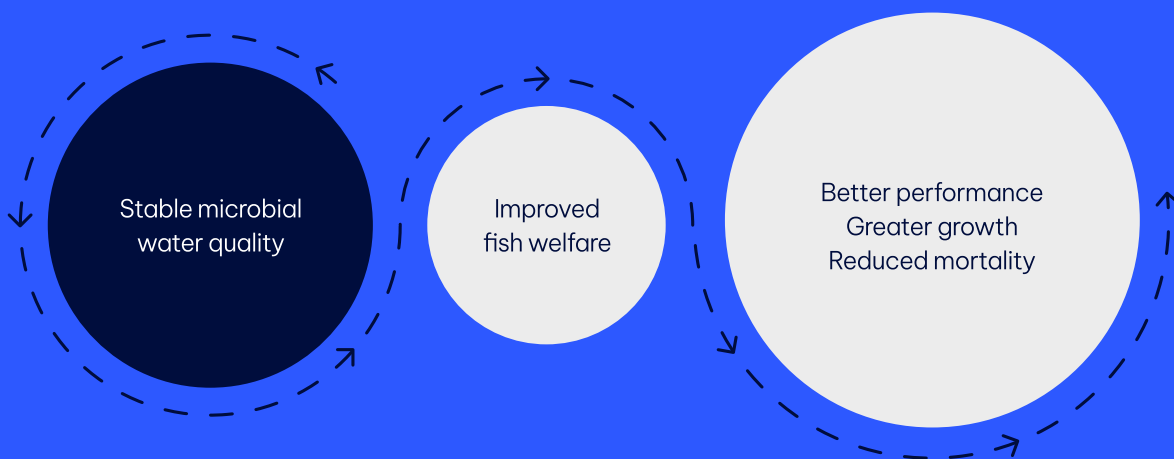
The BactiQuant-water method (BQW) is a quick and effective method for fluorometric detection of bacterial hydrolase enzyme activity, which can detect the total bacterial presence in water samples.

This paper discusses using the BactiQuant method to monitor microbial water quality for optimal and stable aquaculture production environments. Additionally, the paper introduces FungiCount, an innovative product by BactiQuant designed to prevent fungal contamination in RAS aquaculture, hatcheries, and aquatic feed production.

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Importance of water quality monitoring

Water quality monitoring is essential in aquaculture, as poor water quality can affect fish growth and health, leading to reduced yield and profit.



Fishfarmers must monitor water quality parameters and maintain them within ranges that promote maximum growth while reducing waste and water usage. High nutrient inputs can stimulate microbial growth, leading to poor water quality and affecting fish health and performance. As modern aquaculture production facilities operate at maximum carrying capacity, high biological risk factors are involved, and monitoring and prompt action are required to reduce mortality rates, such as electricity.

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BactiQuant-Water method (BQW)



Bacteria is concentrated on a filter



Analysis chemistry is added directly to the filter house



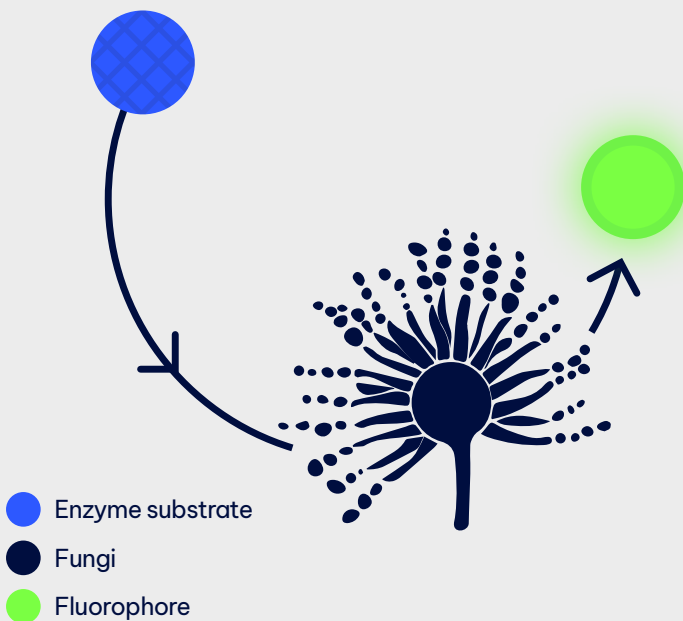
Enzyme activity is measured using a fluorometer

The BactiQuant-water method is a new microbiological water quality parameter created by BactiQuant. The BQW method is a quick field test for fluorometric detection of a specific bacterial hydrolase enzyme activity representing the major bacterial taxonomic groups. The process is easy, rapid, and highly reproducible, with no extraction procedures required.

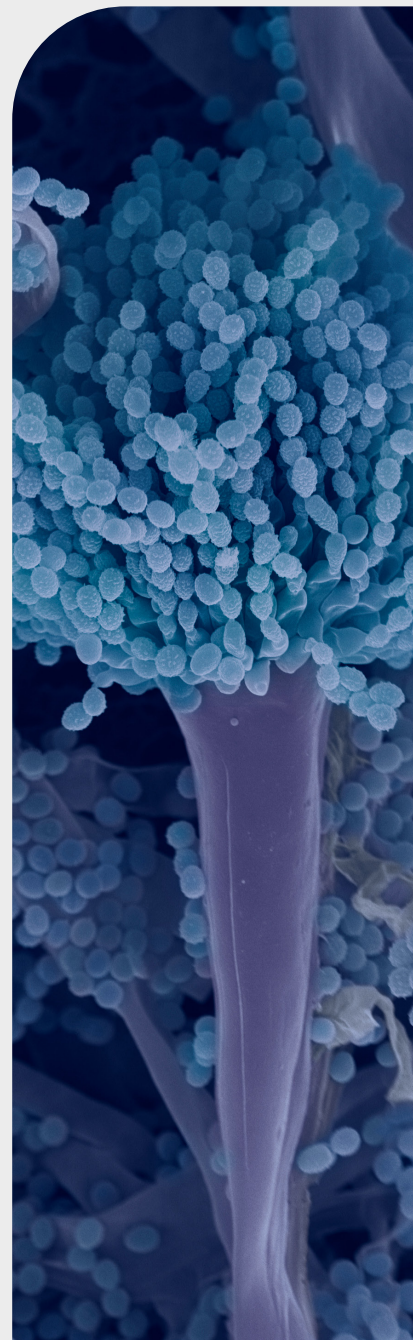
The BactiQuant method is based on a very sensitive fluorescence technology, and the measurement can be performed on the spot, even under rugged conditions. The BQW value is a proxy for the total bacterial presence in the analyzed water sample, and the technology can detect particle-associated bacteria, the slough of biofilm.

FUNGICOUNT

A new and innovative product to detect and prevent fungal contamination in RAS aquaculture, hatcheries, and aquatic feed production



The product can detect spores, hyphae, and micro-fragments in the earliest stages of fungal growth, which helps prevent fungal infections from becoming a problem. Fungal infections affect fish welfare and increase hatchery mortality, resulting in significant economic loss and increased production costs. FungiCount detects fungi such as *Saprolegnia*, *Aspergillus*, and *Penicillium*, which are opportunistic and can exploit flaws in fish environments.



CONCLUSION

The BactiQuant-water method is a fast, easy, and cost-effective tool that enables the timely detection of microbial water quality indicators in aquaculture systems, contributing to ensuring optimal and stable production environments.

The introduction of FungiCount by BactiQuant has provided a new solution to prevent and detect fungal contamination, a significant economic and welfare problem in the aquaculture industry. Monitoring water quality is no longer a luxury but is necessary to maintain optimal fish growth, welfare, and economic profit.



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