

Heat Waves Are Here. Is Your Fish Ready?



QRILL AQUA TO SUPPORT FISH RESILIENCE

Becoming a real challenge for aquaculture

Across Europe, heat waves are no longer just climate headlines — they are becoming a real production challenge for aquaculture. During the recent heatwave in France and nearby regions, rivers and fish farms showed the same warning signs: warmer water, lower oxygen, stressed fish, and in some cases, major losses. In Centre-Alsace, trout rivers were already under pressure from low water levels and rising temperatures. In Belgium, fish farmers reported heavy losses after trout could not tolerate the warmer water. In Luxembourg, a trout farm faced the combined challenge of heat and reduced oxygen, directly threatening fragile aquatic life.

For farmers, this is not a distant future scenario. It is happening now, during the summer months, when fish are already under pressure. As water warms, oxygen availability drops while the fish's metabolic demand rises. This can lead to lower feed intake, slower growth, reduced robustness, and higher sensitivity to handling, crowding, low oxygen, or disease pressure.



Rising water
temperature



Falling oxygen
levels



Lower feed
intake



Slower growth



Reduced
robustness



High sensitivity
to stress

Heat stress can build gradually through the summer, making it easy to underestimate until performance has already declined. Farmers cannot control the weather, but they can take practical steps to help fish cope better with warm-water conditions. Nutrition is one of those tools.

Functional Nutrition: Preparing Fish for Summer Stress

When temperatures rise, fish use more energy to maintain normal physiological function. At the same time, oxidative stress can increase, immune function may be challenged, and tolerance to additional stressors can decrease. Functional nutrition helps support these biological systems before they become limiting.

Rather than focusing only on growth, functional nutrition also supports resilience. Nutrients linked to antioxidant defenses, membrane integrity, immune function, energy metabolism, and gut health become especially relevant during warm periods.

These strategies are most useful when applied before the warmest part of the season, helping fish prepare for prolonged exposure instead of reacting after performance has dropped.

Where QRILL Aqua Fits

QRILL Aqua contains phospholipid-bound EPA and DHA, astaxanthin, vitamin E, selenium, choline, and other naturally occurring bioactive compounds. These nutrients are linked to membrane stability, antioxidant protection, and immune resilience — systems that can be challenged during heat stress.

The idea is simple: warmer water and lower oxygen increase physiological pressure on fish. Supporting antioxidant capacity, cellular integrity, and energy metabolism may help fish cope better when conditions become demanding.

QRILL Aqua does not replace good farm management. Oxygen control, water quality, stocking density, and careful handling remain essential. But as part of a broader summer feeding strategy, functional nutrition can help support fish resilience during stressful periods.

Krill includes nutrients that help tackle heat stress



Backed by Science

Evidence from three rainbow trout studies in Turkey, France, and India shows how QRILL Aqua performed when fish were exposed to heat stress, low oxygen, and suboptimal temperature conditions.

STUDIES	RESULTS
TURKEY  Heat stress	In Turkey, trout were exposed to a high-temperature challenge of up to 23°C. Fish fed diets with QRILL Aqua maintained feed intake and showed better growth during the challenge, with the strongest responses at 5–7.5% inclusion. Survival was also improved compared with the control diet. Proteomics results pointed to stronger activation of pathways linked to oxygen transport, immune response, energy metabolism, and cellular resilience, suggesting a better physiological response to elevated temperature.
FRANCE  Low Oxygen	In France, a low-oxygen challenge at INRAE showed that trout fed QRILL Aqua had better growth, lower cortisol levels, and improved fillet pigmentation after hypoxia exposure, with the strongest effect at 7.5% inclusion. Proteomics analysis also indicated enhanced mitochondrial function, suggesting that fish were better able to maintain energy production under low-oxygen conditions.
INDIA  Suboptimal temperature	In India, rainbow trout reared at suboptimal temperature (18°C) showed better growth with QRILL Aqua and improved ability to cope with thermal stress, measured as critical thermal tolerance. Positive responses were observed from 2.5% to 10% inclusion compared with the control group.

Overall, the studies point in the same direction: QRILL Aqua can help support feed intake, growth, survival, and stress resilience when fish are exposed to challenging environmental conditions. Across the studies, 5–7.5% inclusion appeared to be the most consistent range for supporting performance and robustness.

Take-Home Message

Heat waves are becoming a bigger challenge for aquaculture across Southern Europe. Farmers cannot control the weather, but they can prepare fish better for the physiological pressure created by warmer water and lower oxygen. Functional nutrition is one practical part of that strategy, and rainbow trout studies suggest that QRILL Aqua can help support robustness during heat- and oxygen-related stress.

In a warming world, feed needs to do more than support growth — it should also help fish stay robust.

QRILL Aqua can be part of a proactive nutrition strategy to support fish resilience when summer conditions become more challenging.

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