## **AquaStar<sup>®</sup>GH**

Micro additions, macro benefits!





Multi-genera probiotic to improve disease resistance and survival, throughout all production stages

When aquatic animals hatch, their immune and digestive systems are underdeveloped and relatively sterile, increasing their susceptibility to opportunistic pathogens. Disease remains a continuous threat throughout the production cycle.

AquaStar®GH probiotics colonize the gut from first feeding, priming the animal for its production life. During nursery and growout phases, AquaStar®GH can be applied via the feed, stabilizing the gut microbiota from hatch to harvest, increasing survival and productivity.

#### Advantages of using multi-genera probiotic:

- The intestinal environment is complex, one bacterial type cannot do everything
- Specialized bacteria for specific roles in the gut
- Synergistic and complementary benefits between bacterial types
- Consistent results, across multiple cycles and aquatic species

#### Main benefits:

- Improves survival
- Improves disease resistance
- Supports optimal gut health
- Reduces pathogen load
- Drives sustainable aquaculture production



### dsm-firmenich

# **AquaStar®GH**

### Micro additions, macro benefits!

#### Mode of action:

- Establishes and maintains a balanced gut microbiota from hatchery until harvest
- Rapidly re-establishes and balances gut microbiota after antibiotic treatment or stress events (e.g. handling, diet changes)
- Pathogen control through competitive exclusion, direct inhibition and quorum quenching mechanisms
- Immune modulation
- Improves gut morphology

#### **Application:**

AquaStar<sup>®</sup>GH is suitable for shrimp and fish

AquaStar®GH should be applied in all production phases - hatchery, nursery and growout

Application via water (Hatchery): Dissolve thoroughly in un-chlorinated water (minimum 1:20 ratio)

Ideally leave for 20 min to ,activate' and apply in the tank water or with live feed

Application via feed (Growout): At the farm level, top dress onto feed using standard mixer and a suitable carrier. For feed mill application, AquaStar<sup>®</sup>GH can be applied via post pellet liquid application (PPLA). Consult your local dsm-firmenich representative for further guidance

Note, during nursery phase AquaStar®GH can be applied via the water and/or feed

#### Dosage:

Hatchery (via the water): 2 - 5 g/1000 L or 100 000 larvae at least once a day over the larval rearing period Growout (via the feed): 1 - 2 g/kg

#### **Composition:**

Blend of probiotic bacteria (*Bacillus sp., Pediococcus sp., Enterococcus sp., lactobacillus sp,*) and organic carrier.

#### Number of bacteria:

min. 3x 10<sup>12</sup> CFU/kg product.