



AQUAGEN

Powdered Feed Additive

A New Generation Immuno Stimulant Specially for Aquaculture

A naturally occurring, Yeast Fermentation feed additive that targets the immune system to improve overall health, reproductive performance, and the protective effect of vaccinations in aqua culture.

Biologically active multicomponent complex of the metabolites of Nucleotide Metabolism (NMB Complex)

INTRODUCTION

Better health and performance of aquaculture contributes to greater profitability in production business. Thus, improving the function of immune system must recognize and destroy foreign substances efficiently to enable other organ systems in function properly and resist stress and disease. As disadvantages of continuous Antibiotic medication reveal themselves attention is turning toward naturally occurring substances that impact Aqua Culture immune systems and the environment in a positive way.

A unique, naturally occurring product targeting the immune system is now available after Trails. This powdered feed additive called AQUAGEN is a yeast fermentation product proven to enhance the overall health of aquaculture.

AQUAGEN is naturally occurring feed ingredient made of Organic acids and bases, ribonucleic acid and derivatives, metabolites, vitamins and Yeast. This biologically active feed Supplement improves overall health by boosting the immune system response; reproductive performance, and protective effect of vaccinations. It can be added to feed for all classes of aqua culture to conveniently enhance the nutritive value of the feed.

AQUAGEN impacts the immune system by enhancing the digestion and absorption of nutrients in the intestinal tract. It also restricts growth of harmful parasites, bacteria and viruses in the gut. **AQUAGEN** promotes faster detoxification of the intestinal tract and liver due to its modulating effect on certain cells. **AQUAGEN** has also been proven to alter metabolic activity of liver and glandular cells. In addition, **AQUAGEN** intensifies the effect of vaccinations by causing antibody titers to increase more rapidly and reach higher levels for longer periods of time.

AQUAGEN leaves no residues and it degrades naturally in the environment.

AQUAGEN characteristic stability enables it to be stored for long periods of time and withstand pelleting and storage.

AQUAGEN

GENERAL INFORMATION

1. Definition

AQUAGEN is a naturally occurring product composed of a biologically active, multicomponent complex of the metabolites of nucleotide metabolism (NMB Complex), vitamins and yeast. The main active components are ribonucleic acid(RNA) and nucleotide, metabolites (naturally occurring pyrimidines, metabolites or Pyrimidine and Purine). These are supplemented by metabolites or the intermediary metabolism (naturally occurring organic acid or citric acid cycle and aspartic acid cycle) and feed grade thermolysed brewer's yeast (*Sacchromyces Cervisiae* type B.F.T., EIO).

AQUAGEN's active components serve these functions in the body.

- RNA : Immune system activator
- Nucleotides : Responsible for the multiplication of cells
(Cells of important system and organs have rapid cell multiplication)
- Organic Acids : Stabilize intestinal flora and improve digestion.

2. CHARACTERISTICS

a) Physical

AQUAGEN is tan free flowing powder with a yeast odour.

b) Nutritive

The following is the nutritional analysis of **AQUAGEN**

TYPICAL NUTRITION VALUES OF AQUAGEN		
Dry Matter	Minimum	92.20%
Moisture	Maximum	7.80%
Crude Ash	Maximum	7.16%
Crude Protein	Minimum	58.35%
Crude Fat	Minimum	2.71%
Crude Fiber	Maximum	2.06%

3. FUNCTIONAL PROPERTIES

AQUAGEN is a product composed of naturally occurring specific cell metabolites. The specific metabolites optimize the cell metabolism of gastrointestinal cells, liver cells, glandular cells, intestinal flora and immune competent cells in aqua culture. These improve the performance of the aqua culture by improving the health condition, feed conversion, protective effect or vaccinations, reproduction performance and liver metabolism.

The metabolites in **AQUAGEN** modulate the metabolism of cells in a nutritional way :

Intestinal Flora cells : Improve Digestion

Gastrointestinal Cells : Fasten detoxification and lesser the effects of Toxins

Immunocompetene Cells : Stimulate resistance to stress and disease

Liver Cells : Alter synthesis of Proteins and fats

Glandular Cells : Enhance Fertility

INTESTINAL FLORA is altered to improve digestion. **AQUAGEN** stimulates the production of lactobacilli while inhibiting the production of coliform bacteria. A higher lactobacilli count in the intestinal tract promotes better feed conversion. Thus, a greater supply of nutrients is absorbed by the aqua culture and more efficient use of energy occurs, promoting higher daily weight gain.

GASTROINTESTINAL CELLS are modified so that they speed detoxification in the gastrointestinal mucosa and liver. Cellular structure of the intestine is adjusted to absorb more digested nutrients and fewer mycotoxins. With fewer harmful organisms taken up, existing toxins are excreted more quickly by the liver. The metabolic change in these cells caused by **AQUAGEN** also enhances daily weight gain in aquaculture due to better absorption of nutrients.

IMMUNOCOMPETENT CELLS are key to developing and maintaining resistance to disease and infection. **AQUAGEN** works to strengthen the immune response system by way of the gastro intestinal tract. This is where **AQUAGEN** begins its journey to modulate the immune Competent cells which destroy foreign substances in the body by first recognizing and then inactivating, degrading and or killing them.

AQUAGEN stimulates specific cell groups to positively influence immunity:

Bone marrow cell counts rise, especially white blood cells. This Jump-starts the immune response.

The number of Macrophages and granulocytes in the tissue and blood are increased. These cells are the first to engulf and destroy antigens and pass them on to lymphocytes.

More specialized cells (Lymphocytes), are produced by the activity of the macrophages and granulocytes. They attack specific antigens to render them inactive as they are received from the macrophages and granulocytes.

Some Lymphocytes, called B-Lymphocytes are transformed to Plasma cells that secrete antibodies. The antibodies then bind with antigens to inactivate them. Some Lymphocytes remain in the body as “memory” cells which can quickly dispose of an antigen if it reappears.

When aquaculture’s immune system is functioning properly, it can convert feed efficiently for more rapid weight gains, and its young enjoy increased immunity.

Liver Cells synthesize fats and proteins. **AQUAGEN** alters the metabolic cycles of protein and fat synthesis so that more protein and less fat is produces.

4.PRODUCT LABEL INFORMATION

AQUAGEN Feedgrade additive - For aquaculture

Sacchromyces Cervisiae Yeast extract (type B.F.T., EIO)

Manufactured By

M/s. INTVET PRODUCTS MFG CO (P) LTD.,

171-G,Rajapuram,

Nedunchalai Nagar

Salem - 636005

Thermolysed Yeast extract product

Guaranteed Analysis

Dry Matter	Minimum	92.20%
Moisture	Maximum	7.80%
Crude Ash	Maximum	7.16%
Crude Protein	Minimum	58.35%
Crude Fat	Minimum	2.71%
Crude Fiber	Maximum	2.06%

5. PACKAGING

AQUAGEN is packaged in 20 Kg polyethylene line Jute Bags, closed with machine stitching at the top.

6. STORAGE

AQUAGEN should be stored under cool, dry conditions. Shelf life tests carried out under cool, dry conditions show efficacy is unchanged after one year. Also, products pelleted at 176 degree to 194 degree F (80-90 degree C) and extruded, retained efficacy after one year. The active substances in the products are stable when subjected to a high temperature of 248 degree F (120 degree C) for a period of Five minutes. A loss of stability occurs only at 302 degree F (150 degree C)

7. APPLICATIONS AND CONDITIONS FOR USE:

AQUAGEN has been used with all types of aquaculture feed. It is compatible with antibiotic therapy and vaccine programs since the product does not contain live Yeast cells. Persons with Yeast allergies should wear dust masks and gloves when handling the product. Also, when the product is handled in bulk, a dust mask and gloves is recommended. There are, however, no other special precautions required.

AQUAGEN is a highly concentrated Product that can be mixed with all finished feeds as needed, or it can be mixed and stored in a cool, dry environment for up to one year. It is not water soluble and should not be mixed with drinking water or water for a premix for feed, **AQUAGEN** should be used in accordance with Product label instruction.

DOSAGE :

Mix 250 gms of **AQUAGEN** with 1 tonne of Shrimp /Prawn / Fish feed

Features / Benefits Summary of AQUAGEN

<u>FEATURES</u>	<u>BENEFITS</u>
1. Stimulate intestinal flora cells to produce more Lactobacilli and fewer coliform bacteria	1. Better digestion of feed which leads to more efficient use of energy, better health and faster weight gain
2. Increases immunocompetent cell populations	2. Improved immune response system for greater resistance to stress, disease and infection for faster weight gain and overall better health
3. Increases antibody titers	3. Enhanced protective effect of vaccines for better health
4. Modulates liver cells	4. More protein and less fat is produced; also results in faster detoxification of the gut.
5. Proven safe and effective for all classes of aqua culture	5. Efficient and more economical
6. No residue in aqua culture environment	6. No withdrawal period required
7. Naturally occurring product	7. Degrades easily in the environment and safe for aquaculture handlers; supply always available
8. Concentrated form	8. Convenient handling
9. Stable	9. Withstands pelleting high temperatures, has long shelf life
10. Compatible with other feed components and antibiotic therapy	10. Convenient; assists therapy
11. Strict quality control during manufacturing	11. Consistent quality and performance

