

Bonza® Fish

Chelated Mineral Farmed Fish Feed Supplement
Cold Water Fish, Warm Water Fish, Marine Fish
and Sturgeon Specific



Overview of Aquaculture Industry

According to the latest statistics of FAO, global fish production peaked at about 213.6 million metric tons in 2019, 56% of which (120 million metric tons worth \$ 274 billion) was produced by aquaculture. China, Indonesia, India and Peru are respectively the first four countries in Aquaculture production in the world, while EU, the USA and Japan have the largest consumer market with consuming 64% of the total fish production. The average fish consumption is 20.5kg per capita worldwide. Iran is the largest fish producer in the Middle East with 1.2 metric tons per year, approximately 42% of which is by aquaculture and the other by fisheries. The average fish consumption in Iran is about 13.3kg per capita.

Farmed Fish Feed Species Supplements & Additives

Feed supplements and additives are an inseparable part of aquaculture as they improve quality and productivity in this industry. Although micronutrients account for less than 0.01% of fish body mass, they are vital for the normal function of biological systems. Mineral (inorganic) salts are commonly used to meet the needs of fish for micronutrients, yet owing to the low absorption rate of these compounds, often high doses should be added to diets, because they are mostly excreted directly into the environment. Organic sources of mineral elements, such as chelates (mostly having amino acid-based structures), usually demonstrate higher rate of absorption than inorganic structures; however, consuming these types of supplements industrially is not generally cost-effective.

Bonzafish Supplement, Farmed Fish Specific

Relying on the results of various research proven, scientific studies and experiments and also in view of the market need, Sodour Ahrar Shargh Knowledge-based Company has manufactured a unique product named “Bonzafish” supplement as a forerunner of Bonza aquaculture supplements. The technology used in the production of this supplement is patented in Iran Patent Center & the United States Patent and Trademark Office (USPTO) and is filed in the European Patent Office (EPO) as well. This supplement contains 8 micronutrients of copper, zinc, selenium, iron, chromium, cobalt, manganese and iodine in chelated form and guaranteed doses. Bonzafish supplement is available in two forms of powder (solid) & liquid. Some of the advantages of Bonzafish supplement are:

- Efficiency improvement
- Fertility improvement of broodfish
- Boosting immune system function & health
- Reduction in rearing period and maintenance costs
- Growth rate & feed conversion ratio (FCR) improvement
- Mortality decrease at all growth stages, especially larva stage
- Reduced need for medications & antibiotics, leading to reduction in treatment costs
- Feed efficiency improvement (reduction in waste & minerals excretion and pool contamination)
- Improvement in anti-oxidative property & increase in resistance to physical (water temperature), chemical (chemical contamination of water), biological (prevalence of pathogenic microorganisms and external & internal parasites) stresses and farming mismanagement (number of fish/m³ & their transfer, fish manipulation and therapeutic procedures)

Therefore, using this supplement is incredibly cost-effective, with profits several times more than the cost of purchasing Bonzafish.

Bonzafish Composition (Powder - Liquid)

Zinc	Manganese	Copper	Selenium
24000	12000	1800	180
Iron	Iodine	Cobalt	Chromium
36000	1200	420	600

ppm in chelated form



Direction for Use

- ◆ Bonzafish supplement, containing 8 important micronutrients in chelated form, is added to feed as an additive (on top); then, there is no need to change the diet, including any increase, decrease or alteration in feed ingredients or other routine mineral-based supplements.
- ◆ Powder form of Bonzafish supplement can be mixed with feed. This supplement is resistant to temperature in pellet making or extrusion processes.
- ◆ It is essential to follow the consumption dose precisely to obtain desired results.

Dosage

Powder Form

Factories: Mix 500g of powder Bonzafish supplement with one metric ton of feed (in pellet, extrude or granule form).

Farms: Dissolve 10g of powder Bonzafish supplement in at least 100ml of water and then mix / spray it with / on 10kg of feed. When the feed becomes dry, spray fish oil or a type of vegetable oil (soya, etc.) on the feed to make sure the supplement sticks to the feed.

Liquid Form

Farms: Mix 10cc of liquid Bonzafish supplement with at least 100ml of water and then spray / mix it on / with 10kg of feed. When the feed becomes dry, spray fish oil or a type of vegetable oil (soya, etc.) on the feed to make sure the supplement sticks to the feed.

Package & Storage

- ✓ Bonzafish supplement is available in powder (1 & 20kg bags) and liquid (1L bottles) forms. The expiration date is 2 years after production if the container remains closed, and 12 months after it is opened.
- ✓ Bonzafish supplement must be kept out of reach of children, away from direct sunlight, in a dry place, at room temperature and in the original container. Protect it from freezing.

Effect of Different Doses of Bonzafish Supplement on the Growth & Survival Parameters of Rainbow Trouts

Parameter	Control	50g	500g	1000g	1500g	Standard Error of the Means	P-Value
Weight (g) 4 W	17.91 ^b	18.33 ^b	19.20 ^{ab}	20.28 ^a	20.33 ^a	2.05	<0.004
FCR 4 W	0.65 ^a	0.62 ^a	0.57 ^b	0.52 ^c	0.50 ^c	0.03	<0.0021
Weight (g) 8 W	32.88 ^b	32.85 ^b	33.25 ^b	56.84 ^a	57.79 ^a	9.14	<0.020
FCR 8 W	1.61 ^a	1.60 ^a	1.58 ^b	1.35 ^b	1.33 ^b	0.28	<0.054
Weight (g) 16 W	140.71 ^c	141.08 ^c	160.66 ^b	192.81 ^a	193.57 ^a	20.6	0.002
FCR 16 W	1.42 ^a	1.40 ^a	1.17 ^b	0.96 ^c	0.91 ^c	0.53	<0.001
Weight (g) 20 W	178.33 ^c	179.79 ^c	193.47 ^b	243.92 ^a	244.38 ^a	32.7	<0.003
FCR 20 W	1.29 ^a	1.24 ^a	1.06 ^b	0.87 ^c	0.83 ^c	0.46	0.002
Survival Rate	96.36 ^c	96.25 ^c	97.73 ^b	98.84 ^{ab}	99.91 ^a	2.15	<0.016

abc: The means marked by different letters in each row are significantly different (p<0.05).



1 Report of Mazandaran Fisheries Office Concerning the Results of an Experiment on Commercial Rainbow Trouts

Adding Bonzafish supplement improved FCR & weight gain by at least %15 and led to significant reduction in mortality rate and increase in Immunoglobulin M (IgM) level, growth gene expression and serum antioxidants of rainbow trouts. In this experiment, Bonzafish chelated mineral supplement was first mixed with vegetable oil and then the mixture of Bonzafish & oil was added to feed.

2 Report of Fisheries Group of Isfahan University of Technology

An experiment that was conducted on the best farm of the year in Fereydunshar county (an affiliate of Abzinegin Shayan Company) and under the supervision of the Fisheries Group of Isfahan University of Technology showed that adding Bonzafish chelated mineral supplement to the diet of female broodfish rainbow trouts increased survival rate by 18% from fertilization to swim-up and the number of produced larvae by each broodfish by 40%, improved the hematological & anti-oxidative defense indices of broodfish and increased the antioxidative defense indices of newly hatched larvae separated from broodfish.

Moreover, adding Bonzafish chelated mineral supplement to the diet of baby Koi fish led to 14% increase in weight gain, improvement in feed conversion ratio and increase in the hematological & antioxidative defense indices. In this experiment, Bonzafish chelated mineral supplement was added to the diet at feed (in the form of pellet) production stage.

Precaution

Do not use other organic micronutrient supplements (such as amino acid, peptide, hydroxy analogue, polysaccharide or yeast-based chelates) along with Bonzafish supplement in diets.

