



# CATALOG

AQUACULTURE ENGLISH. V2.1

- ADVANCED BROAD SPECTRUM DETOXIFIER
- PREMIUM IMMUNE ACTIVATORS
- ANTI-MICROBIAL FEED ENHANCER
- SPECIAL FEED

Made in Germany

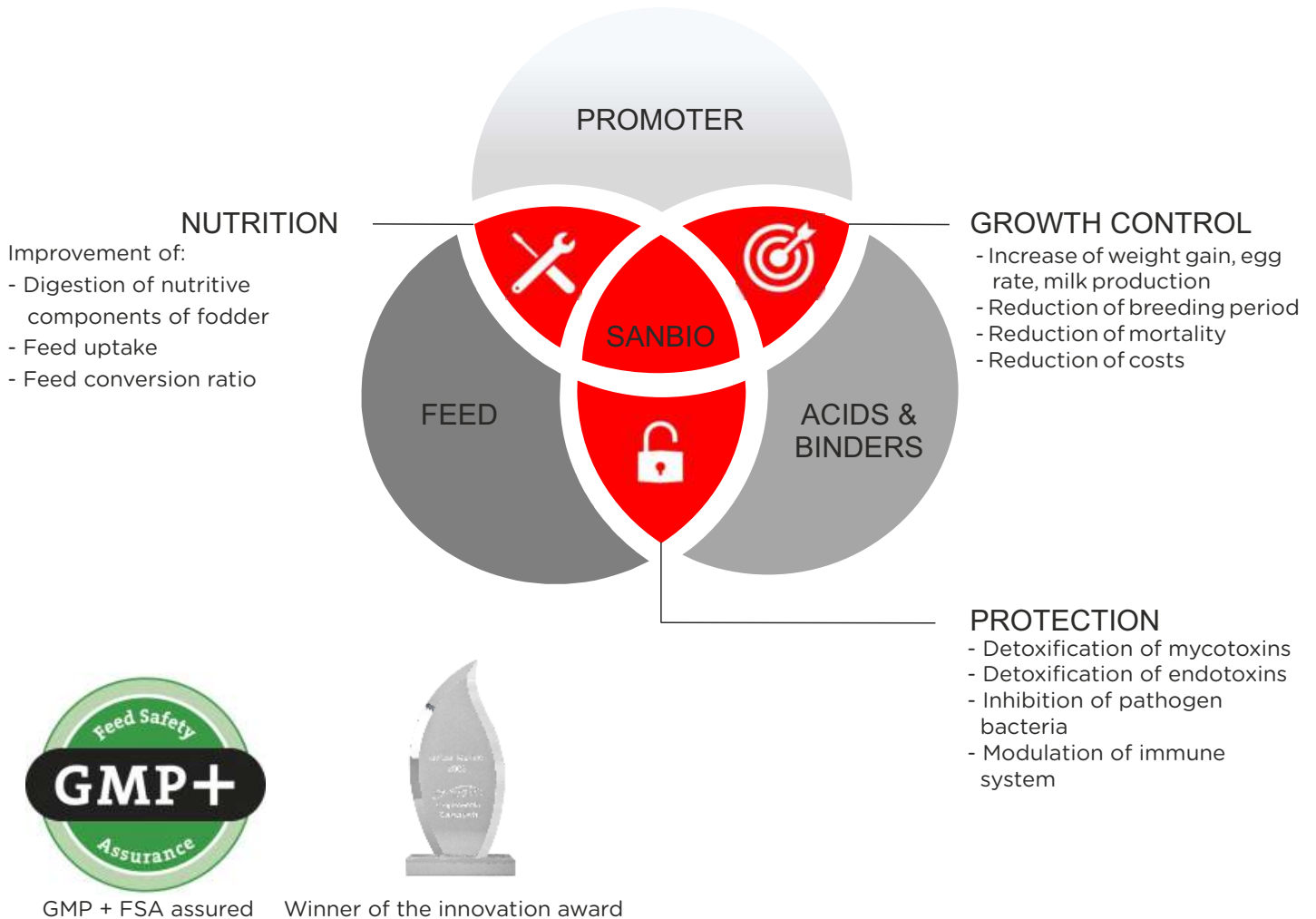


<b>CONTENT</b>	<b>PAGE</b>
Introduction	3
Portfolio	6
Sanbio SANA	7
Sanbio SALVUS	11
Sanbio MARE	15
Legal limitations and aspects	27
Contact	28

### 3-in-1. THE NEW APPROACH OF FARMING

SANBIO® is a line of new generation of additives and functional feed, developed and manufactured by SANBOS GmbH, Made in Germany.

The advanced broad spectrum detoxifier, premium immune activators, anti-microbial feed enhancer and special functional feed are dedicated for bio-protection, stress control and increase of productivity on all animals in aquaculture. The products combine the core functions into one product: protection and performance.

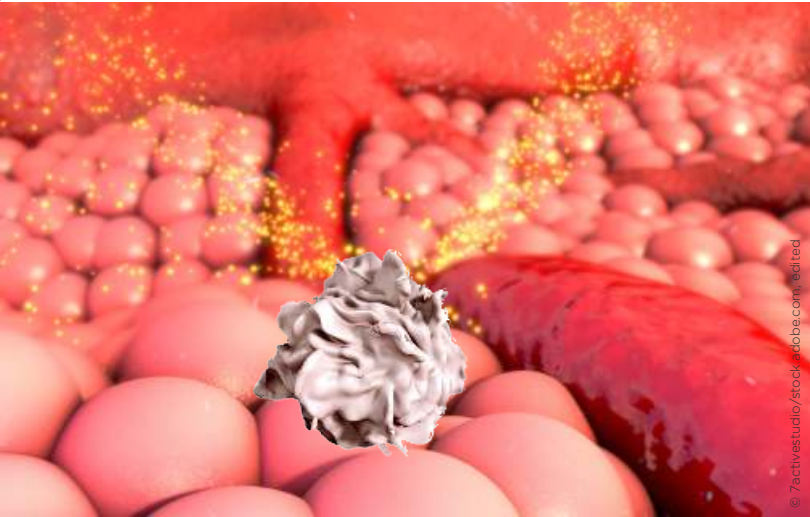


**“ We help you to  
make more profit  
and to save money. “**

Jörg MEYER, Founder and CEO







## SMART AND UNIQUE TECHNOLOGY

The specific formulated material is activated in an electrical process of supercharging and polarization. The mechanism of electrical stimulation of cells makes the difference of SANBIO products versus conventional products acting on chemical mechanisms only.

Transported into digestive tract, the product acts on cellular level and triggering the defensive and vegetative processes. The electrical gut stimulation supports the modulation of promoting bacterial flora (e.g. Lactobacilli, Bifidobacteria).

## FEED SAFETY AND ANIMAL HEALTH

Detoxification and inhibition of pathogenic bacteria in feed and water and along the animal gastro-intestinal tract have anti-inflammatory effects, promote the healing and growth of intestinal villi and ensure hepato- and immune protection.



## BIOPROTECTION AND ANIMAL PERFORMANCE

The electrical gut stimulation supports the modulation of promoting bacterial flora (e.g. Lactobacilli, Bifidobacteria).

The active secretion of digestive juices and enzymes as well as improved oxygen utilization in the blood lead to improved metabolism and better nutrient uptake.

## GROWTH CONTROL

The enhanced performance is reflected in improved key indicators (weight gain, feed conversion ratio, mortality, quality) and lower costs (feed, vet).







## WE HELP YOU

... to tackle your problems for the most profitable and sustainable way in aquafarming on top quality level.

Get technical information and advise on the right product, right application rate and right timing of application .

## WHERE TO BUY SANBIO PRODUCTS?

Please contact us for more information about your nearest local distributor.



## SATISFIED CUSTOMERS

*"Thank you so much for the that excellent product. It did help me to stopping gut inflammation caused by toxins and pathogens in the feedstuffs. I took back the health control and achieved good breeding results. I appreciate so much that I have always received such good service from you."* Ron

## BECOME A PARTNER

... and participate at our extended program for distributors and profit from unique products and attractive pricing.



**PORTFOLIO - PRODUCTS FOR AQUACULTURE**

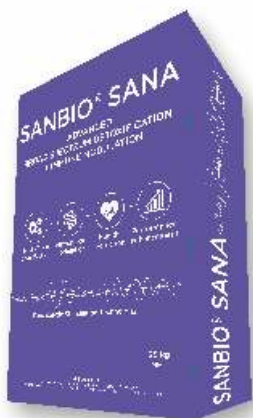


		SANA	SALVUS	MARE
Species	Fish, onshore	+	+	+
	Fish, offshore	+	+	+
	Shrimp	+	+	+
Category	Function	Feed additive	Feed additive	Ready-to-use feed
		Broad spectrum detoxifier- Immunity modulator	Anti-microbial Feed enhancer- Immunity activator	Special functional feed
Health	Inhibition of pathogens	-	+	+
	Detoxification of mycotoxins	+	-	+
	Detoxification of endotoxins	+	-	+
	Modulation of gut microbiota	+	+	+
	Biostimulation of digestion	+	+	+
	Modulation of immune system	+	+	+
Performance	Nutrition	-	-	+
	Weight gain	+	+	+
	Feed conversion rate	+	+	+
	Survival rate	+	+	+
Composition	Minerals	+	-	+
	Organic acids	-	+	+
	Nutritive components	-	-	+
Properties	Appearance	Micronized powder	Encapsulated powder	Pellet
	Available package	20 / 500 kg bag	25 kg bucket	25 kg bag
	Shelf time (months)	36	18	24
	Approved for organic farming	+	-	-



# SANBIO® SANA

ADVANCED BROAD SPECTRUM DETOX AND IMMUNE MODULATION  
FOR ALL ANIMAL SPECIES IN AQUACULTURE PRODUCTION



## STRONG DETOX BETTER HEALTH

The advantages of **SANA** are:

- Detoxification of feed and animal body
- Health protection
- Modulation of gut microbiota
- Stimulation of digestion
- Enhancement of breeding performance.

## DESCRIPTION

**SANA** is a micronized natural product for advanced broad spectrum detoxification and immune modulation used for all animal species in livestock production. SANA provides a significant and rapid adsorption of a broad spectrum of mycotoxins in the feed and endotoxins in the gastrointestinal tract. SANA activates the digestion and enhances the productive performance.

## COMPOSITION

Activated<sup>o</sup> natural clay mineral Bentonite-Montmorillonite-Illite (1m558), supercharged micronized material (particle size: 97%  $\leq 5\mu\text{m}$ )

<sup>o</sup> processed by *SANBIO Biocatalytic Stimulation Technology*

## MODE OF ACTION

SANA combines the core functions in one product: **1.ADSORPTION of toxic substances** **2.MODULATION of healthy microbiota** **3. STIMULATION of digestion.** The effectiveness of SANA is based on the synergistic combination of physical and chemical adsorption methods towards toxins and active stimulation of cells in the small intestine (SANBIO Biocatalytic Stimulation Technology). The mechanism of electrical stimulation of cells makes the difference of SANA versus conventional products acting on chemical mechanisms only.

**RAPID ACTION.** The unique composition and advanced processing of SANA ensure instant improvement of health situation.

**ADVANCED PROCESSING.** The minerals are utilized in a special milling and grinding process down to less than 5 micron size. As a result, the micronized very tiny particles have an extremely large reaction surface. Subsequently, the particles in the complex being charged and polarized in a special electrical process. Now, the refined physico-chemical complex has a huge capability to interact with polar and non-polar compounds and body cells.

**DOUBLE-STAGE ADSORPTION.** The combined physical and chemical adsorption method binds a wide spectrum of mycotoxins and endotoxins. The toxins being immobilized and discharged. It acts selectively and independently from pH value throughout the complete gastrointestinal tract.

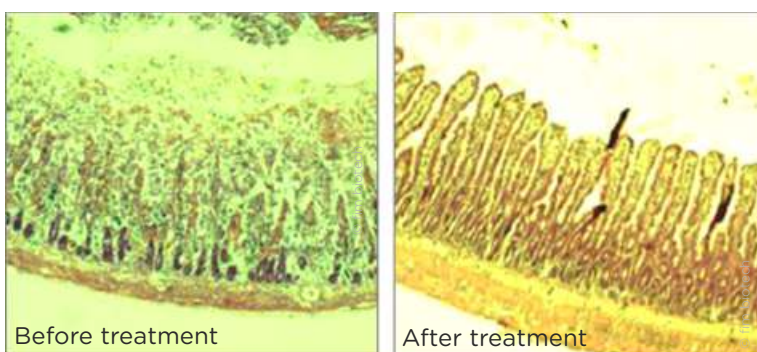
**SELECTIVE AND COMPATIBLE.** SANA does not bind amino acids and fat-soluble vitamins. Water-soluble vitamins are only temporarily bound to a small extent and fast released again. SANA is compatible with the most antibiotics.

**HEALTHY GUT MICROBIOTA.** SANA acts as microhabitat to supply a large surface media for growth of useful microorganisms. The electrical gut stimulation supports the modulation of promoting bacterial flora (e.g. Lactobacilli, Bifidobacteria).

**TOTAL BIOPROTECTION.** SANA has anti-inflammatory effects, promotes the healing and growth of intestinal villi and ensures hepato- and immune protection.

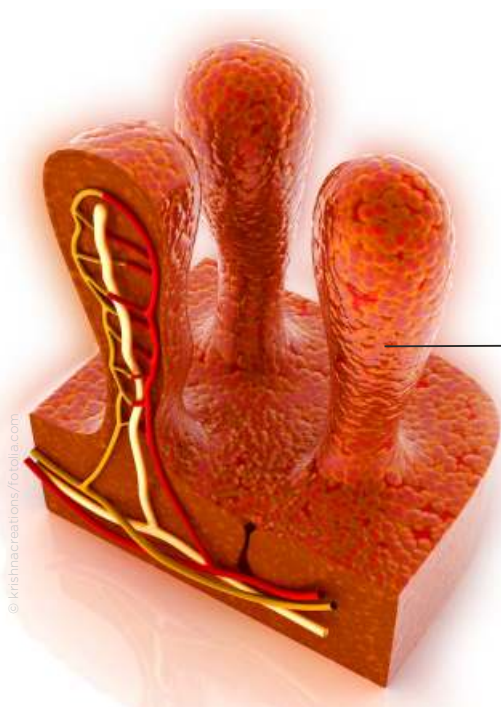
**GROWTH CONTROL.** The active secretion of digestive juices and enzymes lead to improved metabolism and better nutrient uptake.

**FASTER. HEAVIER. BETTER.** The enhanced performance is reflected in improved key indicators (weight gain, feed conversion ratio, mortality, quality) and lower costs (feed, vet).



Representative histological section of a small intestine segments after staining, 50 micron

„Healthy and well developed villi maximise the surface area for nutrient absorption, resulting in increased weight gain.“





DIRECTIONS OF USE

Species	Minimal dosage	Recommended dosage in case of increased toxin concentration	Maximal dosage	Unit
Fish, shrimp	5	10	20	kg/t total

SANA may be used at any time during production, requires no withdrawal period. Ensure a homogeneous mixing of SANA with the feed to achieve best results. Regularly use is recommended, at least use for 14 days. SANA works systemically, preventively and curatively with associated natural mechanisms. SANA is suitable for use in feed pelletizing process (max. process temperature < 105°C).

INDICATIONS FOR USE

- Mycotoxin contaminated feed
  - Abnormal bacterial flora
  - Abnormal loss rate
  - After antibiotica use and vaccination
  - Incidence of endotoxins
- Stress and weak immune system
  - Improvement of hatchability
  - Slow feed intake
  - Improvement of fertility and performance
  - Prophylaxis.

**RESTRICTIONS ON ALL FEEDSTUFFS:** The simultaneous oral use with macrolides shall be avoided. The total amount of bentonite must not exceed the permitted maximum level in complete feeding stuff of 20kg/t of complete feeding stuff.

**APPROVALS:** 100% natural. SANA is approved for organic farming and meets numerous international standards.

**AVAILABLE PACKAGES:** 20kg





# SANBIO<sup>®</sup> SALVUS

ANTI-MICROBIAL FEED ENHANCER AND IMMUNITY ACTIVATOR



## LESS BACTERIA BETTER HEALTH

The advantages of **SALVUS** are:

- Preservation of feed
- Health protection
- Modulation of gut microbiota
- Stimulation of digestion
- Enhancement of breeding performance.



## DESCRIPTION

**SALVUS** is a concentrated solid encapsulated acidifying formulation and immune activator for conservation of feed used in aquaculture. SALVUS provides a significant and rapid inhibition of pathogenic bacteria in the feed and gastrointestinal tract. SALVUS activates the digestion and enhances the productive performance.

## COMPOSITION

Activated<sup>\*)</sup> premixture with zootechnical feed additives containing: Silicone dioxide (E551a), Potassium diformate (970.000 mg/kg), Citric acid (E330).

<sup>\*)</sup> processed by *SANBIO Biocatalytic Stimulation Technology*

## MODE OF ACTION

SALVUS combines the core functions in one product: **1. Inhibition of pathogenic bacteria** **2. Modulation of healthy microbiota** **3. Stimulation of digestion.** The effectiveness of SALVUS is based on the synergistic combination of organic acids and active stimulation of cells in the small intestine (*SANBIO Biocatalytic Stimulation Technology*). The mechanism of **electrical stimulation of cells** makes the difference of SALVUS versus conventional products acting on chemical mechanisms only.

**RAPID ACTION.** The powerful composition of SALVUS ensures instant improvement of hygienic situation.

**STRONG ANTI-MICROBIAL EFFECT.** SALVUS contains selected beneficial organic acids which are highly bacteriostatic and bactericidal. The acidification of the complete gastrointestinal tract limits the proliferation of pathogenic bacteria and inhibiting the development of diseases (colibacillosis, coccidiosis, salmonellosis, gas gangrene).

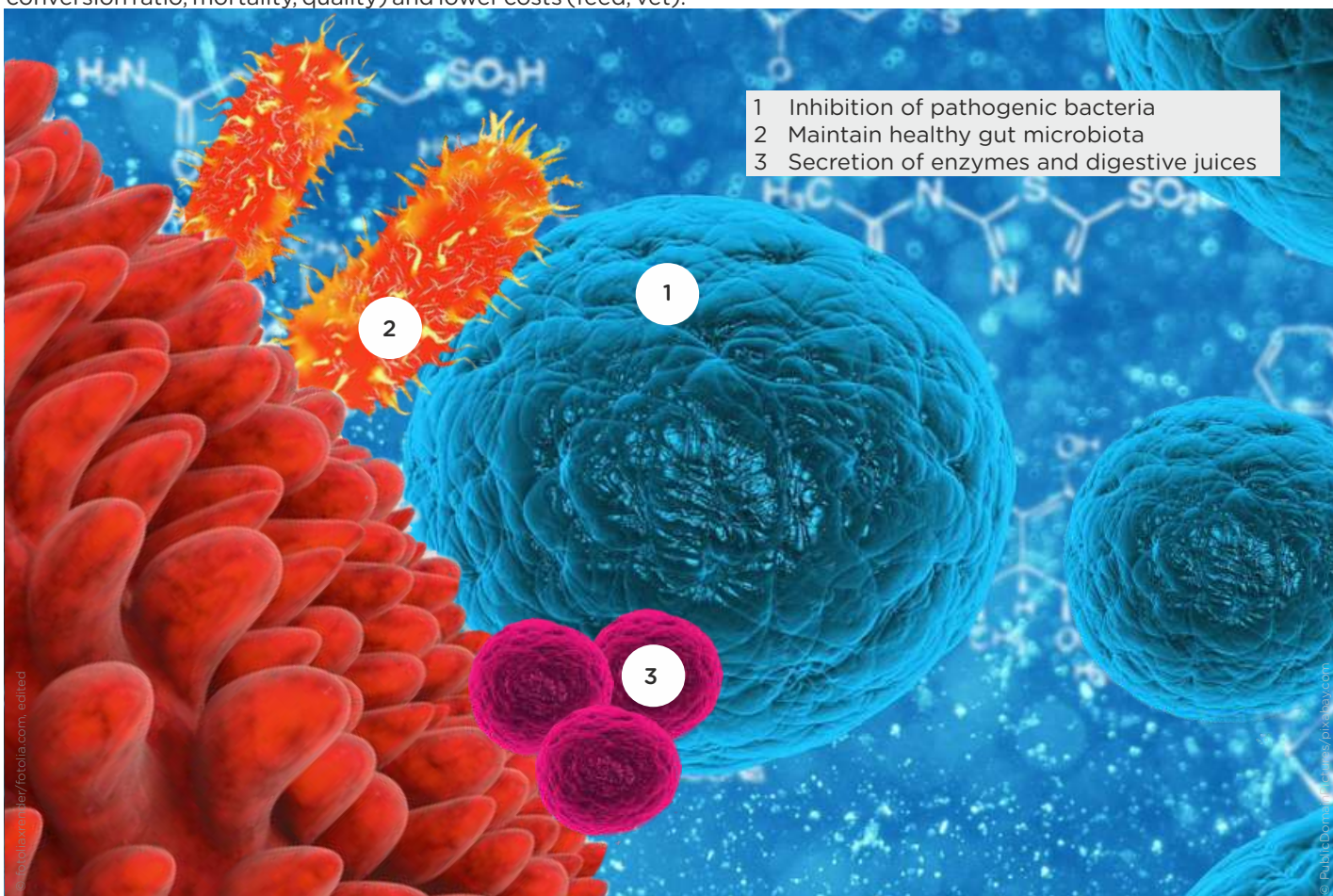
**TOTAL PROTECTION.** SALVUS acts throughout the total length of intestine offering total protection.

**HEALTHY GUT MICROBIOTA.** SALVUS balances the pH value of the gastrointestinal tract and maintains the modulation of healthy bacterial flora (e.g. Lactobacilli, Bifidobacteria).

**GROWTH CONTROL.** The active secretion of digestive juices and enzymes as well as improved oxygen utilization in the blood lead to improved metabolism and better nutrient uptake.

**STRONG AND VITAL.** Citric acid stimulates liver, kidney and pancreas function, and in regular use, also has a toning, antispasmodic and analgesic effect.

**FASTER. HEAVIER. BETTER.** The enhanced performance is reflected in improved key indicators (weight gain, feed conversion ratio, mortality, quality) and lower costs (feed, vet).





## DIRECTIONS OF USE

Application	Single rate
Fish, shrimps	2 - 5 kg per 1000 kg complete feed

SALVUS may be used at any time during production, requires no withdrawal period. Ensure a homogeneous mixing of SALVUS with the feed to achieve best results. Regularly use is recommended.

Remark: The use of anti-microbial products for inhibition of bacterial pathogens can lead to an increased level of endotoxins in the animal body due to normal biological processes. For binding and detoxification of the endotoxins we recommend to apply our complementary product Sanbio SANA to ensure maximal health protection.

## INDICATION FOR USE

- Abnormal bacterial flora
- Abnormal loss rate
- After antibiotica use and vaccination
- Stress
- Improvement of hatchability
- Slow feed intake
- Improvement of fertility and performance
- Prophylaxis.

PROTECT YOUR  
ANIMALS FROM  
DISEASE AND  
INFECTION!



# SANBIO<sup>®</sup> MARE

SPECIAL FUNCTIONAL FEED FOR FISH AND CRUSTACEAE

## COMPLETE PROTECTION PERFORMANCE

The advantages of **MARE** are:

- Advanced broad spectrum detoxification
- Effective anti-microbial effects against gram-negative bacteria and pathogens
- Modulation of gut microbiota
- Stimulation of digestion
- Enhancement of breeding performance.





## DESCRIPTION

**MARE** is a special functional pellet feed for post-brooding/pre-fattening fishes and crustaceans in onshore and offshore aquaculture. MARE combines the optimal nutrition, advanced broad-spectrum detoxification, anti-microbial effects against gram-negative bacteria and pathogens as well as the immune modulation through its special production technology. The balanced energy level and the formulation ensure a rapid and balanced growth.

## COMPOSITION

Mixture of soyeam cake [1], wheat bran [1], corn gluten meal, potatoe starch, soy oil [1], glycerin, activated bentonit-montmorillonite-illite [2], muscovite, glauconite, caolite, chlorite, potassium diformate [3], silicone dioxide [3], citric acid [3], silicon dioxide [3], algae extract, fish meal [4]

[1] According Organic farming standard

[2] SANBIO® SANA, activated<sup>™</sup> feed additive, binders, according EC1831/2003

[3] SANBIO® SALVUS, activated<sup>™</sup> feed additive, preservatives, according EC1831/2003

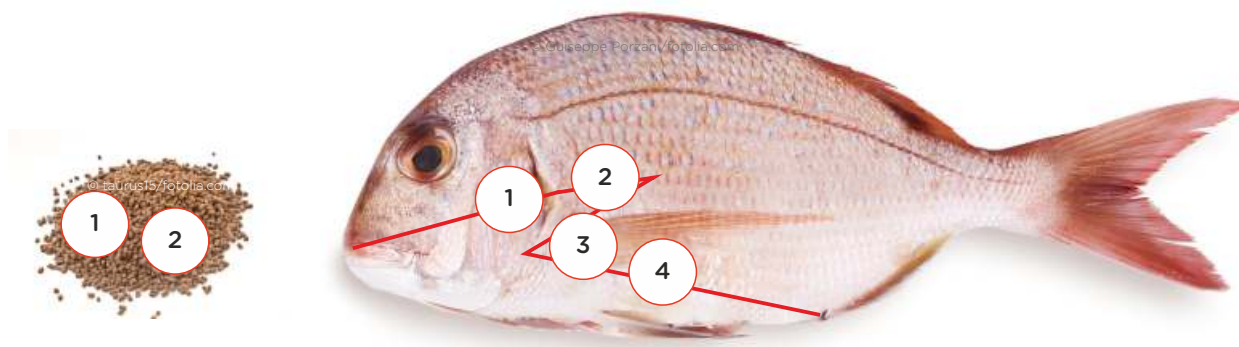
[4] According MSC standard

<sup>™</sup> processed by *SANBIO Biocatalytic Stimulation Technology*

## MODE OF ACTION

MARE combines the core functions in one product:

1. Adsorption of toxic substances
2. Inhibition of pathogenic bacteria
3. Modulation of healthy microbiota
4. Stimulation of digestion.



The effectiveness of MARE is based on the synergistic combination of physical and chemical adsorption methods towards toxins, anti-microbial effects and active stimulation of cells in the small intestine (*SANBIO Biocatalytic Stimulation Technology*). The mechanism of **electrical stimulation of cells** makes the difference of MARE versus conventional products acting on chemical mechanisms only.

**DOUBLE-STAGE ADSORPTION.** The combined physical and chemical adsorption method binds a wide spectrum of mycotoxins and endotoxins. The toxins being immobilized and discharged. It acts selectively and independently from pH value throughout the complete gastrointestinal tract.

**SELECTIVE AND COMPATIBLE.** MARE does not bind amino acids and fat-soluble vitamins. Water-soluble vitamins are only temporarily bound to a small extent and fast released again. MARE is compatible with the most antibiotics.

**HEALTHY GUT MICROBIOTA.** MARE acts as microhabitat to supply a large surface media for growth of useful microorganisms. The electrical gut stimulation supports the modulation of promoting bacterial flora (e.g. Lactobacilli, Bifidobacteria). MARE balances the pH value of the gastrointestinal tract and maintains the modulation of healthy bacterial flora (e.g. Lactobacilli, Bifidobacteria).

**TOTAL BIOPROTECTION.** MARE has anti-inflammatory effects, promotes the healing and growth of intestinal villi and ensures hepato- and immune protection.

**STRONG ANTI-MICROBIAL EFFECT.** MARE contains selected beneficial organic acids which are highly bacteriostatic and bactericidal. The acidification of the complete gastrointestinal tract limits the proliferation of pathogenic bacteria and inhibiting the development of diseases (colibacillosis, coccidiosis, salmonellosis, gas gangrene).

**HIGH RANGE.** MARE acts throughout the total length of intestine offering total protection.

**GROWTH CONTROL.** The active secretion of digestive juices and enzymes as well as improved oxygen utilization in the blood lead to improved metabolism and better nutrient uptake.

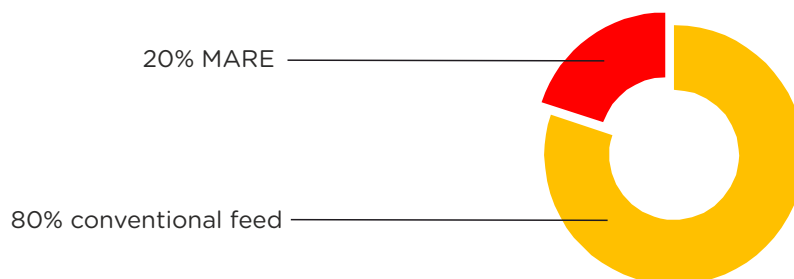
**STRONG AND VITAL.** Citric acid stimulates liver, kidney and pancreas function, and in regular use, also has a toning, antispasmodic and analgesic effect.

**FASTER. HEAVIER. BETTER.** The enhanced performance is reflected in improved key indicators (weight gain, feed conversion ratio, mortality, quality) and lower costs (feed, vet).



## DIRECTIONS OF USE

Application	Rate
Fish, shrimps	20% of conventional feed amount



MARE may be used at any time during production. Regularly use is recommended, at least use during the first phases (3-6mm pellet application time). Replace 20% of conventional feed by MARE. Apply MARE shortly before conventional feed to achieve best results.

## CHEMICAL-NUTRITIONAL VALUES

Granulometry	3 / 6	mm
Dry matter substance	92	%
Crude protein	40	%
Crude fat	10	%
Crude ash	8	%
Crude fibre	4.7	%
Starch	15	%
Phosphorus	1.5	%
Amino acids	5	%
Vitamins	1	%
Bentonite-Montmorillonite-Illite	10	%
Organic acids	2.5	%
Others	2.3	%
Digestible energy	18	MJ



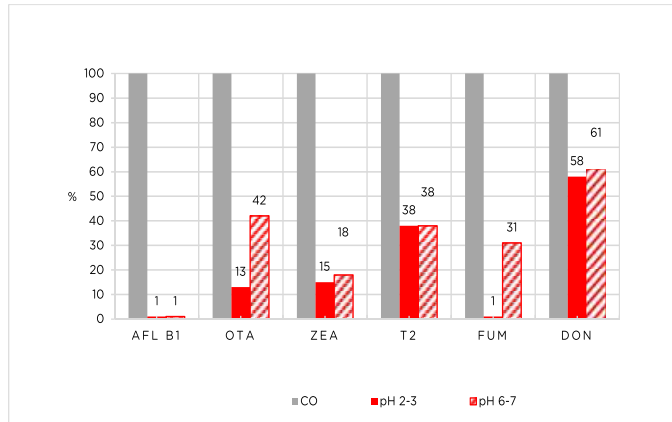
**AVAILABLE PELLET SIZE:** 3mm / 6mm, slow sinking

**AVAILABLE PACKAGES:** 25 kg bag



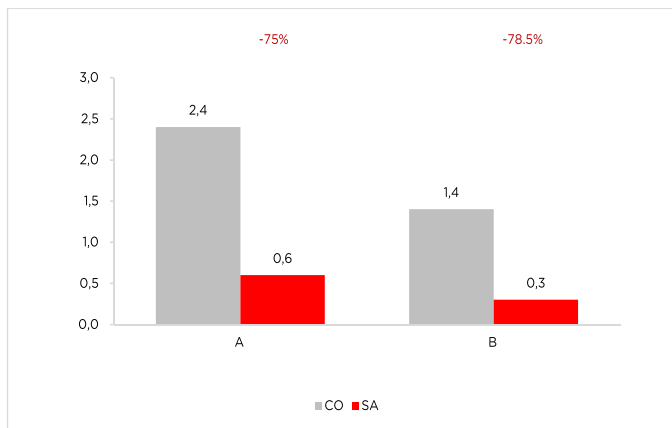
## CASESTUDIES

### ADSORPTION CAPABILITY of main relevant mycotoxins at different pH values



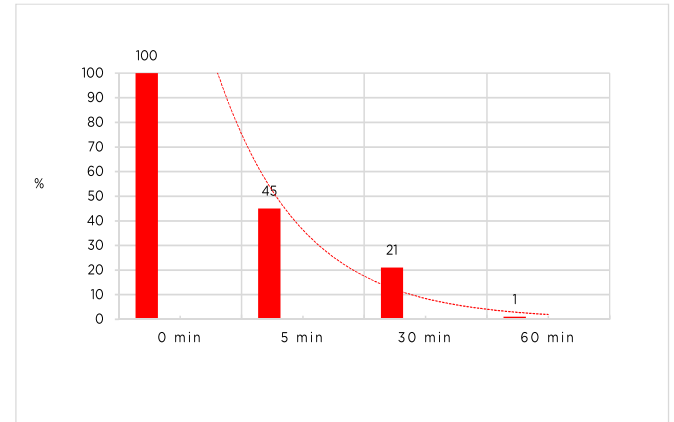
CO=Control, pH 2-3=with SANA, pH 6-7=with SANA, 0,2% SANA/tonne  
AFLA B1=Aflatoxin B1, c=0.5ppm  
OTA=Ochratoxin, c=0.25ppm  
ZEA=Zearalenon, c=0.5ppm  
T2=T2 Toxin T2, c=0.25ppm  
F=Fumonisin FUM, c=0.25ppm  
DON=Deoxynivalenol, c=0.5ppm

### Effects of SANA supplementation on HISTOLOGICAL INFLAMMATION SCORE *Mucosa apical*



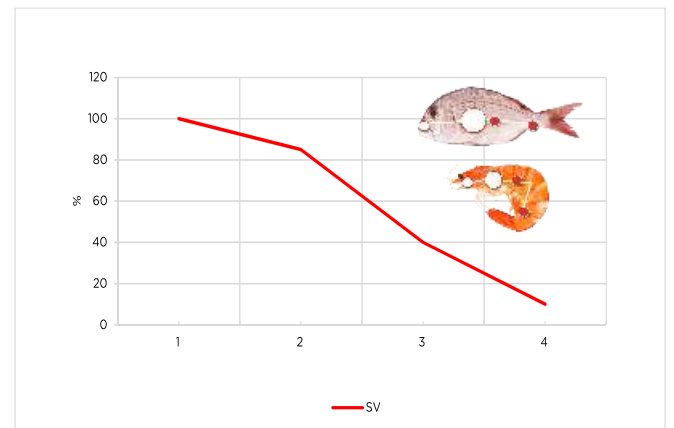
CO=Control  
SA=SANA  
A=Hyperemia  
B=Hemorrhage

### PROCESS SPEED at adsorption of mycotoxin Aflatoxin B1



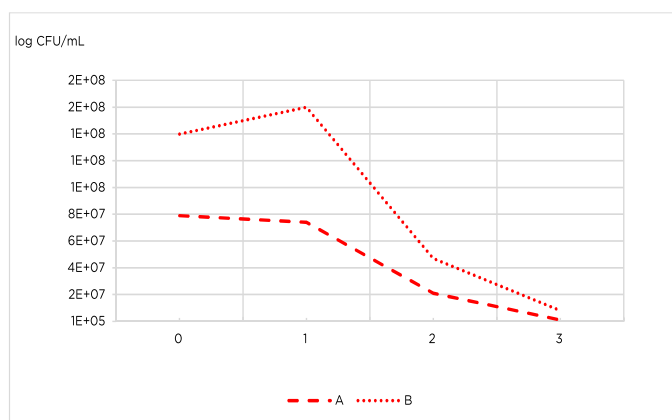
Dosage 2kg SANA/1000kg feed, SANBOS, 2015

### OPERATING RANGE and recovery of SALVUS along the digestive tract



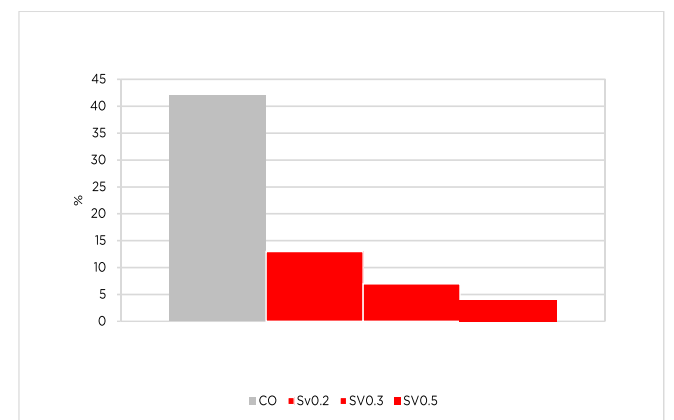
1= Mouth 2=Stomach 3=Intestine 4=Rectum  
Dosage 2kg SALVUS/1000kg feed, SANBOS, 2015

### Significant REDUCTION OF PATHOGEN intestinal bacteria on fish



A=E.Coli  
B=Salmonella serovars  
Week 0=untreated  
Week 1/2/3=treated with dosage 2kg SALVUS/1000kg feed

### Significant reduction of MORTALITY of Tilapia post challenge with pathogen *Aeromonas hydrophila*

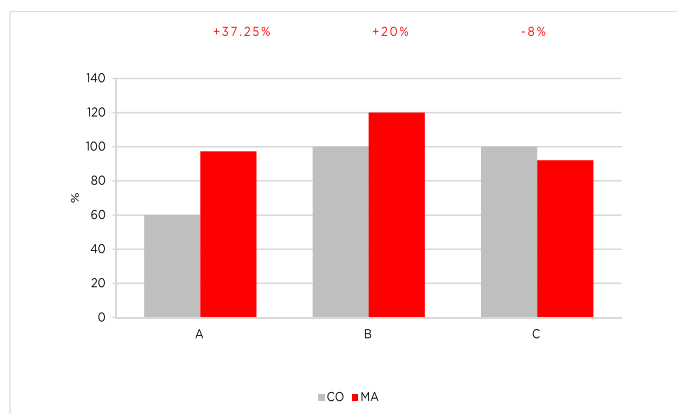


CO=Control, untreated  
SV0.2=treated with SALVUS 0.2%  
SV0.3=treated with SALVUS 0.5%  
SV0.5=treated with SALVUS 0.5%  
Breed Red Tilapia (*Oreochromis sp.*), Sanbos, 2018



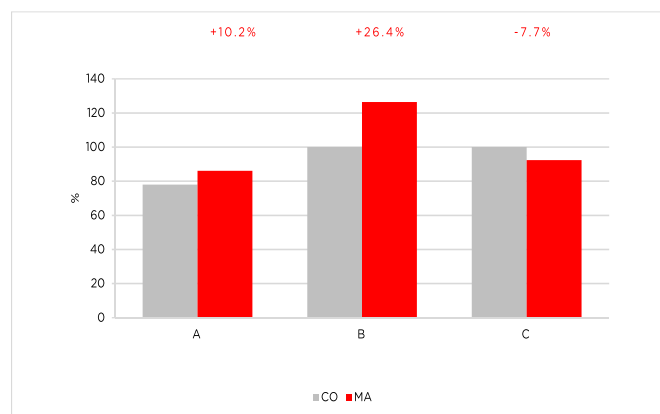
## CASESTUDIES

### RED TILAPIA



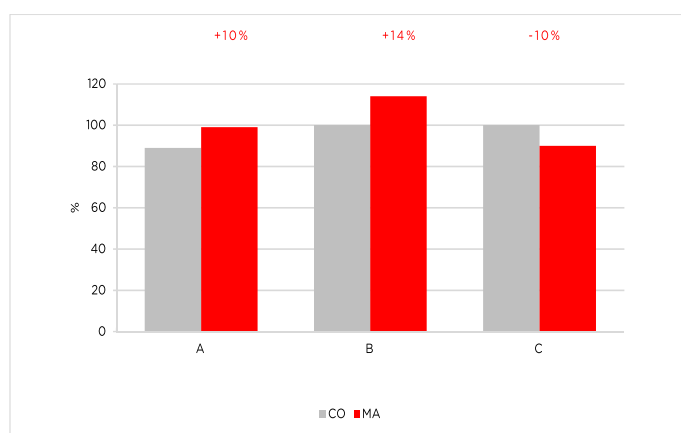
CO=Control group, untreated  
MA=Treated group, dosage 20% MARE of total feed  
A=Survival rate  
B=Weight gain  
C=Feed conversion rate  
Red Tilapia (*Oreochromis sp.*), Han, China, 2018

### PANGASIUS



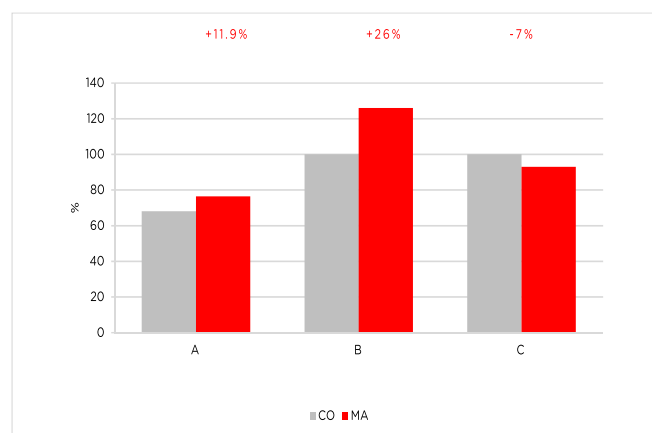
CO=Control group, untreated  
MA=Treated group, dosage 20% MARE of total feed  
A=Survival rate  
B=Weight gain  
C=Feed conversion rate  
Breed Pagasius, Han, 2018

### RAINBOW TROUT



CO=Control group, untreated  
MA=Treated group, dosage 20% MARE of total feed  
A=Survival rate  
B=Weight gain  
C=Feed conversion rate  
Breed Rainbow Trout (*Onchorhynchus mykiss*), Sanbos, 2011

### SNAPPER



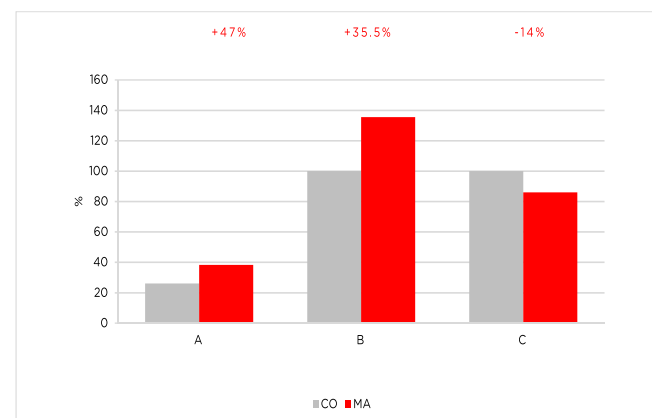
CO=Control group, untreated  
MA=Treated group, dosage 20% MARE of total feed  
A=Survival rate  
B=Weight gain  
C=Feed conversion rate  
Breed Red Purple Snapper (*Lutjanus sp.*) Sanbos, 2011

### SEA BREAM



CO=Control group, untreated  
MA=Treated group, dosage 20% MARE of total feed  
A=Survival rate  
B=Weight gain  
C=Feed conversion rate  
Breed Red Sea Bream (*Pagrosomus major*), Han, 2016

### SHRIMPS



CO=Control group, untreated  
MA=Treated group, dosage 20% MARE of total feed  
A=Survival rate  
B=Weight gain  
C=Feed conversion rate  
Breed White leg shrimp (*Litopenaeus vannamei*), Vietnam, 2014

## LEGAL LIMITATIONS AND ASPECTS

Certain statements may not be applicable in all geographical regions.

Product associated claims may differ based on government requirements.

Product composition and availability may vary by country.

Please contact SANBOS for further information.

SANBOS® and SANBIO® are registered brands of SANBOS GmbH.



## **GET IN TOUCH WITH US**

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**Youtube**        **sanbio sanbos**

**Facebook**      **sanbio**



**SANBIO.** The novel approach of aquafarming.  
Nutrition. Stimulation. Protection.