



# MARINE LEADER

[www.marineleader.co.th](http://www.marineleader.co.th)

Healthy & Survival

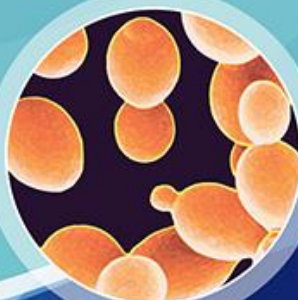
Growth & Profit

Sustainability

**Probiotic program for good farm management**



**Microorganisms**



**Exoenzyme**



**Lactic acid**

**Competitive exclusion of the pathogens**



## Pediosac



### Lactic Acid Microbiological Product for Aquatic Animal

- Produce lactic acid condition by organic acid for control pH water in pond.
- Competitive exclusion of the pathogens : *Vibrio spp.*, *Escherichia coli*, *Salmonella spp.*
- Modifying Bi-Carbonate group ( $2\text{HCO}_3^-$ ) equilibrium.
- Essential for produce the flock suspensions in the pond both heterotrophs flock and autotrophs flock.
- Produce Carbon and Nitrogen cycle (C:N ratio) equilibrium in pond

#### Composition (cfu/kg) :

<i>Lactobacillus spp.</i>	$5.0 \times 10^9$
<i>Pediococcus spp.</i>	$1.0 \times 10^9$
<i>Saccharomyces spp.</i>	$1.0 \times 10^9$

#### Pediosac Fermentation

No Oxygen condition.

Pediosac	0.2%	Molasses	5.0%
Rice bran	1.0%	Water	100 L
Mix 20-30 min. Keep in no oxygen condition 24-36 hr.			

#### Application :

- Mix or top coat Pediosac 5 – 10 g/1 kg feed.
- Fermented Pediosac
  - For control pH in pond use fermented pediosac 300-600 L / hectare
  - For Flock system or control *Vibrio spp.* use fermented pediosac 600 L / hectare continue 5-15 days

Packaging : 1 kg

## NOVOBIOTIC-PLUS



### Liquid Probiotics for Hatchery Use

- Stimulate immune system
- Improve growth rate
- Inhibit and prevent white gut and pathogenic *Vibrio* infection
- Inhibit Luminescent bacteria
- Decompose sludge and uneaten feed
- A liquid probiotic: better dispersion, rapid bacteria multiplication
- Control microbial stability in water system

#### Composition (cfu/L) :

<i>Bacillus spp.</i>	$1.0 \times 10^9$
<i>Lactobacillus spp.</i>	$1.0 \times 10^9$
<i>Pediococcus spp.</i>	$1.0 \times 10^9$
<i>Saccharomyces spp.</i>	$1.0 \times 10^9$

#### Application :

- Dilute NOVOBIOTIC-PLUS 1-1.5 ml/ 1 ton water and disperse into larvae tank 1 time everyday throughout the zoea-PL culture program

Packaging : 500 ml

## MICRO-MAX



### Combination of microbial product for Grown Out Pond

- Efficiency remove and prevent the build up of ammonia, nitrite and hydrogen sulfide
- Reduce bottom sludge
- Reduce unknown reason mortality of Shrimp during the last month of culture



#### Composition (cfu/kg) :

<i>Bacillus spp.</i>	$5.0 \times 10^9$
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#### Application :

- Use 2-3 kg/hectare of MICRO-MAX by Dissolve in water, leave for 30 min. and splash continuously into the pond for 3-5 days

Packaging : 1 kg



# ENVIBAC



## Probiotic for Maintaining Good Water Quality

- Effectively degrades organic waste and bottom sludge
- Prevent the growth of luminous Vibrio and plankton
- Improve the color/transparency of pond water, promote the growth of good phytoplankton
- Reduce ammonia, nitrites, and hydrogen sulfide levels
- Controls pH fluctuation

### Composition (cfu/kg) :

<i>Bacillus spp.</i>	$1.0 \times 10^{10}$
<i>Lactobacillus spp.</i>	$1.0 \times 10^{10}$
<i>Saccharomyces spp.</i>	$1.0 \times 10^9$

### Application :

- Dissolve ENVIBAC in water, leave for 10-30 min

- Splash it into the pond

Packaging : 1 kg

## Recommended Dosage :

### 1. Prevention program

- Prepare pond before shrimp stocking

- Sandy soil : 0.3-0.6 kg/hectare, 1 time a week
- Normal pond 0.6-1.5 kg/hectare, 1 time a week

- 1-60 days old shrimp

- 1 kg/hectare, 1 time a week

- Over 60 days old

- 1 kg/hectare every 4 days

### 2. Treatment program

- High ammonia/nitrite level
  - Control luminous Vibrio and harmful phytoplankton such as blue green algae and dinoflagellates
  - Reduce bottom sludge
- continue do as prevention program for 3 days

# BACTOSAC-A



## Probiotic for Healthy Shrimp and Fish

- Maintain beneficial microorganisms in the intestine tract
- Inhibit Vibrio infection, reduce white gut problem
- Increase digestibility and nutrient absorption
- Stimulate shrimp's immune system

### Recommended Dosage :

1. Prevention program 5 g/1 kg feed, 2 times a day
2. Treatment program 10 g/1 kg feed, 2 times a day

### Composition (cfu/kg) :

<i>Bacillus spp.</i>	$1.0 \times 10^{10}$
<i>Lactobacillus spp.</i>	$1.0 \times 10^{10}$
<i>Pediococcus spp.</i>	$1.0 \times 10^9$
<i>Saccharomyces spp.</i>	$1.0 \times 10^9$

### Application :

- Use as a top dressing on feed
  - Put a little water and mix well
  - Feed them to the shrimp
- Packaging : 500 g



## Advantages of Probiotics

### Biological control

- Competitive exclusion of the pathogens: *Vibrio spp.*, *Escherichia coli*, *Salmonella spp.*
- Reducing the risk of disease: White gut, Loose shell, Luminous vibriosis, White spot syndrome, Yellow head disease and EMS
- Stimulating the immune system of aquatic animal
- Eliminating harmful phytoplankton/algae blooms, promoting the growth of beneficial phytoplankton
- Enhancing feed consumption, growth and survival rate
- Producing the Bio-floc:

Dense and active aerobic microbial communities and converted organic waste into microbial protein and in order to recycle feed residues and raise feed efficiency

### Physical

- Improving the color/transparency of pond water
- Decomposing bottom sludge and uneaten feed

### Chemical control

- Removing toxic compounds: Ammonia ( $\text{NH}_3$ ), Nitrite ( $\text{NO}_2^-$ ), Hydrogen sulfide ( $\text{H}_2\text{S}$ )
- Modifying chemical equilibrium in pond aquaculture: Carbon cycle, Nitrogen cycle, Phosphorus cycle

## Characteristics of Probiotic

### Bacillus

- Produce enzyme protease, amylase, lipase, cellulase, xylanase:
  - Degrade organic matter
  - Digest feed
- Reduce ammonia, nitrite and hydrogen sulfide

### Yeast

- Growth promotor
- Stimulate immune response

### Lactic Acid Bacteria (*Lactobacillus spp.*, *Pedococcus spp.*)

- Competitive exclusion:
  - produce lactic acid antagonistic to pathogen growth (*Vibrio spp.*, *Escherichia coli*, *Salmonella spp.*)
  - Competition for nutrient, space of oxygen
- non-toxic, safe, sustainable approved
- pH range: 3-9
- salinity range: 0-45 ppt
- temperature range :0-45 °C
- thrives in aerobic and anaerobic condition

## Estimation of Probiotics Application

Pond preparing		1 month	2 months	3-4 months
<ul style="list-style-type: none"> <li>✓ <b>Envibac</b></li> <li>• 3 kg/hectare</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Bactosac-A</b></li> <li>• 5 g/1 kg feed</li> <li>• 2 times a day</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Bactosac-A</b></li> <li>• 5 g/1 kg feed</li> <li>• 2 times a day</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Bactosac-A</b></li> <li>• 5 g/1 kg feed</li> <li>• 2 times a day</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Bactosac-A</b></li> <li>• 5 g/1 kg feed</li> <li>• 2 times a day</li> </ul>
	<ul style="list-style-type: none"> <li>✓ <b>Envibac</b></li> <li>• 0.5 kg/hectare</li> <li>• 1-2 times/week</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Envibac</b></li> <li>• 0.5 kg/hectare</li> <li>• 1-2 times/week</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Envibac</b></li> <li>• 0.5 kg/hectare</li> <li>• 1-2 times/week</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Envibac</b></li> <li>• 0.5 kg/hectare</li> <li>• 1-2 times/week</li> </ul>
		<ul style="list-style-type: none"> <li>✓ <b>Pediosac</b></li> <li>• 1-2 kg/hectare</li> <li>• every 3-5 days</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Pediosac</b></li> <li>• 1-2 kg/hectare</li> <li>• every 3-5 days</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Pediosac</b></li> <li>• 1-2 kg/hectare</li> <li>• every 3-5 days</li> </ul>



Manufactured by  
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# PRO.B

## Microbiological product for feed formulation



Registration No. 01 04 57 0173 (DLD)

### Composition (cfu/kg):

<i>Bacillus subtilis</i>	1.0x10 <sup>10</sup>
<i>Bacillus licheniformis</i>	1.0x10 <sup>10</sup>
<i>Bacillus pumilus</i>	1.0x10 <sup>10</sup>

### Terms of Use

Use for Probiotic

### Manufactured by



**K.M.P.BIOTECH CO., LTD.**

188/9 Moo 2, Klongtumru,  
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20000, Thailand.

### Distributed by



**K.M.P.BIOTECH CO., LTD.**

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[www.marineleader.co.th](http://www.marineleader.co.th)

### Benefits

1. Increase digestibility and nutrient absorption, Reduce FCR
2. Prevent infection disease in gut by competitive exclusion of the pathogens: *Vibrio* spp., *Escherichia coli*, *Salmonella* spp.
3. Decompose organic waste and reduce ammonia, nitrite and hydrogen sulfide

### Application

Aquatic animal

- Mixing Pro.B 5 – 10 g/ 1 kg feed.

### Storage

Store in cool and dry place, Keep away from direct sunlight.

LOT.

MFD.

EXP.





# PEDIOSAC

## Lactic Acid Microbiological Product for Aquatic Animal

Lactic Acid Bacteria (LAB) produce lactic acid for prebiotic and probiotic



Registration No. 01 04 57 0330

### Composition (cfu/kg):

<i>Lactobacillus spp.</i>	5.0x10 <sup>9</sup>
<i>Pediococcus spp.</i>	1.0x10 <sup>9</sup>
<i>Saccharomyces spp.</i>	1.0x10 <sup>9</sup>

### Pediosac Fermentation

No Oxygen condition.

• Pediosac	0.2 %
• Rice bran	1.0 %
• Molasses	5.0 %
• Water	100 Lite

Mix 20-30 min. Keep in no oxygen condition 24-36 hr.

### Storage

Store in cool and dry place, Keep away from direct sunlight.

### Manufactured by



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### Benefits

1. Produce lactic acid condition by organic acid for control pH water in pond.
2. Competitive exclusion of the pathogens: *Vibrio spp.*, *Escherichia coli*, *Salmonella spp.*
3. Modifying Bi-Carbonate group ( $2\text{HCO}_3^-$ ) equilibrium. Essential for produce the flock suspensions in the pond both Heterotrophic flock and Autotrophic flock.
4. Produce Carbon and Nitrogen cycle (C:N ratio) equilibrium in pond

### Application for Aquatic animal

- Mix or top coat Pediosac 5-10 g/1 kg feed.

#### Fermented Pediosac

##### For control pH in pond

- use fermented Pediosac 300-600 lite/hectare

##### For Flock system or control *Vibrio spp.*

- use fermented Pediosac 600 lite/hectare continue 5-15 days

LOT.

MFD.

EXP.





# ENVI-BAC

## Microbiological Product for Organic Waste Degradation and Maintaining of Good Water Quality

Specialized multi-strain of live microorganism for Accelerating of organic waste in shrimp pond



### Benefits

- 3** • Degradation of organic waste in shrimp pond  
• Controlling of ammonia, nitrite and hydrogen sulfide  
• Maintaining of good water quality

### Composition

Concentrate microbiological product containing  
*Bacillus licheniformis* 1.0x10<sup>10</sup> cfu/kg  
*Bacillus subtilis* 1.0x10<sup>10</sup> cfu/kg  
*Lactobacillus acidophilus* 1.0x10<sup>10</sup> cfu/kg  
*Saccharomyces cerevisiae* 1.0x10<sup>9</sup> cfu/kg  
 Rice hull, Calcium carbonate q.s.p.

### Indication

1. Degrading of organic waste and bottom sludge
2. Controlling of luminous *Vibrios* and plankton in pond
3. Improving the water color/transparent and promoting the growth of good phytoplankton
4. Controlling ammonia, nitrite and hydrogen sulfide
5. Control pH fluctuation

### Storage

Store in cool and dry place, Keep away from direct sunlight

### Manufactured by



**K.M.P.BIOTECH CO., LTD.**

188/9 Moo 2, Klongtumru, Muang Chonburi,  
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### Distributed by



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E-mail : marineleader@hotmail.com

### Direction for Use

Dissolve :

- 1 kg of ENVI-BAC in 200 liters water, leave for 10-30 minute
- Splash it into the pond

### Recommended dose

#### 1. Prevention program

##### Pond Preparing :

**Sandy soil pond** : 0.3-0.6 kg/hectare, once a week  
**Normal pond** : 0.6-1.5 kg/hectare, once a week

##### Grow-Out Pond :

**1-60 days of age** : 1 kg/hectare, once a week  
**More than 60 days of age** : 1 kg/hectare, every 4 days

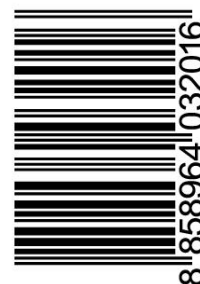
#### 2. Treatment program

- For high level of dissolved ammonia and nitrite
- For controlling of *Vibrios* and harmful phytoplankton such as blue green algae and dinoflagellates
- For reducing bottom sludge
- Use same dose as prevention program for 3 days a week continuously

LOT.

MFD.

EXP.



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# BACTOSAC-A

## The Probiotic solution for Aquatic animal

Specialized multi-strain of live microorganism for shrimp and fish



# 3

### Benefits

- Increase digestibility and nutrient absorption
- Controlling of pathogenic bacteria in GI tract
- Maintaining of shrimp's immune system

### Composition

Concentrate microbiological product containing

<i>Lactobacillus acidophilus</i>	5.0x10 <sup>9</sup> cfu/kg
<i>Lactobacillus plantarum</i>	5.0x10 <sup>9</sup> cfu/kg
<i>Bacillus subtilis</i>	5.0x10 <sup>9</sup> cfu/kg
<i>Bacillus licheniformis</i>	5.0x10 <sup>9</sup> cfu/kg
<i>Streptococcus faecium</i>	5.0x10 <sup>9</sup> cfu/kg
<i>Pediococcus pentosaceus</i>	1.0x10 <sup>9</sup> cfu/kg
<i>Saccharomyces cerevisiae</i>	1.0x10 <sup>9</sup> cfu/kg

Rice hull, Calcium carbonate q.s.p.

### Indication

1. Maintain beneficial microorganism in the intestinal tract
2. Inhibit Vibrio infection and white gut problem
3. Increase digestibility and nutrient absorption
4. Stimulate shrimp's immune system

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### Distributed by

### Direction for Use

Mix BACTOSAC-A 5 - 10 g with squid oil  
20 - 30 ml per 1 kg of feed

### Storage

Store in cool and dry place, Keep away from direct sunlight

### Recommended dose

#### 1. Prevention program

Use BACTOSAC-A 5 g/kg of feed, two times a day

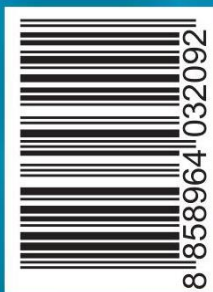
#### 2. Treatment program

Use BACTOSAC-A 10 g/kg of feed, two times a day

LOT.

MFD.

EXP.





# MICRO-MAX

## Combination Microbial Product for Growth-Out Pond



Registration No. 01 04 57 0329 (DLD)

### Composition (cfu/kg):

<i>Bacillus subtilis</i>	5.0x10 <sup>9</sup>
<i>Bacillus licheniformis</i>	5.0x10 <sup>9</sup>

### Terms of Use

Use for Probiotic

### Storage

Store in cool and dry place, Keep away from direct sunlight.

### Manufactured by



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### Benefits

1. Efficiency remove and prevent the buildup of ammonia, nitrite and hydrogen sulfide
2. Reducing bottom sludge
3. Produce Carbon and Nitrogen cycle (C:N ratio) equilibrium in pond
4. Competitive exclusion of the pathogens: *Vibrio* spp., *Escherichia coli*, *Salmonella* spp.

### Application

#### Aquatic animal

- mix or top coat 5 – 10 g/1 kg feed.

#### For control water in pond

- Using Micro-Max 200-300 g/ 1,600 square meters (2-3 kg/hectare) splash in to the pond continue 3-5 days every week.

LOT.

MFD.

EXP.





# NOVOBIO<sup>®</sup>TIC-PLUS

## Microbiological Product for Organic Waste Degradation and Maintaining of Good Water Quality

Specialized multi-strain of live microorganism  
for hatchery

Safe for Human and Animal

Good  
bacteria

For  
Veterinary  
Use Only

3

### Benefits

- Degradation of organic waste in the hatchery
- Controlling of ammonia, nitrite and hydrogen sulfide
- Stimulate immune system

Registration no. 01 04 55 0445

Net Weight 500 ml



# NOVOBIOTIC-PLUS

## Composition

<i>Lactobacillus acidophilus</i>	1.0 x 10 <sup>9</sup> cfu/L
<i>Lactobacillus plantarum</i>	1.0 x 10 <sup>9</sup> cfu/L
<i>Pediococcus pentosaceus</i>	1.0 x 10 <sup>9</sup> cfu/L
<i>Saccharomyces cerevisiae</i>	1.0 x 10 <sup>9</sup> cfu/L
<i>Bacillus subtilis</i>	1.0 x 10 <sup>9</sup> cfu/L
<i>Bacillus licheniformis</i>	1.0 x 10 <sup>9</sup> cfu/L
Mollass, Deionize water add to 1 Liter	

## Indication

- Stimulate immune system
- Improve growth rate
- Inhibit Vibrios infection and white gut problem
- Control luminescent bacteria
- Degradation of organic waste and bottom sludge
- Maintaining of good water quality

## Direction for use

- Use NOVOBIOTIC-PLUS 1-1.5 ml/ton of water
- Disperse it into larvae tank regularly, one time per day start from zoea to post larvae

## Storage

Store in cool and dry place, Keep away from direct sunlight

## Manufactured by



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