

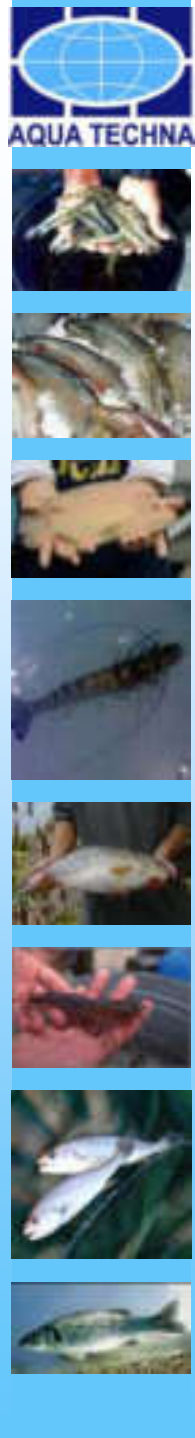


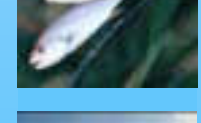
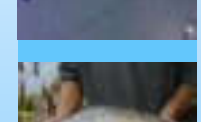
# ***PERFOSTIM***

***FIELD TRIALS IN INDIA***

***RESULTS***

***OCT 2005 - DECEMBER 2005***





# PERFOSTIM S/F

# COMPOSITION

**PERFOSTIM S/F IS AN ORIGINAL FEED ADDITIVE COMPOSED OF TESTED BACTERIA AND ESSENTIAL ELEMENTS :**

## BACTERIA

*PEDIOCOCCUS ACIDILACTICI*  
MA 18/5M

- ✓ COLONIZATION OF DIGESTIVE TRACK
- ✓ DECREASE OF PATHOGENS ACTIVITY
- ✓ IMPROVEMENT OF THE SURVIVAL RATE

## SELENIUM

- ✓ LIMITS THE EFFECT OF FREE RADICALS.
- ✓ ENZYMATIC ACTIVITY STIMULATION
- ✓ IMPROVEMENTS OF GROWTH PERFORMANCES
- ✓ DECREASE OF MORTALITY RATE
- ✓ FASTER RESPONSE OF THE IMMUNE

## VITAMIN E

## VITAMIN C

- ✓ STIMULATION OF THE IMMUNE RESPONSE.
- ✓ INCREASE OF STRESS RESISTANCE.

# **PERFOSTIM S/F** PROPERTIES

⇒ **PERFOSTIM S/F COULD BE USED DIRECTLY BY THE FARMER FOR THE BENEFIT OF ITS REARING**

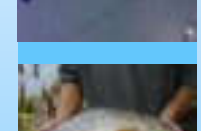
⇒ **PERFOSTIM S/F IS A PROVED ESSENTIAL SUPPLEMENTATION BLEND DEDICATED TO IMPROVE FEED QUALITY AND REARING EFFICIENCY**

⇒ **PERFOSTIM S/F IS ALLOWING :**

✓ **TO STABILIZE GUT BACTERIAL FLORA DURING REARING PHASES**

✓ **TO IMPROVE HEALTH STATUS**

✓ **TO INCREASE GROWTH RATE**



# **PERFOSTIM S/F** **PROPERTIES**

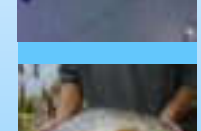
**A STRAIN SELECTED TO IMPROVE THE AQUACULTURE SPECIES PERFORMANCE:**

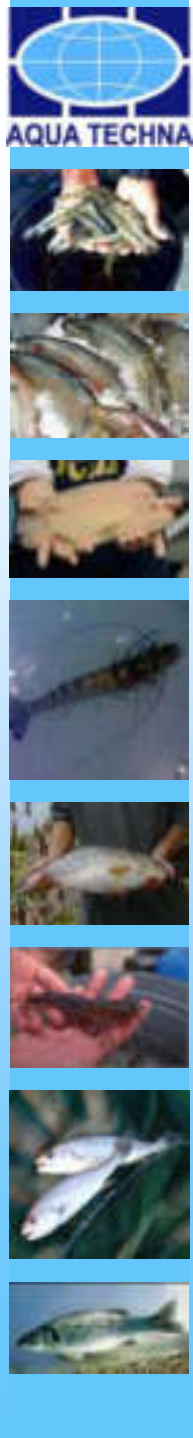
**⇒ IDENTITY:**

- ✓ **PEDIOCOCCUS ACIDILACTICI MA 18/5M,**
- ✓ **DEPOSITED AT THE NATIONAL COLLECTION OF MICROORGANISM (PASTEUR INSTITUTE, FRANCE) N° MA 18/5M.**

**⇒ PROPERTIES:**

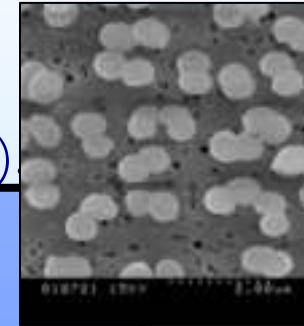
- ✓ **PRODUCES LACTIC ACID L+ FROM CARBOHYDRATE SUBSTRATES (HOMO FERMENTATIVE BACTERIA),**
- ✓ **ABLE TO GROW IN A WIDE RANGE OF PH, TEMPERATURES, OSMOTIC PRESSURES,**
- ✓ **SURVIVES ALL ALONG THE DIGESTIVE TRACT.**



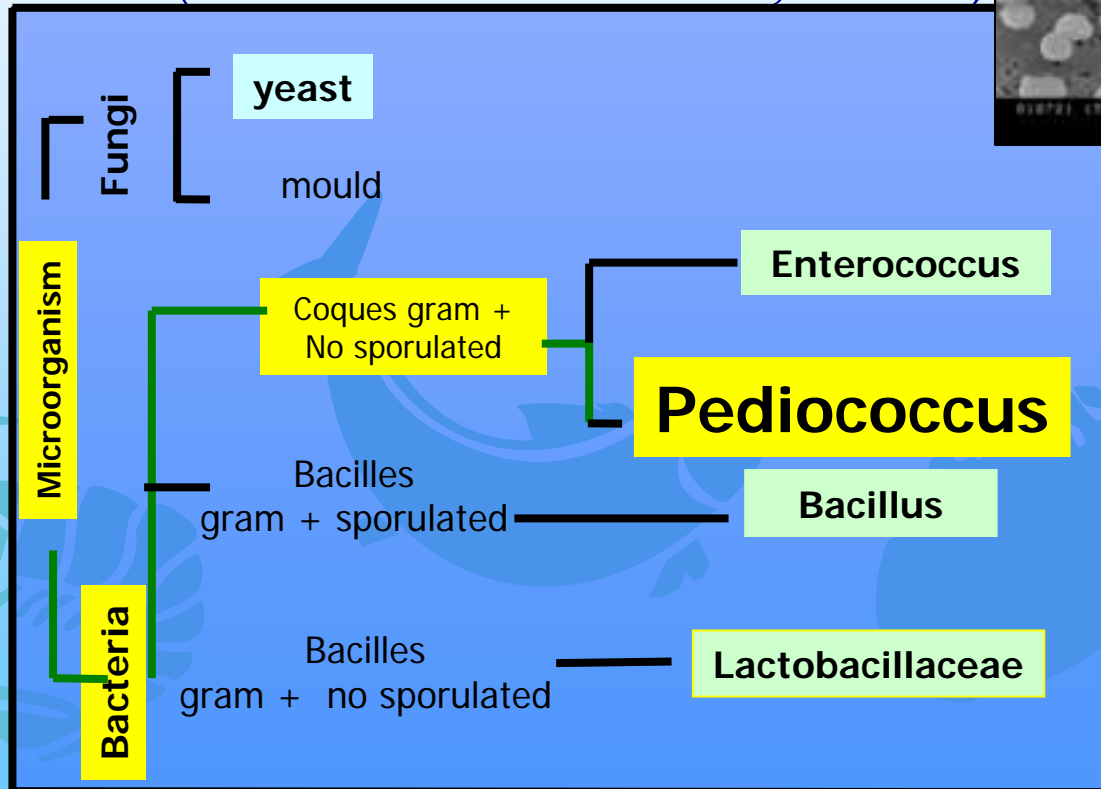


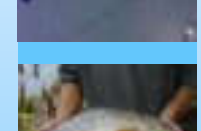
*Pediococcus acidilactici*, strain n°MA 18/5M

Registered at Collection Nationale de Cultures de Microorganismes (CNCM Institut Pasteur, France)



Pediococcus classification  
and other probiotics  
microorganisms

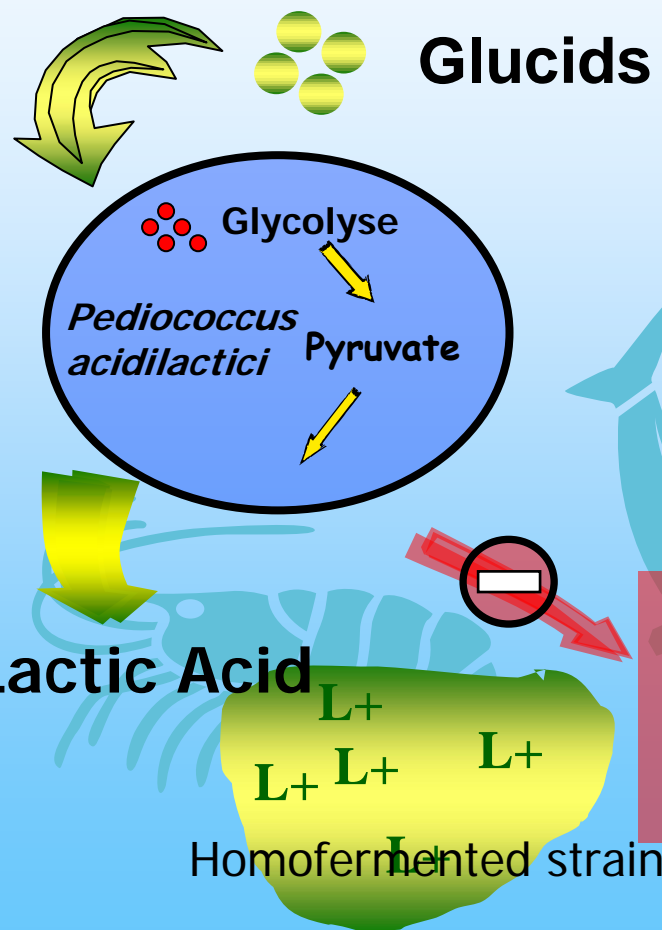




# PERFOSTIM S/F

# PRODUCTION OF LACTIC ACID

Specific sugars transfer to lactic acid by *Pediococcus acidilactici*.



Fermentative profile of <i>Pediococcus acidilactici</i>	
• L-arabinose*	• Rhamnose*
• Ribose*	• N-acetyl glucosamine
• D-xylose*	• Esculine*
• Galactose	• Cellobiose*
• D-glucose	• Trehalose*
• D-fructose	• D-tagatose*
• D-mannose*	

\* not digested by the animal

**CO<sub>2</sub> (nutrients lost)\***  
**Ac. Acetic (less palatability)\***

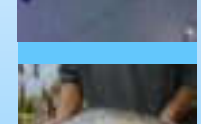
\*: heterofermented bacteria

**Code**

<b>RVG</b>	R. V. Giri, MARINA SHRIMPS, PILLAYARTHIDAL, S. R. PATTINAM (P.O) 614 723,
<b>BJ</b>	B. JAYARAMAN, THAMBIKOTTAI AQUA FARM, SAMPOORNA, SETHUBHAVACHATTHARAM
<b>DKB</b>	Dr. K. BALAKRISHNAN, DIAMOND AQUA FARM, MALLIPPATTINAM (P.O)

**DETAILS OF THE TRIAL PONDS AT THE STAGE OF INITIATING EXPERIMENT :**

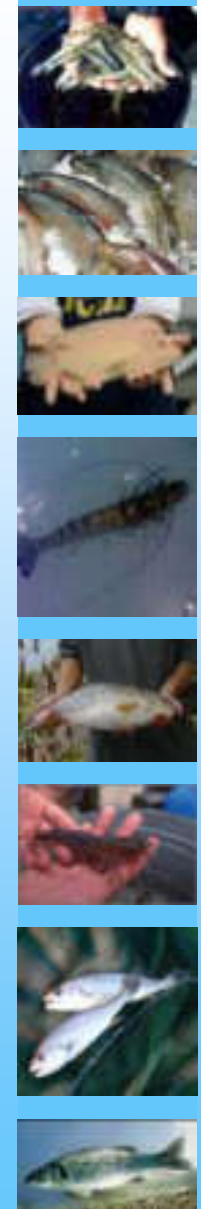
<b>Pond No.</b>	<b>Pond size</b>	<b>D O C</b>	<b>Survival</b>	<b>Biomass</b>	<b>Daily feed</b>	<b>Date</b>
<b>RVG - C</b>	<b>0.8 hec</b>	<b>100</b>	<b>74%</b>	<b>1114 kgs</b>	<b>30 kgs</b>	<b>09.09.05</b>
<b>RVG - T</b>	<b>1.0 hec</b>	<b>100</b>	<b>72%</b>	<b>2080 kgs</b>	<b>50 kgs</b>	<b>09.09.05</b>
<b>BJ - C</b>	<b>0.7 hec</b>	<b>66</b>	<b>80%</b>	<b>620 kgs</b>	<b>20 kgs</b>	<b>09.09.05</b>
<b>BJ - T</b>	<b>0.8 hec</b>	<b>66</b>	<b>90%</b>	<b>1026 kgs</b>	<b>44 kgs</b>	<b>09.09.05</b>
<b>DKB - C</b>	<b>0.6 hec</b>	<b>42</b>	<b>90%</b>	<b>630 kgs</b>	<b>27 kgs</b>	<b>09.09.05</b>
<b>DKB - T</b>	<b>0.6 hec</b>	<b>42</b>	<b>85%</b>	<b>600 kgs</b>	<b>26 kgs</b>	<b>09.09.05</b>



# **PERFOSTIM TRIAL CONDUCTED IN INDIAN SHRIMP FARMS**

## **IMPROVEMENT ON AVERAGE BODY WEIGHT (GRAMS)**

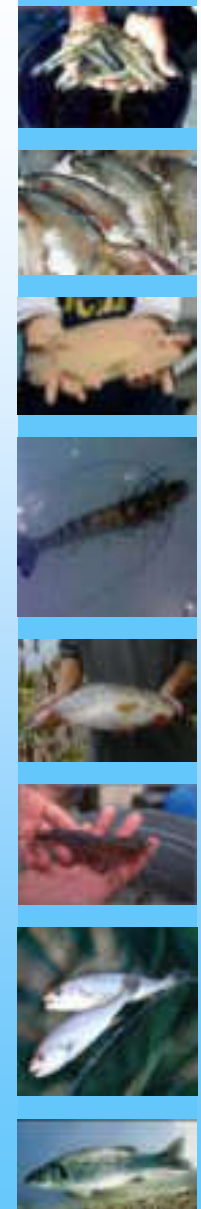
		D 0	D 7	D 14	D 21	D 28	0 to day 28 G/week
<b>Control</b>	<b>RVG - C</b>	18	19.2	20	21.5	22.3	4.30
	<b>BJ - C</b>	9	11	12.5	14.5	16.5	7.50
	<b>DKB - C</b>	6	6.8	8	8.9	10	4.00
<b>PERFOSTIM</b>	<b>RVG - T</b>	16	18.1	20	22	24.6	8.60
	<b>BJ - T</b>	10	12.02	14.05	17	19	9.00
	<b>DKB - T</b>	5	6	7.5	9	10.6	5.60



# **PERFOSTIM TRIAL CONDUCTED IN INDIAN SHRIMP FARMS**

## **COMPARISON OF ABW, SURVIVAL AND BIOMASS**

		ABW incre	Body wt.	Sur. Loss	G / 28 day	Biomass
		0 to day 28	% plus	%	28-0 day	% plus
<b>Control</b>	<b>RVG - C</b>	<b>4.30</b>	<b>0</b>	<b>2</b>	<b>268</b>	<b>0</b>
	<b>BJ - C</b>	<b>7.50</b>	<b>0</b>	<b>0</b>	<b>405</b>	<b>0</b>
	<b>DKB - C</b>	<b>4.00</b>	<b>0</b>	<b>7</b>	<b>370</b>	<b>0</b>
<b>PERFOSTIM</b>	<b>RVG - T</b>	<b>8.60</b>	<b>99.90%</b>	<b>0</b>	<b>1118</b>	<b>317%</b>
	<b>BJ - T</b>	<b>9.00</b>	<b>19.90%</b>	<b>2</b>	<b>1074</b>	<b>165%</b>
	<b>DKB - T</b>	<b>5.60</b>	<b>40.00%</b>	<b>0</b>	<b>460</b>	<b>24%</b>



# **PERFOSTIM TRIAL CONDUCTED IN INDIAN SHRIMP FARMS**



## **RVG FARM, PATTUKOTTAI, TN, INDIA**

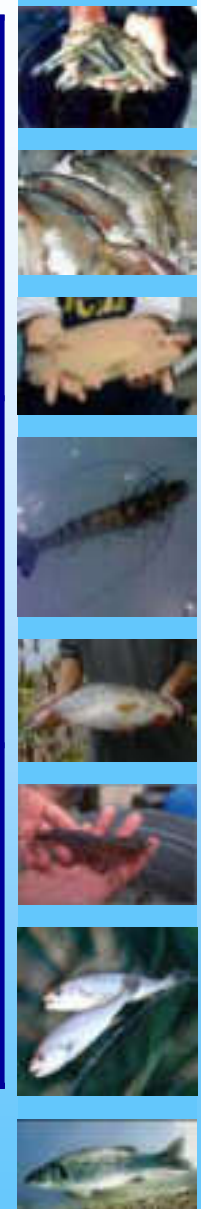
<b>Expected minimum daily growth at a ABW of 16 g: 0.2 gm/day</b>	
<b>Expected maximum daily growth at a ABW of 16 g: 0.4 gm/day</b>	
<b>Daily growth observed in the control ponds of 16 g ABW: 0.15 gm/day</b>	<b>4.3 g in 28 Days</b>
<b>Daily growth observed in the PERFOSTIM ponds of 16 g ABW: 0.31 gm/day</b>	<b>8.6 g in 28 Days</b>

## **BJ FARM, PATTUKOTTAI, TN, INDIA**

<b>Expected minimum daily growth at a ABW of 10 g: 0.15 gm/day</b>	
<b>Expected maximum daily growth at a ABW of 10 g: 0.28 gm/day</b>	
<b>Daily growth observed in the control ponds of 10 g ABW: 0.26 gm/day</b>	<b>7.5g in 28 Days</b>
<b>Daily growth observed in the PERFOSTIM ponds of 10 g ABW: 0.32 gm/day</b>	<b>9 g in 28 Days</b>

## **DKB FARM, PATTUKOTTAI, TN, INDIA**

<b>Expected minimum daily growth at a ABW of 5 g: 0.1 gm/day</b>	
<b>Expected maximum daily growth at a ABW of 5 g: 0.2 gm/day</b>	
<b>Daily growth observed in the control ponds of 5 g ABW: 0.14 gm/day</b>	<b>4 g in 28 Days</b>
<b>Daily growth observed in the PERFOSTIM ponds of 5 g ABW: 0.20 gm/day</b>	<b>5.6 f in 28 Days</b>



# **PERFOSTIM TRIAL CONDUCTED IN INDIAN SHRIMP FARMS**



## **WEEKLY WEIGHT GAIN IN THE THREE INDIAN FARMS** **WITH *PENAEUS MONODON***

