



CAA Certified Antibiotic-free Product: CAA/MAR2023/PRO/04631



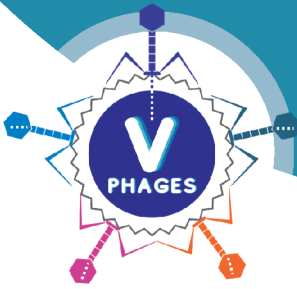
SALEM MICROBES

BACTERIOPHAGE THERAPY FOR SHRIMP FARMS



# V PHAGES GROWOUT

/// EFFECTIVE ON SUPERBUGS



- 100% Natural
- Pathogen specific approach
- Very Fast action
- Does not leave any residues
- Easy and Safe to use

- Benefits:**
- Effective against Bacterial Infections and Bacterial Mortality Syndrome (BMS)
  - Effectively prevents and improves healing
  - Prevents sublethal stress and extends Life of Post-Larval stages
  - Enhances probiotic colonization
  - Works as an Alternative to antibiotics and combines with other natural products

One Health unified approach for balanced welfare of people, animals and ecosystems.



## ONE HEALTH APPROACH



SALEM MICROBES PRIVATE LIMITED

www.salemmicrobes.com



# BACTERIOPHAGE THERAPY FOR SHRIMP FARMS



V PHAGES GROWOUT is a cocktail of Phages isolated from Natural environment. Hence they are safe on aquatic animals, people and ecosystems. This destroys pathogenic bacteria which are even resistant to antibiotics and increases the efficacy of probiotics.

**CONTENTS: Lytic Bacteriophage of total  $10^{10}$  PFU/ML**  
(PFU - Plaque Forming Units)

"V PHAGES GROWOUT" targets against most common pathogenic *Vibrio species*

- ♦ *Vibrio parahaemolyticus*
- ♦ *Vibrio alginolyticus*
- ♦ *Vibrio harveyi*
- ♦ *Vibrio campbellii* and other pathogenic *Vibrio sp.*

**EFFECTIVE ON SUPERBUGS**

## BENEFITS:

- Effective against Vibriosis, other Bacterial Infections and Running Mortality Syndrome (RMS)
- Effectively prevents Gut Infections and Improves feeding
- Prevents sudden crop loss and extends Life of Pond during critical profit-making period
- Enhances probiotic performance

Works as an Alternative to Antibiotics and complies with International Seafood export regulations.

## SALIENT FEATURES

100 % Natural

Pathogen specific approach

Very Fast action

Enhances Probiotic performance

Easy & Safe to use

Does not leave any residues

**BEST APPROACH TO CONTROL PATHOGENIC VIBRIOS**

**V PHAGES GROWOUT** ✓✓

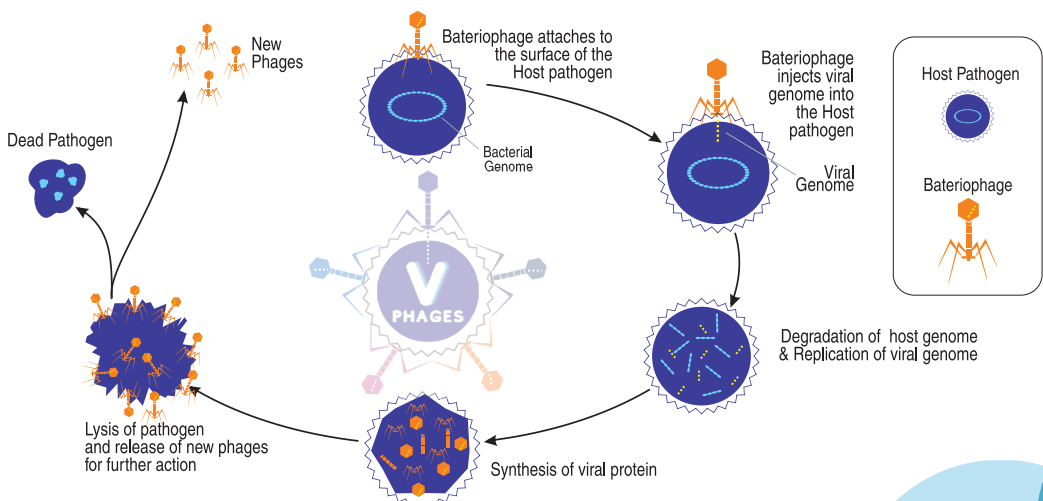
**PROBIOTIC** ✓

**SANITISER** X

**DISINFECTANT** XXX

**ANTIBIOTICS** XXX

## ILLUSTRATION OF ACTION OF PHAGE ON A TARGET BACTERIA



## BACTERIOPHAGE THERAPY FOR SHRIMP FARMS



### Dosage :

#### Preparation of "V PHAGES GROWOUT Mixture" for Pond application:

Add 100 ml of V PHAGES GROWOUT to 10 litre of Pond water, to which it has to be applied. Fully utilize the diluted product mixture and do not store for later use.

#### Preparation of V PHAGES GROWOUT Mixture as Feed Supplement:

Add 100 ml of V PHAGES GROWOUT to 10 litre of Pond water. Use 20 ml of "V PHAGES GROWOUT Mixture" for 1 kg feed. Spray using a sprayer over the feed, shade dry for 20 minutes and use.

### USAGE INSTRUCTIONS:

#### I. PREVENTIVE DOSE:

##### Pond Application:

For 1 Acre (4000 m<sup>2</sup>) Pond, before stocking after pond preparation, make 10 litre of "V PHAGES GROWOUT Mixture" and broadcast throughout the pond area. Repeat every 25 days, to keep infections under control.

##### During stocking:

Use "V PHAGES GROWOUT Mixture" as feed supplement in all feeds for first 7 days at 20 ml per kg of feed.

##### Feed Supplement:

To make sure of "V PHAGES GROWOUT" to reach the shrimp gut, some farmers prefer feed supplements rather than pond application. In such case, Use "V PHAGES GROWOUT Mixture" as Feed supplement in 2 feeds per day for 5 days at 20ml / kg feed. Repeat every 25 days, to keep infections under control.

#### II. TREATMENT DOSE:

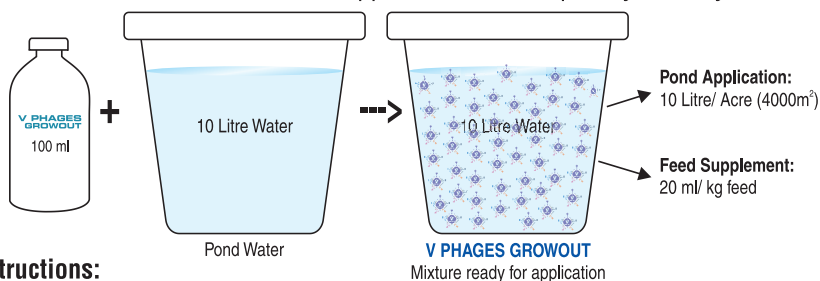
During mild to moderate symptoms of Vibriosis, concluded either by physical appearance, animal behavior and/or by water microbiology, a treatment regime recommended is: Pond Application and Feed Supplement at the same time, to Hit the Causative agent by more than one approach and get faster results, thereby saving the shrimps.

##### Pond Application:

For 1 Acre (4000 m<sup>2</sup>) pond, make 10 litre of "V PHAGES GROWOUT Mixture" and broadcast throughout the pond area. Apply on Day 1, 3 and 5, to control infections.

##### Feed Supplement:

Use "V PHAGES GROWOUT Mixture" as Feed supplement in 2 feeds per day for 5 days at 20 ml per kg of feed.



### General Instructions:

1. Store the vial in cool, dark place under 30°C temperature.
2. If turbidity develops in the vial do not use, discard it.
3. You can use probiotics along this Bacteriophage product. These bacteriophages do not harm Probiotic bacteria.
4. When using Iodine / Chlorine disinfectant, check for the residual Chlorine to be zero before applying bacteriophage product.

## BACTERIOPHAGE THERAPY FOR SHRIMP FARMS



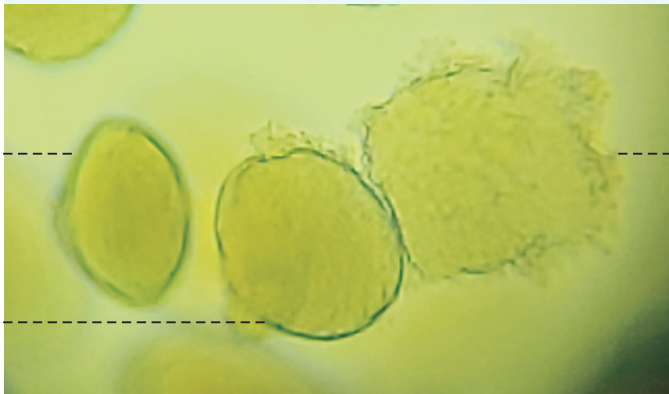
### INTRODUCTION TO BACTERIOPHAGES:

Bacteriophages are viruses of bacteria which enter the bacteria, use the bacterial sources as energy, hijack the bacteria and kill them by lysis. When they kill the bacteria, each virus which enter the bacteria multiplies and releases 10 to 100 mature ready to attack, bacteriophages to infect the next set of target infectious bacteria.

The Concept of competitive exclusion becomes ineffective in certain conditions, with proven horizontal transmission of toxin plasmids among various species of Vibrio. This critical condition demands quick and sure shot treatment, which is non residual in nature and non-GMO. With the advent of Phage therapy, there is a lot of Hope from the Animal Health industry looking for solutions for their teething problems. Today Phages are termed as a best targeted solution rather than generalized use of Antibiotics, which is widely discouraged Globally.

Here comes the concept of Phage Therapy which is highly specific and quick acting in nature.

Stages of Vibrio sp. colonies infected with Bacteriophages & Progressive Lysis observed on an Agar plate, under Stereo Microscope



**Colony 1 in Stage 1:**

Intact Colony may be infected or yet to get infected.

**Colony 2 in Stage 2:**

Phage infected Colony showing Partial lysis

**Colony 3 in Stage 3:**

Phage infected Colony Completely lysed, cell contents with multiplied phages spreads out in search of their host.

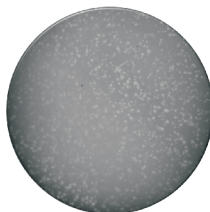
### DEMONSTRATION OF BACTERIOPHAGE LYTIC ACTIVITY ON A LAWN OF PATHOGENIC VIBRIO



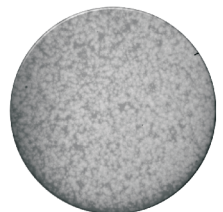
HOST WITHOUT PHAGE INOCULAM



PHAGE PLAQUES STARTS APPEARING



PLAQUES SPREADS THROUGHOUT



PHAGES FULLY SPREAD



Manufactured by :

**SALEM MICROBES PRIVATE LIMITED**

Regd. Off : No.21/10 C, Bajana Madam Street, Gugai, Salem - 636 006.

Tamilnadu. INDIA. Customer Care : +91 70106 96630

E-Mail : salemmicrobes@yahoo.co.in www.salemicrobes.com

An ISO 9001 : 2015 Company

