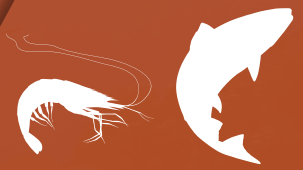
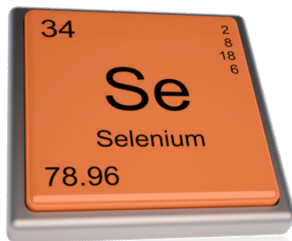


# SEL-PLEX<sup>®</sup>

"A SUPERIOR SOURCE  
OF SELENIUM FOR AQUACULTURE."



## What is selenium?



Selenium is an essential trace mineral for animals and people. It acts as a powerful antioxidant and plays a critical role in metabolism, growth, reproductive health and the body's natural defenses. It also optimizes the immune system of animals during periods of increased demand. Securing the immune system naturally leads to improved performance, as animals waste less energy fighting disease.

Most of the world's agricultural areas are in regions where feed and forages have suboptimal selenium levels. Selenium deficiency is related to various diseases in animals and humans, along with decreased productive and reproductive performance in livestock. Hence, meeting animals' selenium requirements is one of the key factors in production efficiency.

## SEL-PLEX<sup>®</sup> – Alltech's proprietary form of selenium yeast.

Sel-Plex is Alltech's proprietary organic form of selenium yeast. It is an excellent dietary source of selenium and is manufactured to mimic Mother Nature—that is, the selenium in Sel-Plex is in the same form that is found naturally in plants.

Research shows that optimizing selenium nutrition in the diets of aquatic species increases the efficiency of aquaculture production. More importantly, it improves the quality and nutritive value of these products. Sel-Plex delivers a superior source of selenium with the benefits of antioxidants. Hence, there is great potential to increase the efficiency of fish and shrimp production through selenium nutrition.

## Recommended inclusion rates for Sel-Plex in aquaculture

For all types of fish, shrimp and other aquaculture species, 0.3 ppm of selenium from Sel-Plex is recommended <sup>1,2</sup>.

<sup>1</sup> Recommendations may vary depending on local regulations, species, raw materials, life stage, production level etc.

<sup>2</sup> Please contact your local Alltech representative for the most up to date species recommendations and consult with local regulatory authorities.



# BENEFITS OF SEL-PLEX®

## Why SEL-PLEX®?

### ✓ PROVEN

Sel-Plex is the first FDA reviewed organic selenium yeast, and was the first-strain specific form to be EU-approved in all species.

### 📍 TRACEABLE

• Sel-Plex is manufactured, packaged and sold by Alltech using highly controlled manufacturing processes and quality control methods.

• By applying molecular identification checks, we can track its presence in feed. You will always know where your organic selenium source comes from.

### ⊕ SAFE

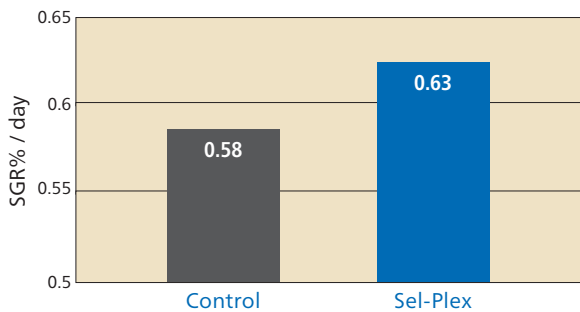
Supported by more than 29 years of research, Sel-Plex is the most researched and proven form of organic selenium.

## BENEFITS FOR SALMON

- Better meat quality
- Improved pigmentation
- Higher growth rate
- Reduced fillet gapping
- Increased selenium muscle content

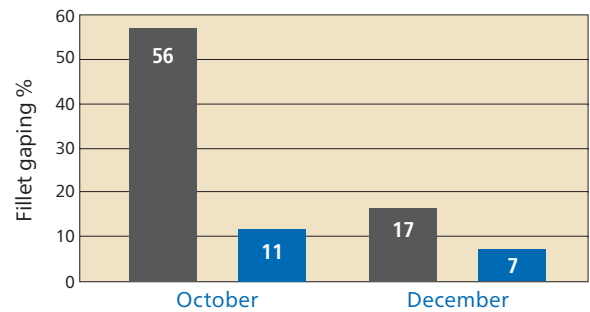


**Figure 1:** Effect of dietary selenium on the specific growth rate (SGR) of Atlantic salmon



Sweetman and Morkore, 2007

**Figure 2:** Effect of dietary selenium on gapping percentage of Atlantic salmon



■ Control ■ Sel-Plex

Sweetman and Morkore, 2007

Sel-Plex supplementation resulted in **41.2%** less gapping



## BIOAVAILABILITY

- The selenium in Sel-Plex is better absorbed, stored and utilized by the animal than inorganic selenium, helping to boost the body's defense system.

- Improved selenium tissue retention means that less selenium is excreted than when livestock are supplemented with sodium selenite or selenate.

- Sel-Plex is environmentally friendly due to lower excretion levels.

## COMPLETE

Sel-Plex is designed to completely replace all inorganic and organic selenium sources in the diet.

## BENEFITS FOR TILAPIA



### TILAPIA FOR BREEDING

- Improved performance of progeny
- Better FCR (feed conversion ratio)
- Higher fry survival %
- Higher weight gain



**Table 1:** Effect of varying levels of selenium supplementation on performance of Nile tilapia progeny

Progeny variables	Sel-Plex mg/kg				
	0	0.25	0.5	0.75	1
Survival %	77.5 <sup>a</sup>	52.5 <sup>b</sup>	86.8 <sup>a</sup>	47.5 <sup>b</sup>	77.3
Weight gain (mg)	760 <sup>c</sup>	1140 <sup>a</sup>	1040 <sup>a</sup>	960 <sup>ab</sup>	810 <sup>b<sup>c</sup></sup>
FCR	1.12 <sup>a</sup>	1.12 <sup>a</sup>	1.02 <sup>a</sup>	1.46 <sup>a</sup>	1.15 <sup>a</sup>

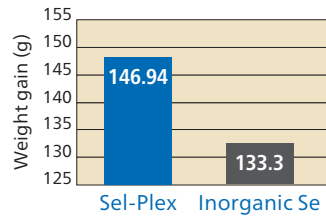
<sup>a, b, c</sup> Values with different superscripts differ (P<0.05) Fabregat et al. (2007)

### TILAPIA FOR HARVEST

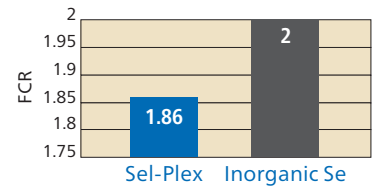
- Higher weight gain
- Higher length gain
- Improved FCR



**Figure 3:** Effect of selenium supplementation on the weight gain of Tilapia



**Figure 4:** Effect of selenium supplementation on the FCR of Tilapia



Sel-Plex supplementation resulted in

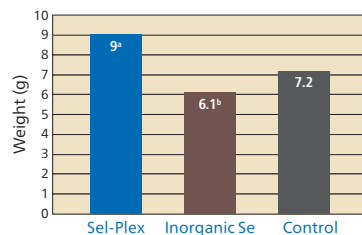
**+10%**  
weight gain

## BENEFITS FOR SHRIMP



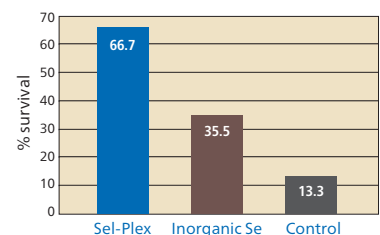
- Supports growth
- Optimized immune performance
- Increased plasma protein levels
- Increased blood cell levels
- Higher selenium muscle content

**Figure 5:** Effect of selenium supplementation on the weight gain of Pacific White Shrimp (*Penaeus vannamei*) after 5 weeks



<sup>a, b, c</sup> Values with different superscripts differ (P<0.05) Sritunyaluksana et al. (2011)

**Figure 6:** Effect of selenium supplementation on the survival of Pacific White Shrimp after a disease challenge (Taura syndrome virus)



Sritunyaluksana et al. (2011)

Sel-Plex supplementation supported shrimp survival

**80%**  
more compared to the control



## THE WORLD'S LEADING EXPERTS AND PRODUCERS OF ORGANIC SELENIUM.

Research into total replacement started more than 10 years ago, when Alltech demonstrated that all inorganic trace minerals could be removed from the animal's diet and be replaced with only organic trace minerals in the form of Sel-Plex and Bioplex. We call this innovation Total Replacement Technology (TRT™).

To ensure maximum mineral bioavailability, organic minerals have been developed in the form of Bioplex using chelation technology. Bioplex trace minerals are presented to the animal in a way that is comparable with their natural organic state in plants.

Sel-Plex is the proprietary selenium-enriched yeast from Alltech and is designed to mimic Mother Nature. It is better absorbed and utilized by the animal than inorganic selenium.



**Alltech**<sup>®</sup> Q+<sup>™</sup>

Quality, Confidence, Safety

ALLTECH Q+™ is the quality control program unique to our range of organic trace minerals. It forms an integral part of the ALLTECH QUALITY SYSTEM (AQS). This program assures that proper approvals and analyses are performed for suppliers, raw materials and finished goods.

**SEL-PLEX**<sup>®</sup>

For more information, please contact your local Alltech representative.

**Alltech**<sup>®</sup>