

# NUCLEO 20

## *Growth and health of shrimp and fish*



### PROPERTIES

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- NUCLEO 20 is a combination of purified nucleotides formulated for aquaculture applications
- NUCLEO 20 helps to improve disease resistance, growth rates and vaccination effectiveness of aquaculture species
- NUCLEO 20 helps to reduce the negative effects of stress

#### NUCLEOTIDES

Provide natural building blocks for cellular multiplication and for biosynthesis of proteins and enzymes.

Nucleotides



- Nucleotides are essential factors in many key body functions (**Immunity** through the multiplication of immune system cells in hepatic functioning, Digestion and growth through a better intestinal absorption)
- Diets are deficient especially during periods of peak demand.
- Many requirements cannot be totally supplied from internal sources from the normal digestion of food.
- De novo synthesis is highly energy consuming

### COMPOSITION

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20% Min

+

Nucleotides (purified natural RNA source)  
Precursors of nucleotides

### USE AND PRESENTATION

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Recommended inclusion levels :

Shrimp

Fish

Starter phase: 2kg / ton

2kg / ton

Grow out: 2kg / ton

1kg / ton

- NUCLEO 20 is presented in powder form
- NUCLEO 20 has been formulated to insure optimal flow during industrial processes and homogeneous incorporation into premixes.
- NUCLEO 20 is stable in all types of animal feed: flour, pellets or liquids and has been formulated to be remain stable in extruders at high pelletization temperatures (<140°C)
- NUCLEO 20 is compatible with all feed ingredients and feed additives usually used in the manufacture of feed
- NUCLEO 20 is a totally non toxic feed ingredient. It leaves no residues. There is no required withdrawal period when using the product.
- NUCLEO 20 can be stored for 18 months after the manufacturing date in a cool, dry place.

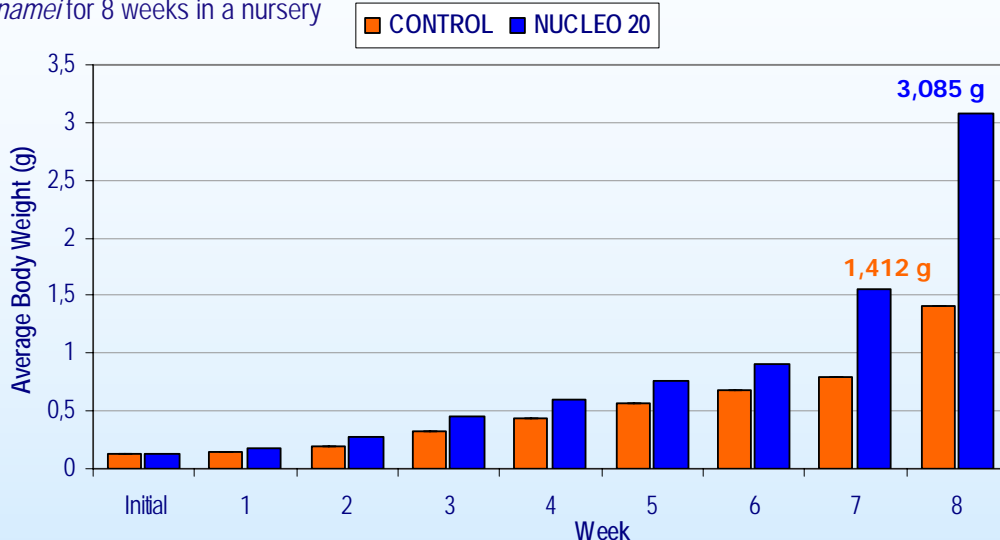


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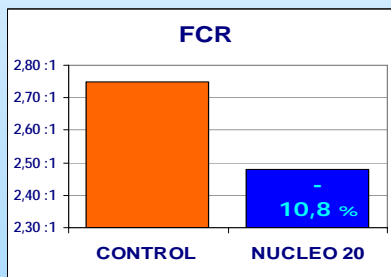
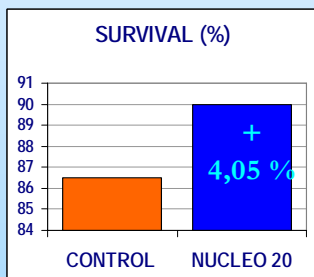
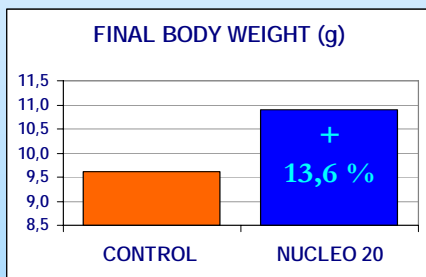
## Benefits for shrimp



- Shrimp trial (source Lallemand courtesy) :
- Effects of the administration of NUCLEO 20 via formulated feed on juvenile shrimp *Penaeus vannamei* for 8 weeks in a nursery

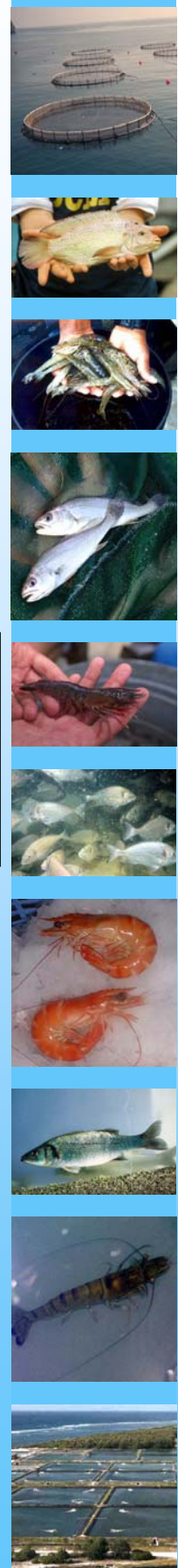


- NUCLEO 20 significantly improves weekly average body weight, final body weight, survival and the FCR after 31 days of experiments with juvenile *Penaeus vannamei*.



- Effects of administration of NUCLEO 20 via formulated feed on shrimp, *Penaeus vannamei*, in grow out earth ponds :

PARAMETERS	UNIT	CONTROL	NUCLEO 20	CHANGE %
<b>TRIAL 1- Trial Period 110 Days</b>				
Final Weight	g	20	25	+25.0%
FCR	1:	1.65	1.2	-27.3%
Survival	%	70	80	+14.3%
<b>TRIAL2- Trial Period 87 days</b>				
Final Weight	G	12.5	15.4	+23.2%
Survival	%	65	90	+38.5%



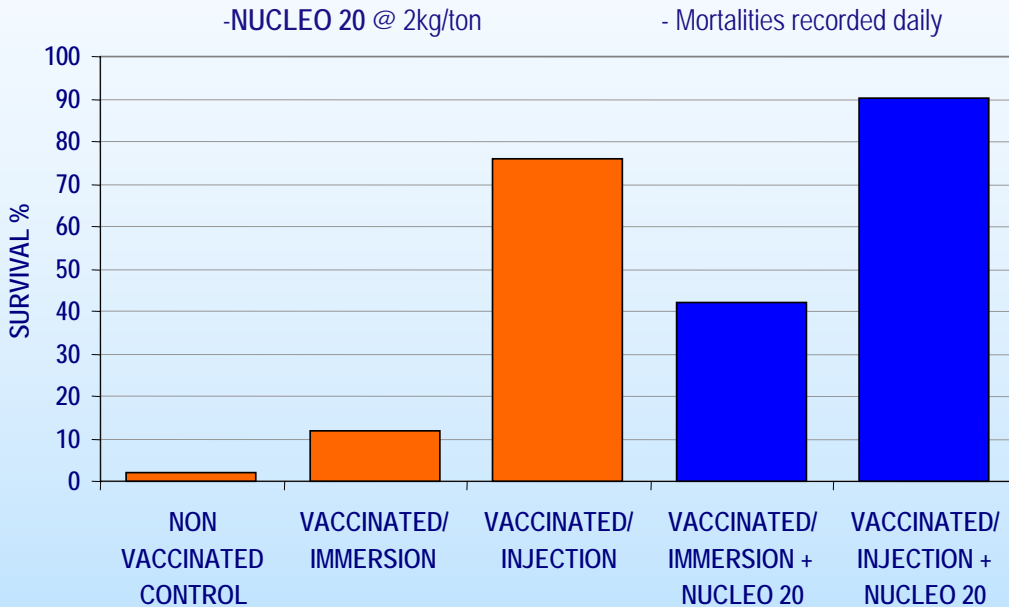
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## Benefits for shrimp and fish



- Fish trials (source Lallemand courtesy) :
- NUCLEO 20 improved the Immune Response of Tilapia after vaccination & significantly reduced mortality confronted with *Aeromonas hydrophila* challenge:

- Comparison of survival of Control Group vs. NUCLEO 20 Group after 84 Days of Experiment:



- NUCLEO 20 in the Diet improves : survival and growth rates, & the FCR of Tilapia.:

