

# FS FEED for Life Food Replacement In Aquaculture Industry

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Analysis Content	FS Feed	Artemia sp.
Protein (%)	<b>41.75</b>	50.6
Lipid (%)	<b>39.67</b>	14.2
Moisture (%)	15.65	2.7
Fibre (%)	0.63	0.65
Ash (%)	<b>0.26</b>	9.4
Energy (kJ)	<b>25.86</b>	18.97

Proximate Analysis comparison between FS Feed and Artemia

## BRIEF TECHNOLOGY

An alternative micro-diet to be used as first feed for fish and shrimp larvae. This innovation was introduced in 2018. FS Feed can be used to replace life feeds such as artemia and rotifer that have been playing an important role in early feeding in aquaculture industries.

## USEFULNESS & APPLICATION

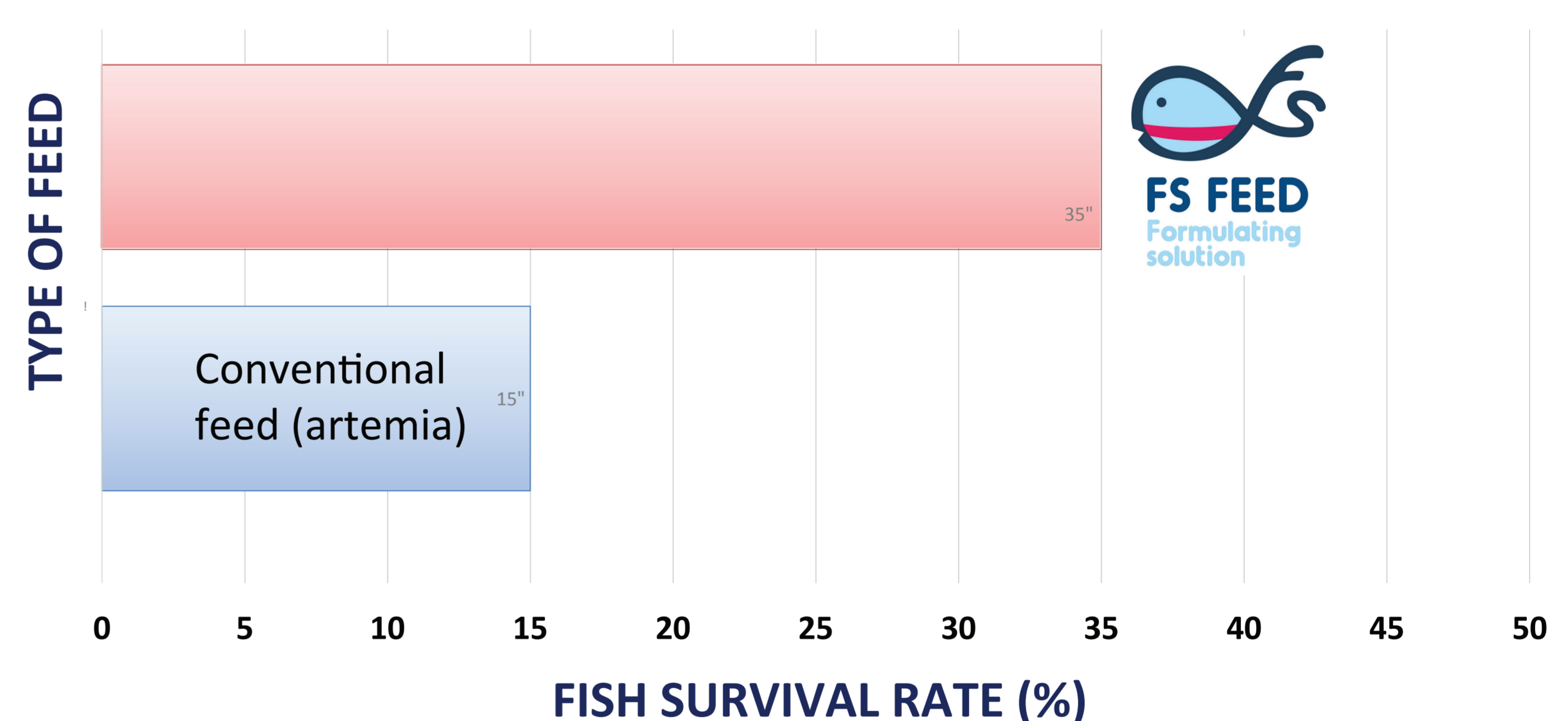
This invention is necessary to reduce cost in producing fish and shrimp larvae. This is done by replacing or reducing the usage of **artemia** and **rotifer** in fish production system. Artemia is a life feed that is normally used to feed fish larvae at earlier stage. It is fully imported, costly and hard to maintained.

## PROBLEM STATEMENT & CURRENT ISSUES

- Poor survival rate of fish and shrimp larvae, up to 80% mortality are common in aquaculture industry.
- Survival depends on early feeding of life feeds such as artemia which is both seasonal and expensive.
- Although there are few micro-feed in the industry, non can replace artemia entirely.
- Most of Artemia cysts are captured from saturated seawater ponds, which are constructed artificially. These ponds are mostly located in Russia, China & West Siberia.
- The Artemia productions from the mentioned countries had dropped for the past 15 years. Currently in Malaysia all artemia are imported and 425 grams of high quality Artemia will cost from **RM 450 – RM 750**, whereas it was only at RM 150 five years ago.

## IMPACT OF THE PRODUCT

### Comparison when using FS Feed and Conventional Method



## INVENTIVENESS & NOVELTY

The micro-diet are easy to use with complete nutrition for fish larvae. Size range from 150 – 500 micron suitable for various fish larvae.

## MARKET POTENTIAL

Presently artemia cyst is imported from other countries which is very expensive. Thus, this local product have high potential to be commercialize, since it is more affordable and reliable. Present invention in a standard form that can be used directly from the package to the fish breeders.

TRL : 8 - Ready for operational evaluation



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