



# Blue Limit AS

The Larvae Feed Company

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## Blue Limit AS

- Based on R&D from Fiskeriforskning
- Dr. Anders Aksnes is CEO
- Dr. Nils Vogt Chairman based in Thailand.
- Ingredient & Process technology (Patent applied)
- #1) Shrimp Larvae Feed, #2) Sea Bass/Cod, #3) Shell
- Establish Operations in SA/SEA 2008
- Pilot production at FF today
- Financed by Sarsia Seed/Sarsia Innovation and IN/NFR (~3+ mnok)



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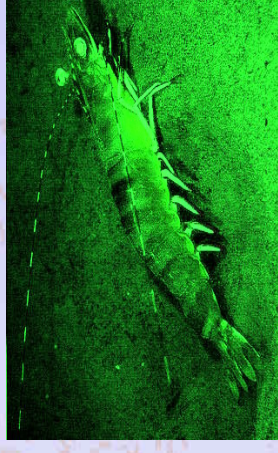
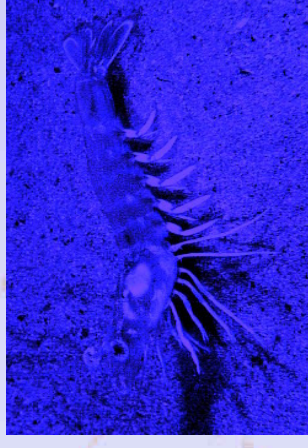
# Business Concept

- To supply:
    - A **unique** protected formulated industrially produced feed for Shrimp Larvae
    - Constant quality
    - Tailormade pr. species
    - Competitive price
    - Significantly improved yield & profit
  - Substitute Artemia in PL stages or in the whole ZoeiaII to PL 12/25 development
  - Expand in to:
    - Later stages, and
    - Special additives
 when proven for shrimp larvae.
  - Combining:
    - **Forefront** international R&D and technology development,
    - **Low-cost**, close-to-market and scaleable production capability,
    - **Relevant** market knowledge including a broad network,
    - **Realistic** project and development plan, and
    - **Demand** in the market place for industrial produced formulated ready-to-use feed in shrimp larvae production
- provides Blue Limit AS with a good opportunity to capture significant market position and revenue*



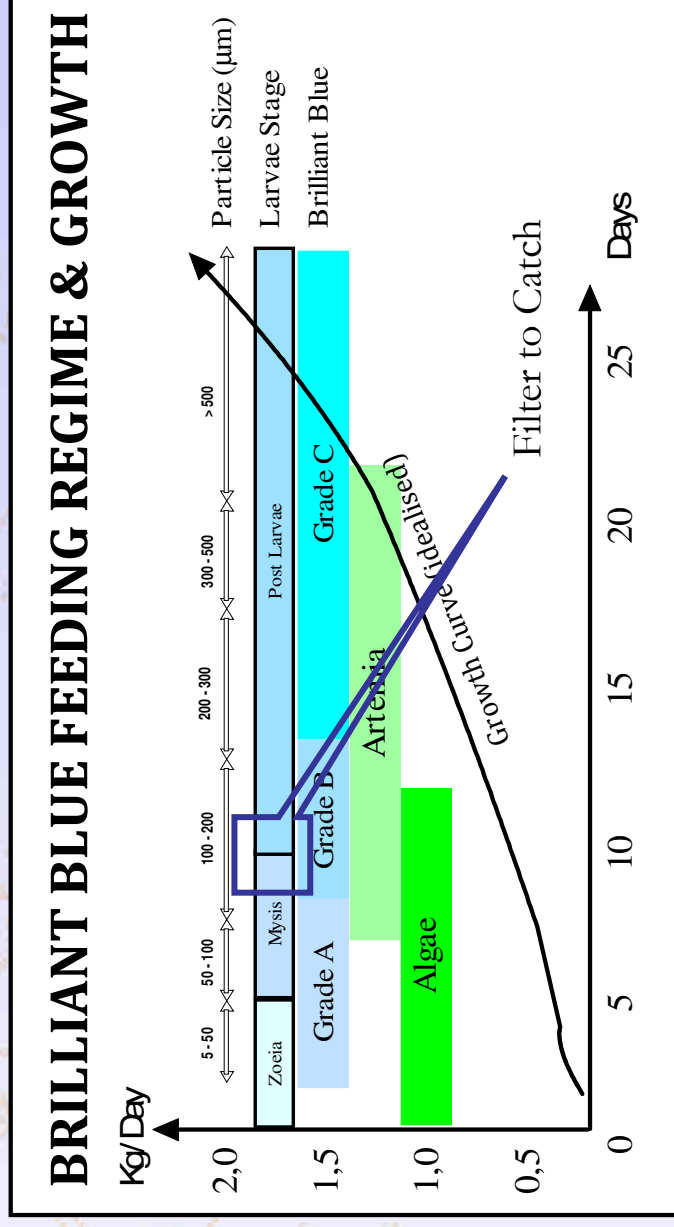
# The Product – Brilliant Blue

- Brilliant Blue is a unique combination of marine raw materials processed to provide a Shrimp Larvae Feed that:
  - Has optimal physical properties
    - Size Grades suited different Development Stage
    - Floats/Disperses – Sinks slowly
    - Optimal leakage
  - Has excellent feeding properties
    - Attracts and is Digested
  - Has exceptional nutritional composition
    - High on Lipids/Omega3 Lipids
    - High on essential Amino Acids
- And provides higher survival than standard diets and competitors.



# Feeding Schedule

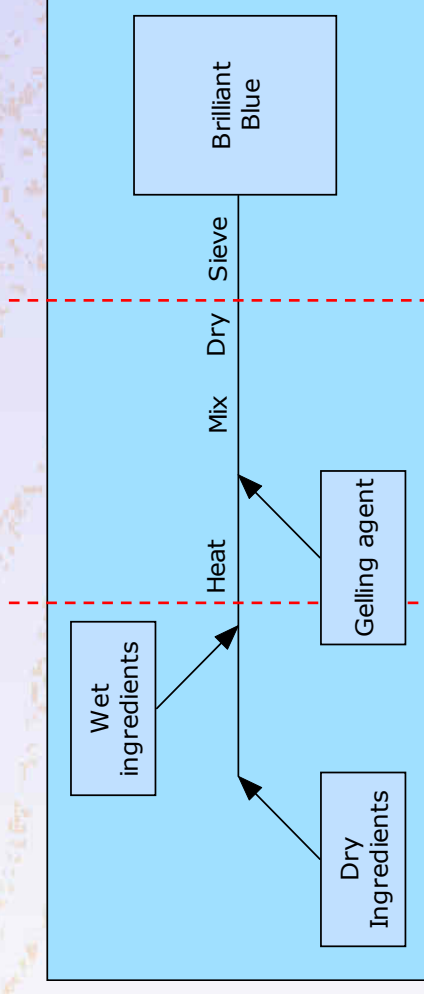
- The feeding schedule in most intensive and semi-intensive Hatcheries consists of combination of Algae, Artemia and Special Formulated Feeds.
- Special (formulated) Feeds are provided in size fractions ranging from  $\leq 50 \mu\text{m}$  to  $>400 \mu\text{m}$ .
- These are often mixed during critical stages as tank populations may develop with a lag.





# Product; Patent & Process

- Product in test phase
  - Testing in Sri Lanka, Thailand and Vietnam
  - Control is commercial diet
- Patent applied
- Product-by-Process (USA and EU)
- Production
  - (pilot scale <2.500 Kg/yr in place: plan to have >100.000 Kg/yr by 2009)



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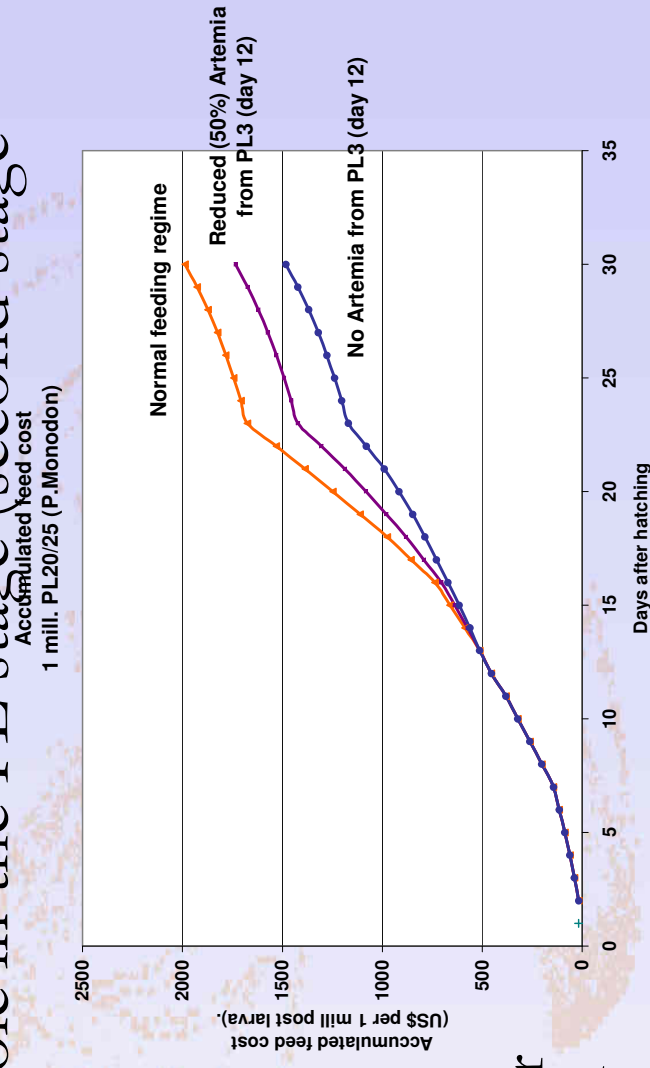
# Why use Brilliant Blue ?

- Brilliant Blue is priced to compete with the 'special feed' products
- Brilliant Blue is ultimately targeted to substitute Artemia in part or whole in the PL stage (second stage development)

- Our estimates suggest that a Shrimp Larvae Farmer can save:

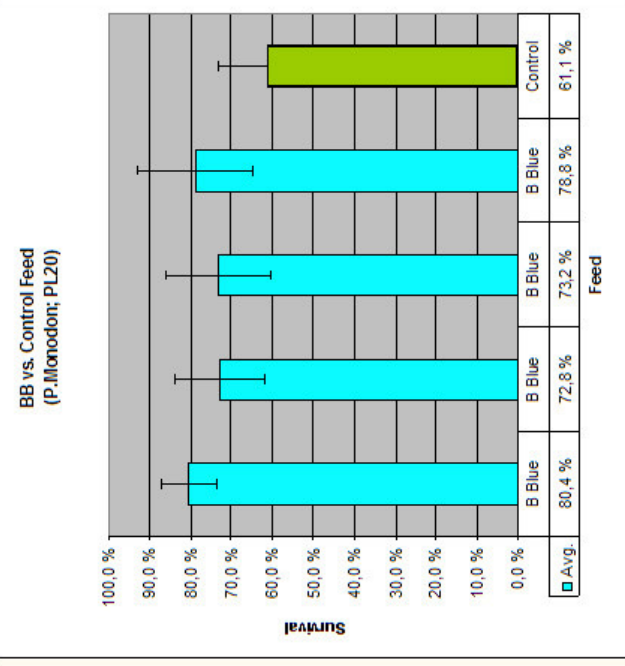
- **13-25%** on feed costs by substituting 50% or 100% of Artemia with Brilliant Blue

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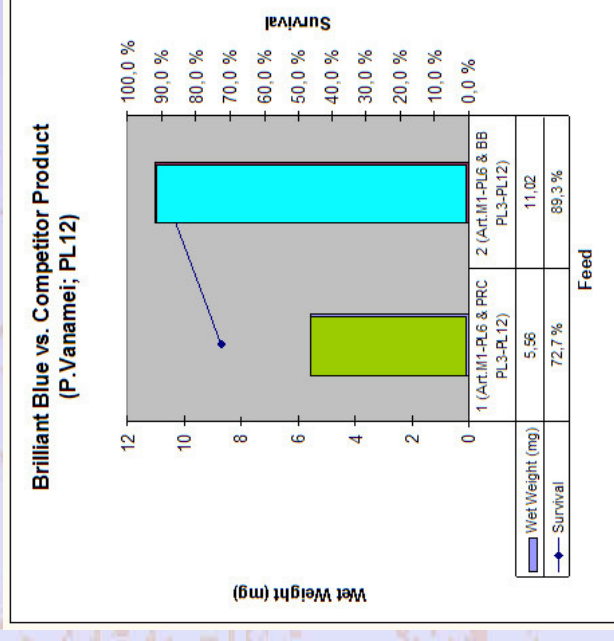
The above data are based on P.Monodon data from Sri Lanka.  
The IFU/IRD Project on Sri Lankais intended to test/document this opportunity/possibility.

# Results (so far)



Testing from ZoeiaII to PL5 with P. Monodon (3 replicates each in four parallels) compared to competitor.

**Survival ↑ 15-20%**  
**Weight ↑ 80%**

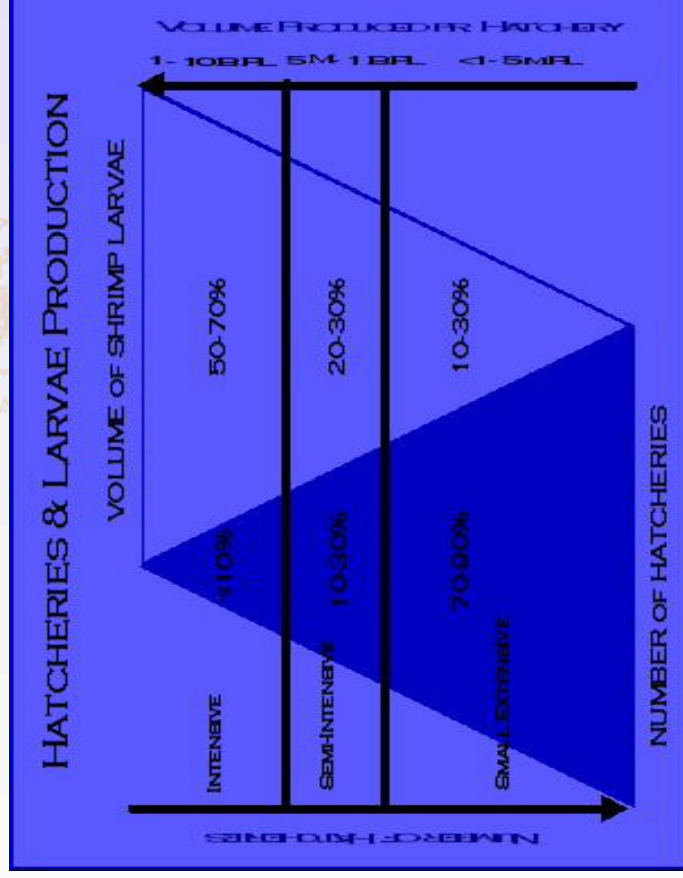


Testing from ZoeiaII to PL12 with P. Vanamei (3 replicates each) compared to competitor product.





# The Customers



Country[1]	Potential Volume tons	Number of Hatcheries
India[3]	103	300
Sri Lanka[4]	7	10
Bangla	41	2-300
Thailand	684	7-8.000
Philippines	137	<1.000
Indonesia	171	8-900
Malaysia	34	50-60
Vietnam	239	5-6.000
Sum	1 415	15-16.000

- The **Customers** for Blue Limit AS are Hatcheries.
  - The total number of Hatcheries is estimated at between 25-30.000 WW.
  - In each national market there are 5-10 leading (industrial) Hatcheries and 10-50 major (MS>50%) Hatcheries.



# The Market

- The Market for Blue Limit AS is in Asia, South-East Asia, East Asia and Middle and South America.
  - Total market size for Formulated Feed for Shrimp Larvae is estimated at app. 2.500 tons with a market sales value of USD 60-70 million.
- **Marketing** is made by a combination of
  - i) Approval documentation at recognised Institute,
  - ii) Testing & Reporting with reputable (lead) Hatcheries,
  - iii) Distributor network and Exhibitions incl. Promotions.
- **Sales & Distribution**
  - National Importers/Distributors will be Blue Limit AS customers in most (if not all) markets.
  - Distribution is made nationally by each individual Distributor



# Competitors & Prices

- **A number of international and national/local competitors.**
  - INVE, CP, etc. present in most/all markets with formulated Shrimp Larvae Feed
  - Mostly down-sized Grow-out feeds.
  - Very variable and not optimal composition and test results.
- **Prices**
  - Prices vary along the growth scale and between national markets.
  - Sri Lanka from \$45 to 35 pr .kg.
  - Thailand from \$38 to 22 pr. kg.
  - Vietnam from \$30 to 24 pr. kg.





# Test Facility

- Blue Limit AS has built a Test Facility to optimize, test and document Brilliant Blue.
  - Total costs NOK 320.000,-
  - Test Tanks (40 \* 500 L)
  - Laboratory (Microscopes, Weights, Drying, etc.)



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**Thank you for your attention!**

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