ATLANTIC SAPPHIRE

PRESENTATION

AQUACULTURE INNOVATION

Healthy fish and clean water in an environmentally sustainable production

ATLANTIC SAPPHIRE

INTRODUCTION

ATLANTIC SAPPHIRE overview

- Atlantic Sapphire was established in 2010 by Johan Andreassen, Bjørn-Vegard Løvik and Svein Sørvik.
- Key objective is to build up and develop large scale, sustainable landbased production of Atlantic salmon based on RAS (recycling) technology in the US.
- The technology has been proven for 20-25 years - and today more than 100 farms worldwide use RAS on different species.
- This will be the first project for commercial food fish farming of salmon – and has the whole value chain under one roof
- The first phase is to build up a pilot site in the Mid Atlantic or Mid West area.
- The second phase is to expand with 2 more sites within the US. Target annual production of 16.000 tons – equal to approx 7% of the US salmon consumption.
- The company will be vertically integrated from ”egg to plate”.
- Main shareholder Alsco AS, owned by Johan Andreassen and Bjørn-Vegard Løvik

Illustration of our RAS concept

Vision statement

- We shall be the leading company in developing the next generation of salmon production.
- We strongly commit to develop and utilize the best technology and knowledge to move the salmon industry into a more sustainable direction.
- Sustainability is the core value in all our activities.

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THE TEAM

Management team

THUE HOLM - CEO

- Former project coordinator at Billund Aquaculture (2004-2011).

Charles Garcia – VP and American CFO

- Consultant in foreign company startups in the US

GEIR INGE RØDSETH – Finiancial analysts

- Former CFO of Villa Organic (2006-2009)

BJØRN-VEGARD LØVIK – BIOLOGICAL MANAGER

- Founder and former COO of Villa Organic (1998-2009)

Board of Directors

JOHAN E ANDREASSEN - CHAIRMAN

- Founder and former CEO of Villa Organic (1998-2009)

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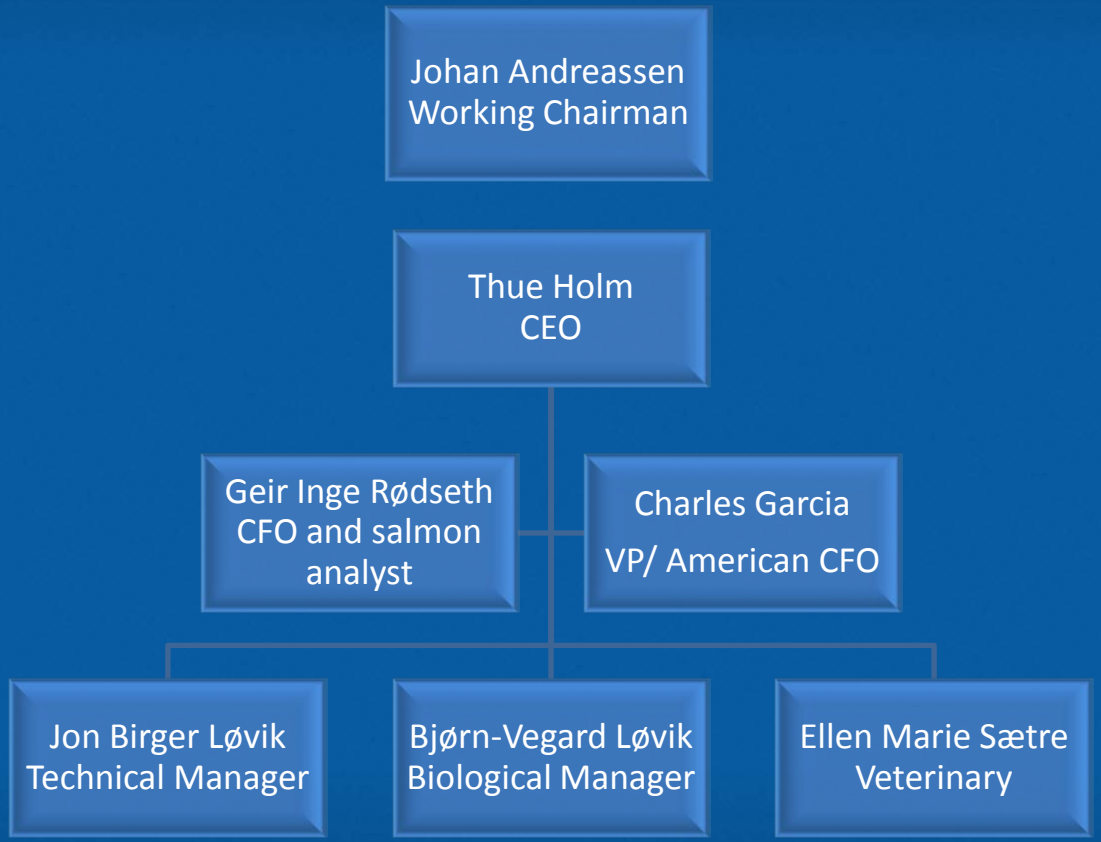

Johan Andreassen
Working Chairman
Thue Holm
CEO
Geir Inge Rødseth
CFO and salmon analyst
Charles Garcia
VP/ American CFO
Jon Birger Løvik
Technical Manager
Bjørn-Vegard Løvik
Biological Manager
Ellen Marie Sætre
Veterinary

THE STORY OF VILLA ORGANIC

Johan Andreassen and Bjørn-Vegard Løvik founded Villa Organic in 1995 at the age of 17 and 18 years

Andreassen and Løvik are pioneers in fisheries, sales and R&D of cleaner fish (wrasse). Cleaner fish is an environmental friendly solution of treating parasites (sea lice) in salmon farming.

In 1999 the company started cod farming and the year after with salmon farming.

After that the company grew rapidly through acquisitions and organic growth and become vertically integrated in 2005.

Andreassen held the CEO role and Løvik the COO role until 2009.

They sold their shares in Villa Organic in 2010.

Facts:

- 7th largest production capacity of Atlantic Salmon in Norway.
- 30 salmon licences – annual production capacity exceeds 30.000 metric tons.
- Norways largest producer of organic and best practice salmon
- Vertically ingegrated from egg to plate.
- Operates 15 off shore sites in two different counties of Norway
- 2010 revenues 525 mNOK (≈95 mUSD)
- 2010 EBIT 68 mNOK (≈12 mUSD)
- 100 shareholders
- Listed on the Oslo OTC-list (VILS.OTC)

THUE HOLM

Environmental biologist – RUC – Denmark

Has worked with recirculation technologies for 7 years in Billund Aquaculture, the world leading supplier of RAS systems. Holm is one of the world leading contributors to grow out of salmon in RAS . He has worked with RAS land based grow out salmon farming technology for more than 5 years – has been involved in 6 projects world wide sizing 1000 to 5000 ton/yr.

Aquaculture – has specifically developed the new intensive BA Biofilter design, the new low energy grow out biofilter design and all fish grading transport systems .

2004 to 2006 built up Billund Aquaculture Chile together with Marcelo Varela – In this period Holm was in charge of building the biggest RAS Smolt systems in the world and Holm and Varela took BA Chile form 2 employees in 2004 to 30 employees 2006.

2006 -2011 World wide project coordinator and part of the top management in Billund Aquaculture. In this period BA built the largest RAS fish farm in the world for Sturgeon in Moldova.

In 2010 made Langsand Laks project from scratch, and sole handed was able to get a government grant of 2 mil. USD and get investors with 3,5 mil. USD.

Billund Aquaculture system are known for their cost effectiveness, stability and is most profitable system in the world.

LANGSAND LAKS OVERVIEW

- Thue Holm formed the Project in start 2010 and teamed up with Preben Kristensen.
- Key objective is to build up and develop large scale, sustainable landbased production of Atlantic salmon based on RAS (recycling).
- The technology has been proven for 20-25 years - and today more than 100 farms worldwide use RAS on different species.
- This will be the first project for commercial food fish farming of salmon
- The first phase is to build up a 1000 ton/y.
- The second phase is to expand with 3000 ton/y over the next 5 years– equal to approx 0,4% of the worlds salmon consumption.
- Main shareholder are:

  Atlantic Sappire – Former organic Salmon farmers

  Polar Salmon – Salmon processor

  Aquapri – Trout farm

  Steensgaard holding – RAS eel farm and world leading supplier of RAS system

  Preben Kristensen – Trout and RAS eel farmer – our CEO

  Thue Holm and relatives – Project consultant (Vest fish consult ApS)

  The Strongest team for realizing the project - all investor contributes with know how

Illustration of our RAS concept

HIGHLIGHTS

- Increasing market focus on traceability and sustainability
- Significant first mover advantage
- World team
- Premium products with demonstrated high pricing potential
- Preferred production method by NGOs
- Long term agreements with vendors and customers
- Fit to compete with conventional farmed salmon
- Scalable concept

PROJECT MOTIVATION -

- Land based salmon farms with RAS projects has been projected all over the world especially in US and Chile, but none has been executed yet. Caused by slow project work, difficult financing and slow permissions granted.
- Varius test of the technolgy done in Chile shows extra ordinary good growth and fish survivial.
- Some the involved investors was to invest in an Brazilian project with a mayor player on the Brazilian salmon market, but very slow progress and pulled out of project.
- New projects has too be big projects with a minimum 2500 ton/y to get production cost and investment per of per year down.

PROJECT MOTIVATION PRE-CONCLUSIONS

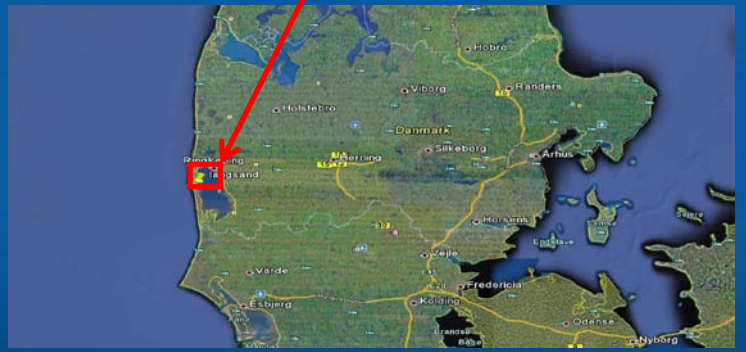
1. Project needed to be close to key persons in with know how.
2. Find a site with experienced fish farming knowhow.
3. Find a site where the investment would be as low as possible and with government subsidies for investment
4. Find a site where a smaller production could be profitable and with possible expansion in future
5. Find a site with local and national government dedication to fish farming and the technology.
6. Find a site with the environmental permission already granted
7. Find where production could start fast and get atvantege of high salmon price

PROJECT MOTIVATION CONCLUSIONS

1. Denmark was obvious due to high know how on RAS and fishfarm and key investors live here, and it is essential when new company like this is started.
2. Langsand Dambrug has worked with RAS technology on eels and production of big trout in sea water in over 10 years.
3. Due to excising infrastructure, committed technology provider and low building cost in Denmark in investment is lower than the other projects projected.
4. Due to the low investment and low cost focused personnel the production cost be kept down and in Hvide Sande the production can be expanded to 4000 ton/y.
5. The Ringkøbing and Skjern municipality is committed to develop aquaculture and Danish government is committed to develop the RAS technology
6. Langsand dambrug has permissions for the fish farming activities.
7. The eel farm has to be change slightly and it can produce fish while the grow system is build.

SITE

- The project is located by the Danish vest coast in the town of Hvide Sande.
- There is on site an recirculated eel farm with 140 ton of production and flow through trout farm 250 ton production.
- The eel farm is going to be used as hatchery and smolt production and can support a production of 4000 ton on site.
- The trout farm is go to be demolished and the salmon production will use the existing permits.
- Production will start March 2011



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PROJECT PRODUCTION OVERVIEW

- Production of 1000 ton/y Atlantic Salmon LW 4,5 kg
- Production in land based recirculated systems from egg to 4,5 kg salmon

- Lowest possible investment
  - Use of existing site and licenses
  - New equipment delivered at lowest possible price
  - Government grant of 1.400.000 Euro

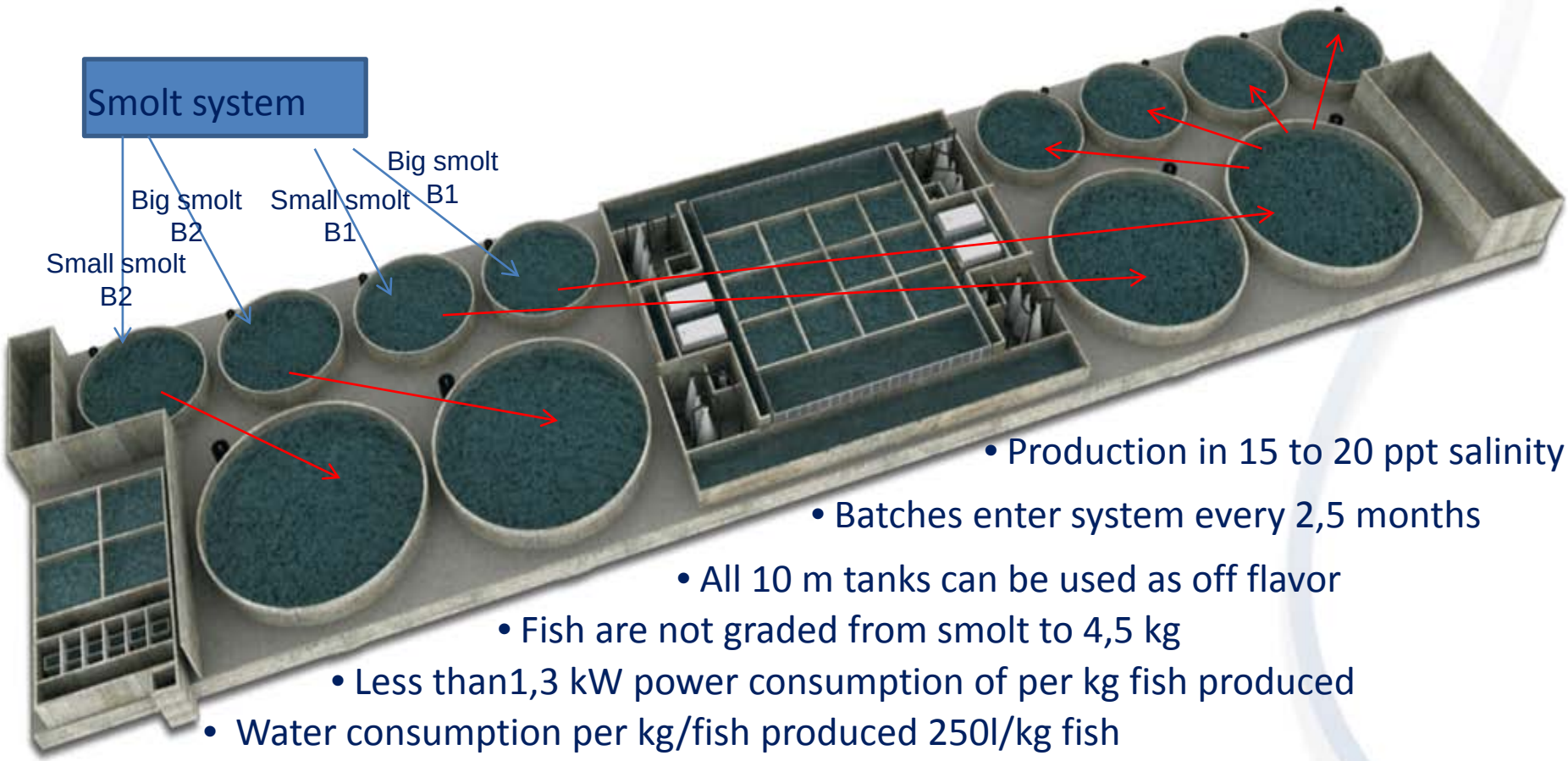
- Smallest economical feasible farm
  - To be expanded to 4000 ton/y in future
  - Production cost 3,1 Euro/kg Dressed Head-On Bled on ice ab. farm. -Including financial costs, depreciation and all other costs.

PROJECT FOCUS

- Low production cost
  - As few persons hired as possible
  - Benefit from investors infrastructure and know how
  - Low mortality – no diseases or parasites
  - Low power consumption
  - No use of antibiotics
  - Low FCR

Low production cost leads to sustainability

LANGSAND LAKS

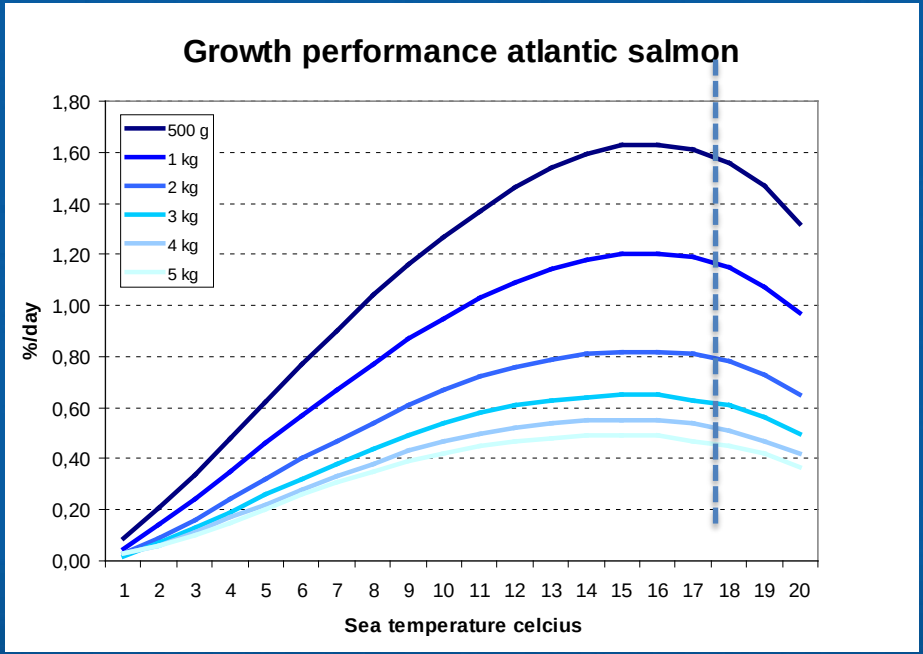


- Production in 15 to 20 ppt salinity
- Batches enter system every 2,5 months
- All 10 m tanks can be used as off flavor
- Fish are not graded from smolt to 4,5 kg
- Less than1,3 kW power consumption of per kg fish produced
- Water consumption per kg/fish produced 250l/kg fish
- Depending dispersion of the fish they can be hand graded before send to harvest tanks

OPTIMAL GROWTH PERFORMANCE

-13-16 degrees celcius

- No seasonal temperature variations, giving a considerable reduction of production time



Source: Skretting

Source:

PRODUCTION PLAN SMOLT

- The production is based on 5 batches a year.
- The production is of 125 g smolt

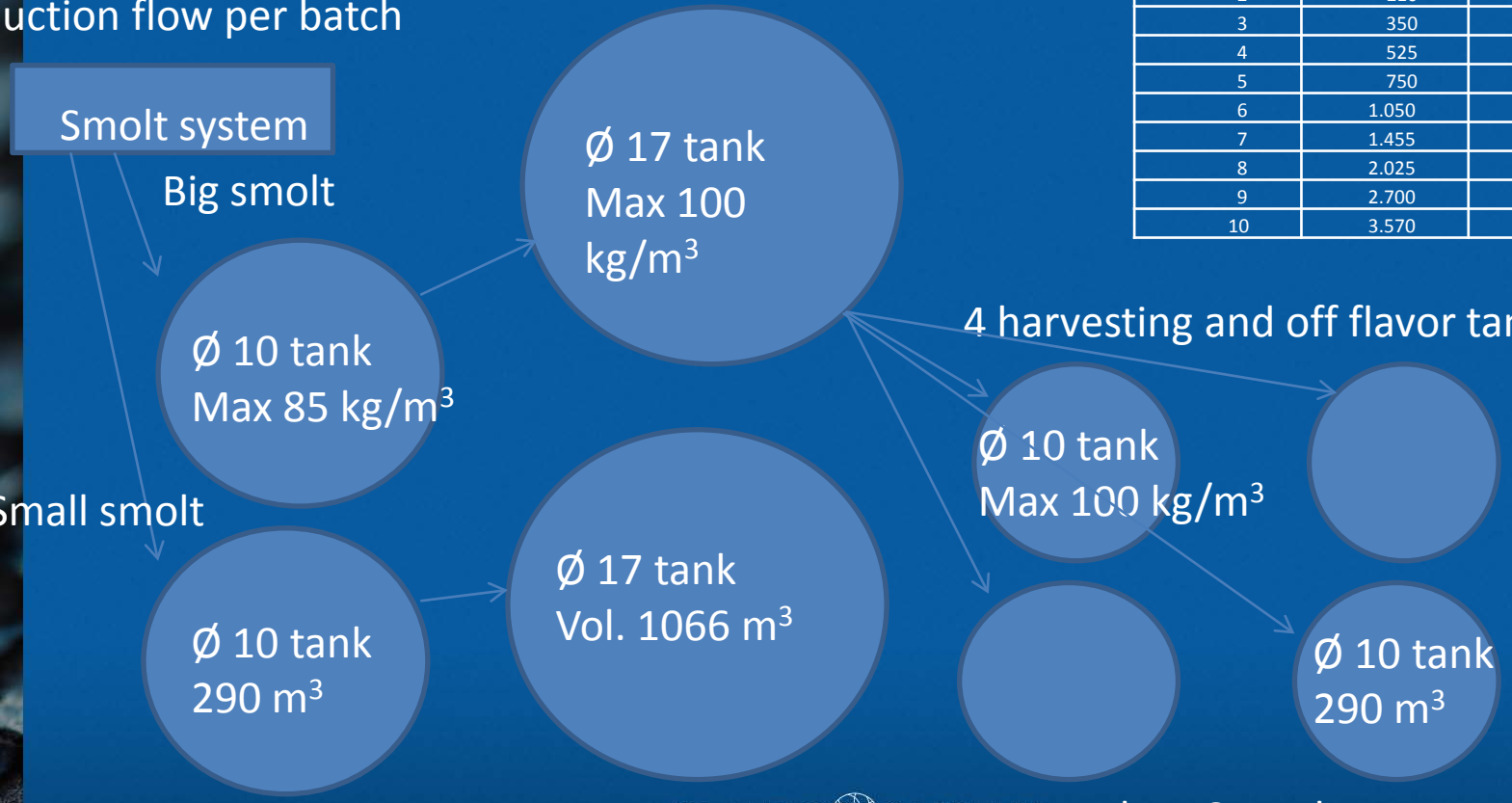
Biomass in tanks

	Eyed eggs	60000				
Wiegth g	Mortality		Bio mass	Vol.	Density	
2,00	10%	54000	108	6,4	15,4	1x 2m x 2m
14,01	9%	49140	688	25	27,5	2 x 4m x 4 m
58,43	2%	48157	2814	75	37,5	6 x 4m x 4 m
123,20	5%	45749	5636	140	40,3	7 x 5m x 5 m
						Surplus tanks
						6 x 4m x 4 m

PRODUCTION GROW OUT

Month	VI (g)	Vf (g)
1	123	210
2	210	350
3	350	525
4	525	750
5	750	1.050
6	1.050	1.455
7	1.455	2.025
8	2.025	2.700
9	2.700	3.570
10	3.570	4.530

Production flow per batch



PRODUCTION COST IN ROUGH NUMBERS

- Smolt of 125 g production cost with out personnel and other non production cost

Item	Price €	unit
Fry (including egg cost)	0,13	fish of 2,5 g
Feed	0,13	Smolt feed of 1,3 € /kg (FCR 0,8)
Oxygen liquid	0,02	Oxygen of 0,18 € /kg
Energy	0,14	kWh of 0,10 € /kg
Other items heating, water, chemicals etc.	0,05	
Total	0,47	125 g smolt

PRODUCTION COST IN ROUGH NUMBERS

- Production cost of a salmon of 4,5 kg

Item	Price €	unit
Smolt (including egg cost)	0,47	Fish of 125 g
Feed	5,25	Smolt feed of 1,15 € /kg (EFCR 1,05)
Oxygen liquid	0,31	Oxygen of 0,18 € /kg
Energy	0,71	kWh of 0,10 € /kg
Heating and cooling	0,11	kWh of 0,10 € /kg (heat pump)
Carbon soure	0,26	Alcohol of 0,4 € / liter
Ironchloride	0,06	0,54 € / liter
Polymers	0,2	2,68 € / liter
Sludge	0,09	13,5 € / ton
Base	0,08	Lime of 0,17 € /kg
Total	7,38	Fish of 4,5 kg
Price per kg live weight	1,65	

Thanks for the attention

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Thue Holm

Please follow the project on:
http://www.blog.langsandlaks.dk/#home

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