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GEORG

Green Geothermal Growth

Use of gethermal heat for warm water ecoculture

6 months status report 20. oktober 2011

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Islensk matorka ehf.

- Founded in February 2010
- Aquaculture stations in Fellsmuli and Galtarlækur in South Iceland in September 2010
- Changed from wild trout and salmon smolt production to production of Arctic charr and Nordic Tilapia

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Green circle

Remnants

Feed

Raw material

Effluent

Remnants

Raw material

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GEORG project objectives

- To utilize geothermal water and waste water from geothermal power plants to establish a whole new industry in warm-water aquaculture producing new competitive species for mass production and export
- The species often live at optimum temperatures of 28-30°C and can be cultured in polyculture systems which can further be integrated into sustainable healthy ecosystems including aquaponics, algae, fungi and single cell production

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Three subtasks

1. Development and design of polyculture with three warm water species
2. Integration of aquaponics
3. Production of mycoprotein

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1. Development and design of polyculture with three warm water species (1)

- Production in Fellsmuli:
  - Arctic charr
  - Nordic Tilapia

- Marketing in Iceland, Europe and USA

ARCTIC CHARR

NORDIC TILAPIA

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1. Development and design of polyculture with three warm water species (2)

- Import applications:
  - Tilapia brood stock from Canada
  - Tilapia brood stock from Fishgen in UK –
    - two different types – silver and red
    - both YY-all male stocks

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1. Development and design of polyculture with three warm water species (3)

- Vannamei

- Rosenbergii
- Tiger shrimp
- Lobster
- Barramundi

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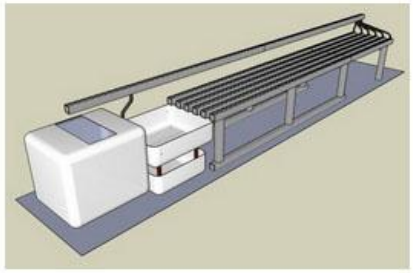
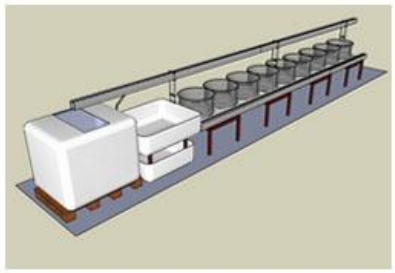
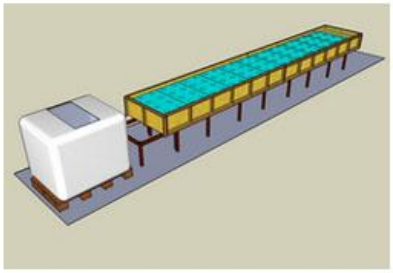
2. Integration of aquaponics

- Utilisation of effluents from aquaculture to hydroponic production
  - Nutrient film technique
  - Growbeds
  - Floating raft







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2. Integration of aquaponics (2)

- Pilot unit 270 m^2 – VENLO type
  - Basilica
  - Fresh water algae GE

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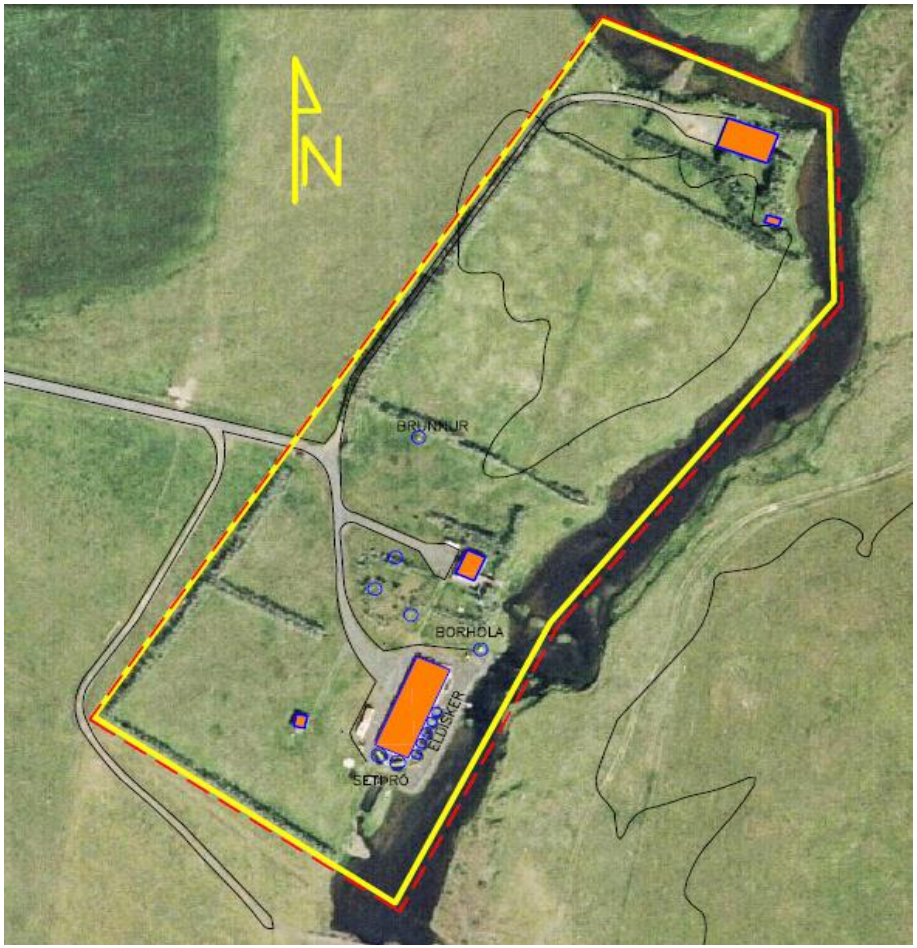
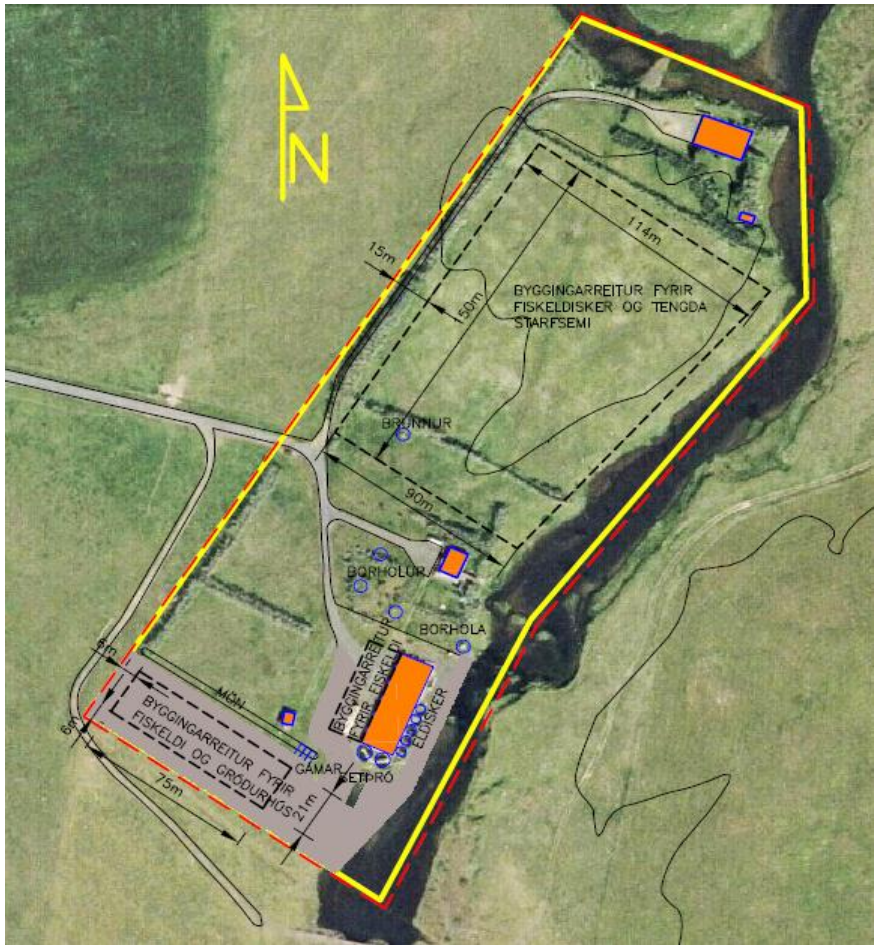
2. Integration of aquaponics (3)





2. Integration of aquaponics (3)

NETWORK – huge interest:

- Aquaponics A/S NO
- Institute of Global Food & Farming DK
- Alberta CA
- Aquaponics UK
- Tropenhaus CH

- Nordic projects in start-up
- European applications

- Matis
- Efla
- Green house producers
- Universities – 2 students working in summer 2011 on aquaponics, 2 on raceways and 2 on local feed – now 3 students are working on Matorka projects

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TROPENHAUS
WOLHUSEN


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3. Production of mycoprotein (1)

- Fusarium Venatum – funghi
  - High quality protein

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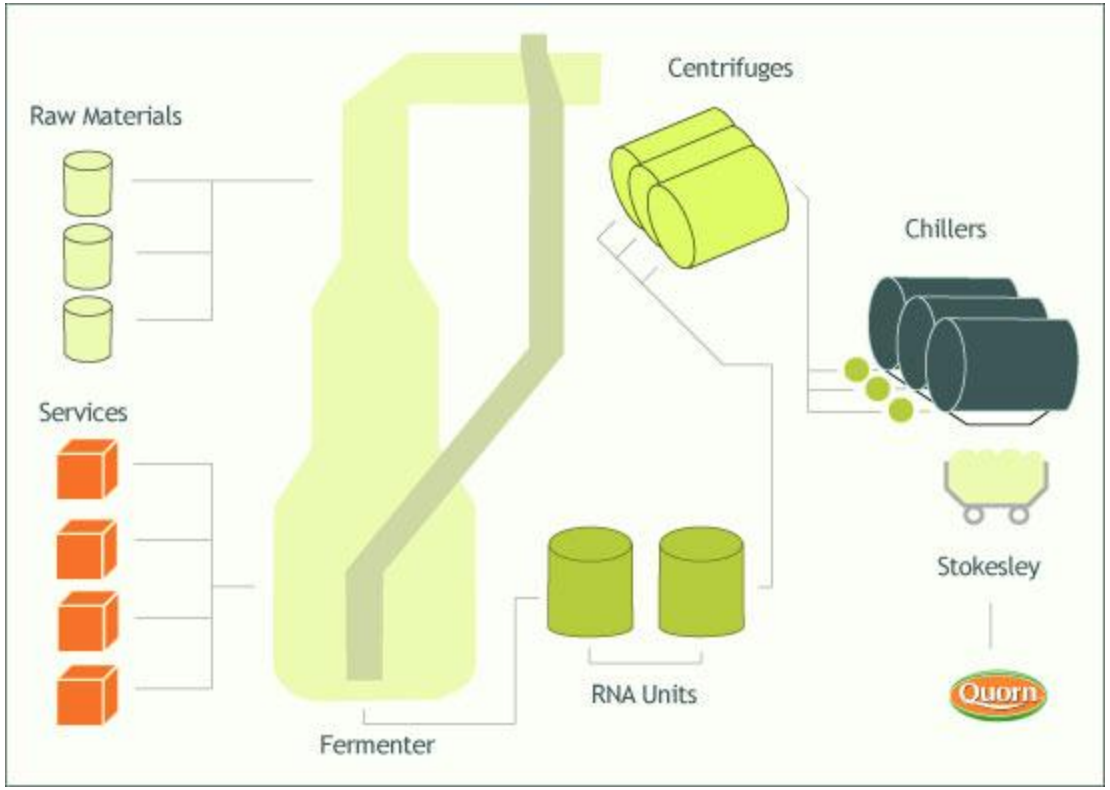
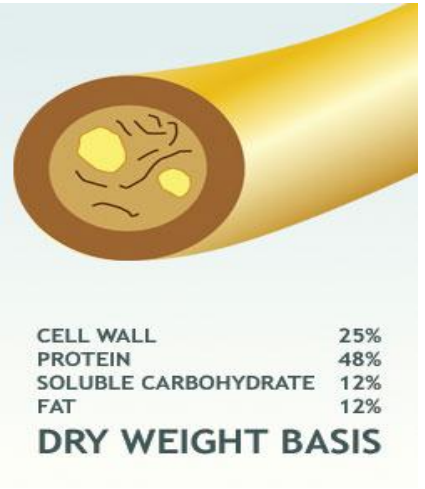
3. Production of mycoprotein (2)





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3. Production of mycoprotein (3)

- Business plan
- Import 2012
  - Partners
  - Licences
- Start-up pilot in collaboration with Matis ohf.
  - Food for vegetarians
    - Sustainable low carbon footprint production
  - High quality protein as feed raw material

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www.matorka.is