AgrAqua:
a micro-Spirulina farm in Flanders
AgrAqua

- Water purification / plantsystems from 1 to 1000 ie
- Algae culture

www.AgrAqua.com
AgrAqua: water purification
AgrAqua: water purification
2012: Algae culture in a greenhouse as a new businessmodel: realistic in Flanders?
AgrAqua: Algal culture

- Which algae to choose? We wanted an algae that:
  - Grows well
  - Is well known
  - Can be used in human food without legal restrictions
  - Is an added value to food (‘functional food’)
  - Grows in open ponds

=> Spirulina
AgrAqua: Algal culture

- More than 100 micro farms in France already
- In 2013 we build a pilot algae farm in a greenhouse
  - 2 open ponds
  - 100 m² each
- Businessmodel
  - Small algae farm
  - Efficient and automated
  - Convenience products with Spirulina
  - Local market
AgrAqua: starting up

Soon we found out that there were still a lot of challenges:

- Optimizing culture
- Monitoring & automation
- Recycling medium
- Efficient & cheap harvesting
- Energy-efficient & cheap drying
- Developping saleable products
- Developping market
- ...

AgrAqua: starting up

2013 (We still had everything to learn...)
- We build a pilot of \(2 \times 100 \text{ m}^2 + 10 \text{ m}^2\)
- Very basic and low budget

Testfase:
- Learning to know the algae
- Testing filters, dryer, ...
- Does Spirulina grow in Flanders as good as in France?
- Quality of the product?
- Production cost?
- Yield?
AgrAqua: starting up 2013

- labour cost/kg DM: 68%
- operating cost/kg DM: 12%
- management cost/kg DM: 8%
- depreciation/kg DM: 7%
- cost greenhouse/kg DM: 5%
AgrAqua: starting up

- 2013
  - Low investment cost
  - Very high labour cost / kg DM
  - Harvesting and drying needed: too many labour
AgrAqua: starting up

- 2014

- Challenges for this year:
  - Lowering labour cost (new filter for harvest & optimising drying)
  - Optimising yield (is heating & lighting profitable?)
  - Developping saleble products
  - Developping businessmodel
AgrAqua: starting up 2014
AgrAqua: starting up

2014

- Higher investment cost (automated filter)
- Higher energy cost (heating dryer)
- Harvesting and drying much more efficient
- A few interesting products in the pipeline
- Businessmodel for a micro farm and for a larger scale: work in progress (end of 2014)
AgrAqua: starting up

- **2015**
  - Challenges:
    - Optimising culture (monitoring & automation; heating & lighting)
    - Marketing products
AgrAqua: scaling up

- Longterm potential:
  - Food
  - Feed aquaculture
  - Colorant
  - Cosmetics
  - Pharmaceutics
  - ?
AgrAqua: aim (2220 m²)
Thanks for your attention!

www.AgrAqua.com