# Recap from a 10-year journey in the astaxanthin business

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# Historical context

- Algalíf started off as an innovation project in Norway that was bought by individuals with experience from the neutraceutical business that believed it could be developed to a profitable biotechnology company.
- Initial method development took place in Norway, but for several reasons Iceland was selected as a location for the commercial plant.
- The company relocated to Iceland in 2013 and the first phase of the plant was constructed.
- In 2014 Algalíf started commercially cultivating the microalgae *Haematococcus pluvialis* for the production of astaxanthin.

# The initial plant in Ásbrú, Reykjanesbær

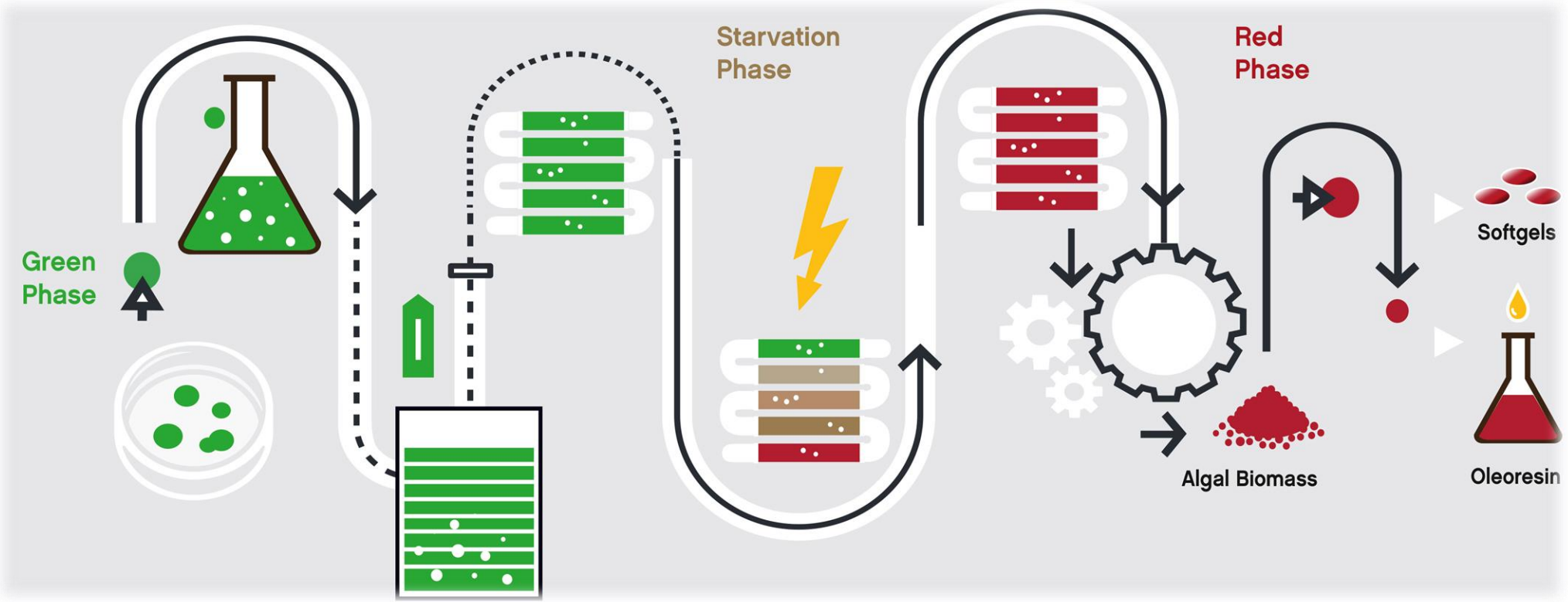
- Located in around 5 minutes driving distance from KEF International airport


Keflavíkurflugvöllur
Keflavík
Njarðvík
Vogar
Hafnir
Bláa Lónið
Grindavík
12km
SVEITARFÉLAGIÐ VOGAR
GRINDAVÍKURBÆR
REYKJANESBÆR
GRINDAVÍKURBÆR
Kálfatjörn
45
41
420
43
425
426
427
42
Google
Myndefni ©2024 TerraMetrics,Kortagögn ©2024 Google
Ísland
3D Earth útsýni er ekki í boði
Skilmálar
Persónuvernd
Senda ábendingu um vöru
2 km

# Astaxanthin

- Keto-carotenoid compound
- One of the strongest antioxidants in nature
- As a nutraceutical, it has a wide range of health benefits to human
  - Skin, eyes, joint health, cardivascular health, muscle recovery...
- Astaxanthin is a deep red colorant - it is responsible for the red/pink color of salmon meat
- Astaxanthin can be produced naturally and synthetically from petrol oils
  - Only naturally produced astaxanthin is accepted for human consumption
- In nature, the freshwater microalgae *Haematococcus pluvialis* is the organism that can produce astaxanthin in by far the highest concentrations
  - Exceeding 7% astaxanthin in dry weight biomass

# Production process of astaxanthin by Algalíf



# Why producing astaxanthin?

- Every kilogram of pure astaxanthin is worth 8.000 - 10.000 USD
- Market size of natural astaxanthin as neutraceutical is estimated to be around 35.000 kg in 2024
- Opportunities in feed markets
- Opportunities as colorant in human food
  - Note: Regulation barriers
- Opportunities in medicine development

# But why in Iceland?

- ❌ High salary costs
- ❌ Far away from markets
- ❌ Earthquakes, volcanos...

- ✅ Sustainable, green energy at very low prices
- ✅ Clean freshwater in abundance, free of charge
- ✅ Temperate, stable weather conditions
  - Cooling down facilities is easier
  - Less bio-burden, easier to keep cultures free of contamination

# Recap from a 10+ year journey

- 2013 - Relocation to Iceland
- 2014 - Production in Phase A
  - Annual production of around 400 kg pure astaxanthin
- 2018/2019 - Implementation of Phase B
  - Annual production of around 1.500 kg pure astaxanthin
- 2024 - Implementation of Phase C
  - Annual production of around 5.000 kg pure astaxanthin
  - Installation of critical CO2 extraction facility

# Phase C

# Recap from a 10+ year journey

=> What have we learned?

- You have to play to your strenghts.
- Focusing on cultivating one particular microalgae for production of one particular chemical compound is a good strategy... in the short term.
- Building up your own brand in a niche market that already exists... is very hard.
- When it comes to productivity of microalgae cultivation, the illumination is the most impactful factor.
- If you are cultivating a relatively slow-growing microalgae in photobioreactors under mild conditions, contamination is going to be your big challenge.
- Skilled and determined staff is the key to success.

# Thank you!

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