

Alpacas

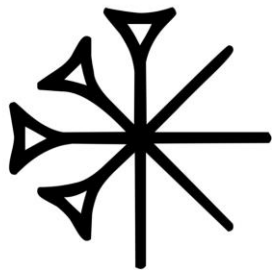
This project has been presented at ActInSpace
Hackathon in Cracow, 25-26 May 2018



Introduction



Hello!



Alpaca X-Force

*We are the **Alpacas***

We are a team of students that love to work on **crazy ideas** we come up with.

We are here because we want to help change the world, one tiny baby alpaca **step at a time**.



Alpaca Team



Jagoda Bobula

Team Leader

Neurobiology Student
"Neuronus" Student Association



Artur Jopek

Computer Science Student,
BIT Scientific Group Board Member,
Problem solving enthusiast



Marta Przyłęcka

Neurobiology Student, Student
Association of Cell Biology

Mariola Sebastian

iGEM Entrepreneurship Award. DLR
Astrobiology, Microsoft
Computational Biology

Jan Jedryszek

ESA Intern, Neurobiology Student, Analog
Astronaut LUNARES, Biohacker

Addressed Problem



Pesticides are evil because:

1. They are **expensive**
2. They **pollute** the environment
3. They are **unsustainable**
4. They **kill bees**
5. They cause algae blooms in the **Baltic sea** - they **kill fish**, create **Dead Zones**

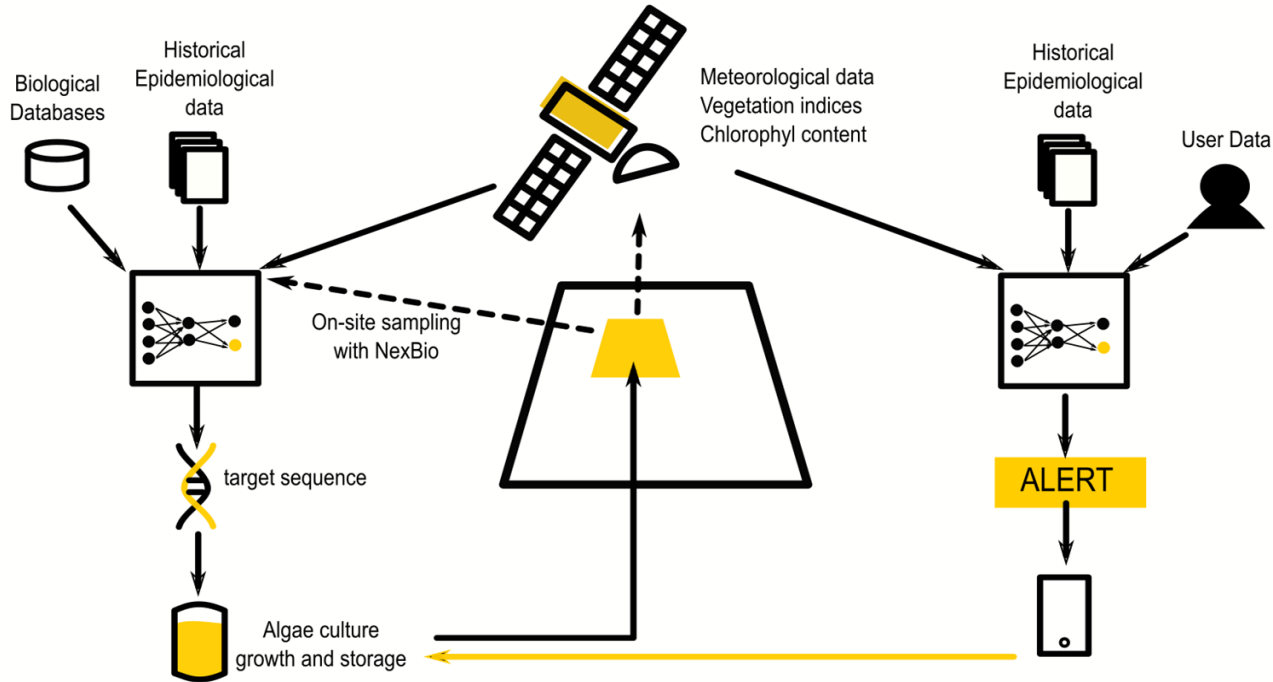
Solution

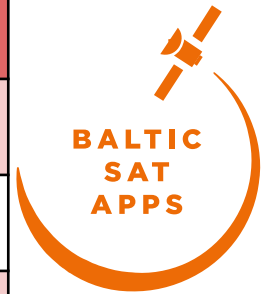


A novel, **personalized Bio-pesticide** with reduced environmental impact that can be delivered on demand to areas in need using **satellite data** to forecast and track insect pest incidence.

Monitoring

Response





ALPACA Algae	Pesticides
Cheap \$	Expensive \$\$\$\$
Uses Satellite Data for tailored product	Is literally poison shipped in bulk
Kills only targeted Pests	Kills Everything
Does not kill Bees	Kills EVERYTHING
Bio-foods	Contains dangerous pesticides
Eco-friendly	Destroys the Baltic Sea
Personalized for your needs	It's a poison to kill EVERYTHING
In accordance to EU Laws Qualifies for organic farming	Barely legal, heavily taxed in western europe

18,6 mln Ha

Area of arable lands in Poland (2015)



49,4 mld zł

Vegetable agricultural production (2015)

1,4 mln

Farms (2015)

Business Model



No Subscription	Gardner Subscription	Farmer Subscription
<ul style="list-style-type: none">• Free App• Danger alert	<ul style="list-style-type: none">• Free App• Danger alert	<ul style="list-style-type: none">• Free App• Danger alert
Proposed solutions based on satellite data	Proposed solutions based on satellite data	Proposed solutions based on satellite data
The customer orders (or doesn't) personalized product	<ul style="list-style-type: none">• The customer pays for the subscription time• The product is delivered	<ul style="list-style-type: none">• The customer pays for the subscription time• The product is delivered

LG III

SHOW ON MAP

- Image
- Vegetation
- RGB image

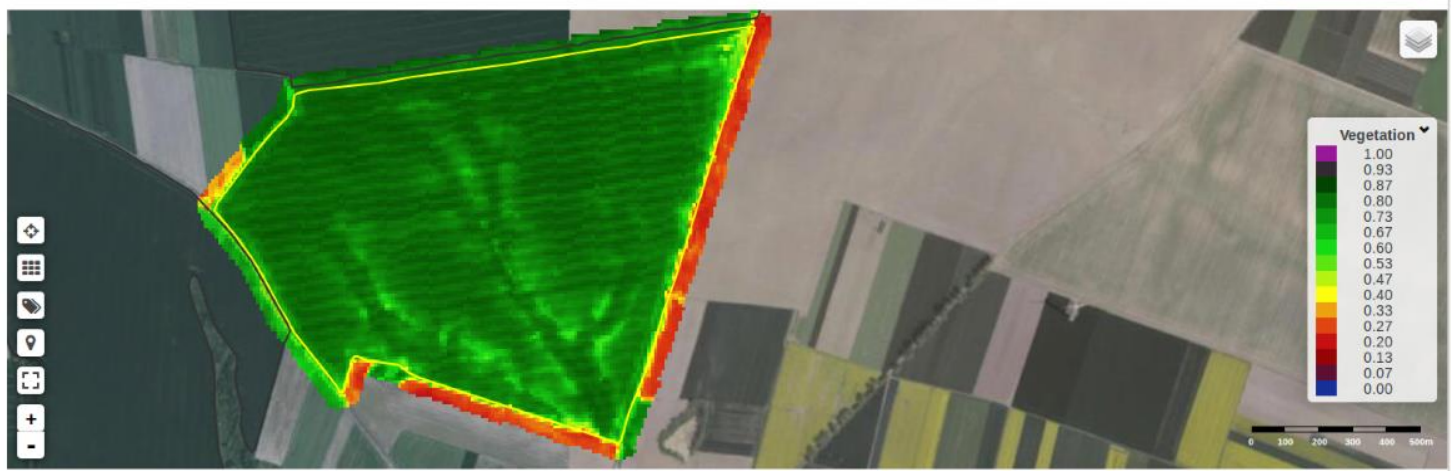
CHOOSE DATE

- 13-05-2018
- Landsat
 - RapidEye
 - SPOT6
 - Sentinel2

Create application map

compare

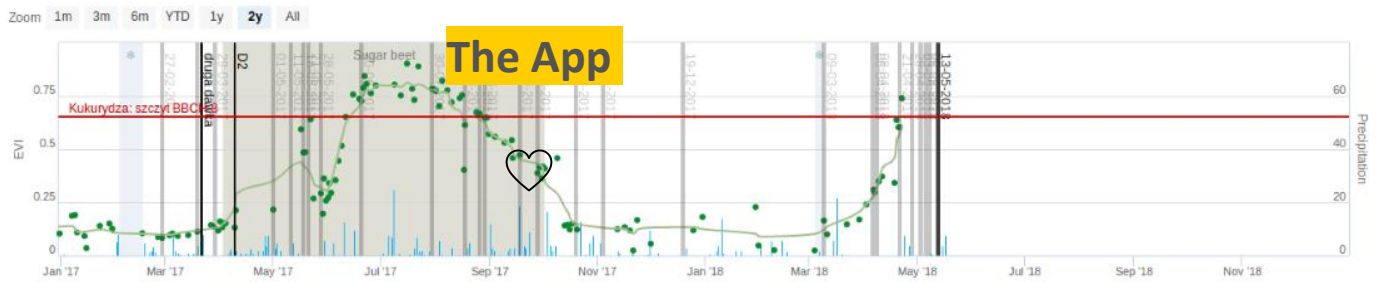
Show field sheet



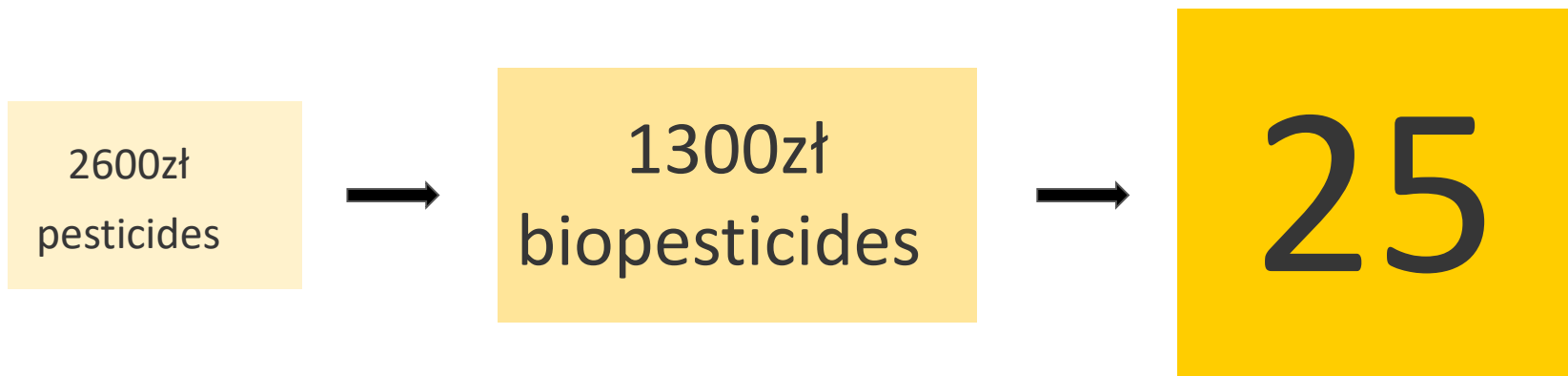
SHOW ON CHART

ADDITIONAL DATA Crop types Snow Alarms Events

- Vegetation (EVI)
- Precipitation cumulative
- Temperature
- Growing Degree Days (GDD)
- Crop based GDD
- Precipitation



Probability



Break-even point reached in ~5 years

The Product - Step by step



1. DNA synthesized and stored in Algae
2. **Satellite Data**, Genetic Data, Epidemiological Data, Etological Data **collected**
3. Machine learning algorithm - **data interpretation**
4. Risk areas assessed and Alert sent to **client**
5. Product shipped to client automatically or by client request
6. Product can be utilized by standard pesticide spraying methods
7. Genetic Data collected and used to improve next product - **a personalized healthcare platform for your crops**

Contact

You can contact us at

📧 alpaca.x.force@gmail.com





Thank you!

