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Artificial Intelligence in reducing plant protection chemicals

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Ribes Tech

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Problem with pesticides

Every year, more than **300 mln kg** of pesticides are applied in European agriculture. They enter the environment, destroying the rich **biodiversity of our soil**, **polluting rivers** across Europe and causing a sharp **decline in numbers of pollinators**.

They also end up in the food we consume. Fruit samples were detected with more than **28 different types** of residues.

European Union

European Union recognises the problem with pesticides.
Thus, it set a goal to **reduce use of chemical pesticides** by 2030 by

50%

European Green Deal

[2022/1096/COD]

It means the market will face new regulations - and as a consequence, fines.
On the other hand, innovations that will help to reach this goal will be supported by the public funds.

Product vision

Autonomous protection of berry plantations, spraying only identified infected bushes.

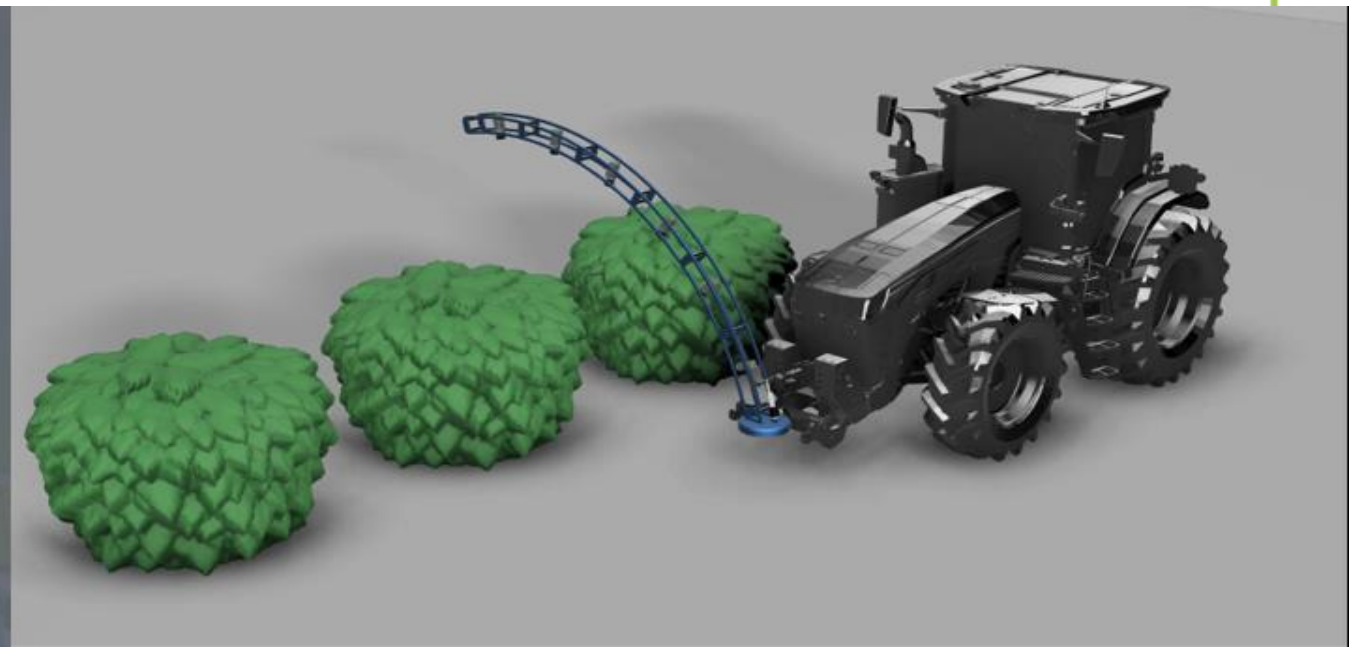
Ribes Technologies

Owners of berry plantations

(blackcurrants, grapes, raspberries, etc.)

50% of the estimated savings made by our service + monthly maintenance fee

Vision Module



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How does it work?

1. Plant observation

Multispectral cameras attached to a tractor observe plants and their leafs, creating a live feed of photos.

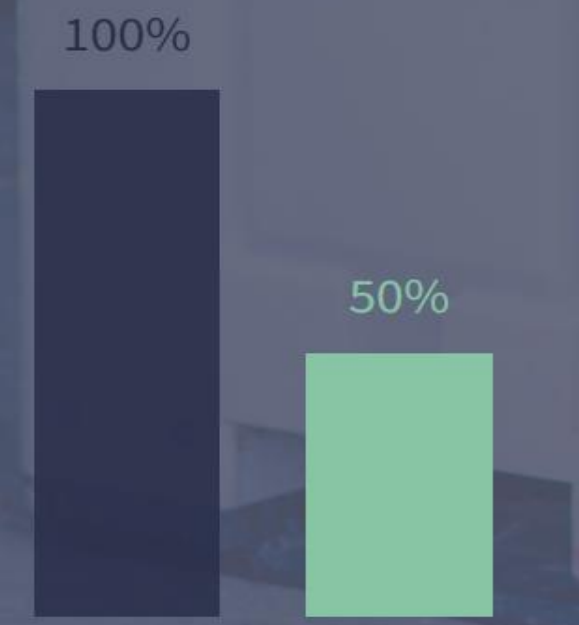
2. Disease recognition

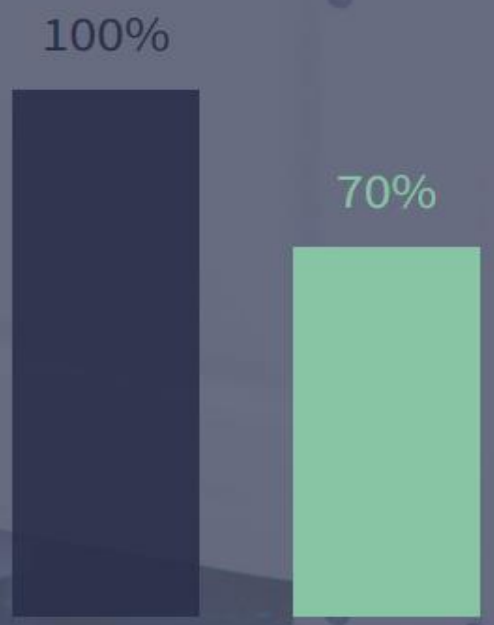
Photos are processed by a trained machine learning algorithm and infected (insects, funguses) bushes are identified.

3. Conditional spraying

When infected bush is identified, only endangered part of the plantations is sprayed.

We reduce plantation's dependence on pesticides.





- Profitability
- Environment degradation
- Quality
- End-customer satisfaction
- Traceability

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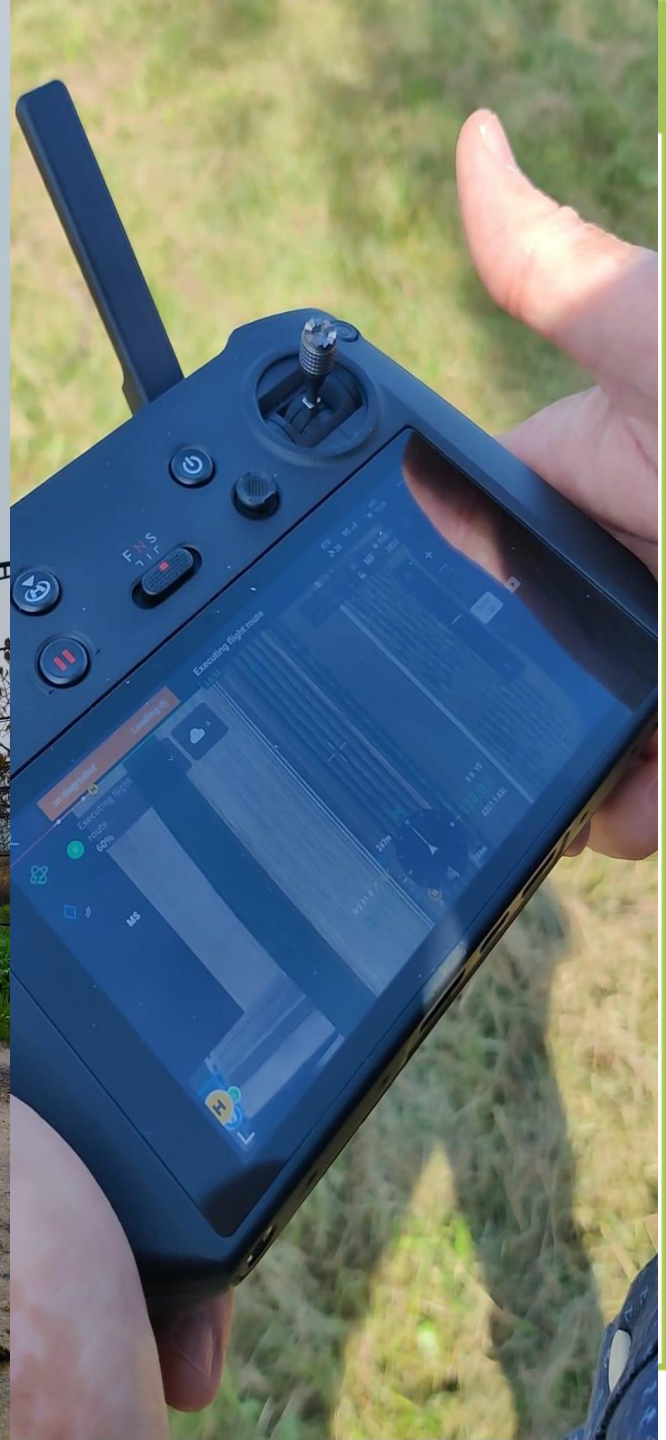

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Project Goal:

"Development and implementation of technology for automatic identification of pests on currant plantations and spot spraying with a selective preparation, which translates into lower saturation of currant fruits with plant protection products harmful to health."

SIEĆ NA RZECZ INNOWACJI W ROLNICTWIE I NA OBSZARACH WIEJSKICH

Krajowa Sieć Obszarów Wiejskich

Program Rozwoju Obszarów Wiejskich na lata 2014-2020

Partnerships and advisors

In our development, we are supported by various institutions and advisors. The most significant cooperation we have established so far, is founding a Consortium to apply for a public grant. It shows that our project is valued and we are considered as a trustworthy partner.

Consortium partners

Cracow University of Technology

Agroekoton
agroekoton.pl

Agriculture Advisory Center
lodr.konskowola.pl

Advisors

Joanna Ortyl, Prof. PhD, DSc., Eng.
Academic advisor - photochemistry

Mirosław Korzeniowski, PhD
President of the board of Agroekoton, expert in agriculture innovations.

Remigiusz Kinas
Image processing & ML expert

#1. Conclusion

Technological solutions of agriculture 3.0, 4.0 and agriculture 5.0 provide the best support for the development of business models in fruit production.

#2. Conclusion

The Green Deal is an example of a situation where legal regulations are ahead of reality and technological solutions available for agriculture (legislation is ahead of technology)

#3. Conclusion

Agriculture technologies 4.0 and 5.0 are currently best co-created with the help of EU funds rather than expecting ready-made solutions

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Our vision

Autonomous, electrically powered platform, automatically applying selective pesticides.

Creating the future of sustainable, precision agriculture.

Contact us!

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Thank you for your attention