



Euroopa Maaelu Arengu  
Põllumajandusfond:  
Euroopa investeeringud  
maapiirkondadesse

Internal

# Lantmännen BioAgri –

Environment Value Creation Through the Example of ThermoSeed of the Swedish Cooperative Lantmännen

10/06/2022

 **Lantmännen**

# Agenda

- Short presentation of Lantmännen BioAgri and Anders Krafft
- Presentation of Lantmännen
- Lantmännen work with sustainability
- Lantmännens work in research and development
- Thermosteed
- History, function and outcome
- Summary



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# Lantmännen BioAgri

- CEO Anders Krafft
- Fully owned daughter company of Lantmännen Lantbruk
- 12 employees
- Sales/marketing, production lab and R&D company



# BioAgri's core business

**Seed technology**  
ThermoSeed®



**Seed treatment**  
Cedomon®Cerall®Cedress®

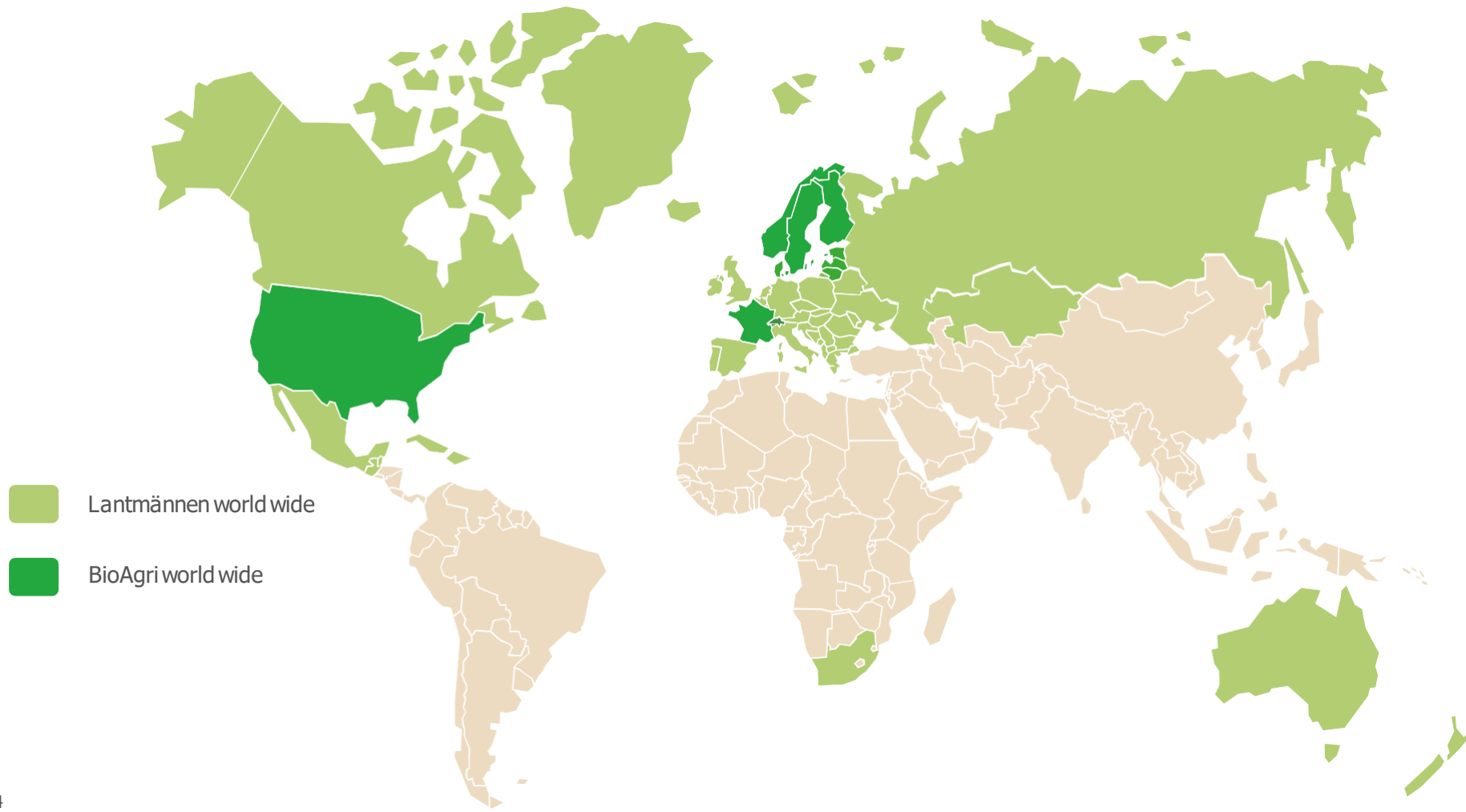
**Biostimulants**  
eg Stimplex®Resid®



**Research projects**



# BioAgri world wide



# BioAgri is a part of Lantmännen

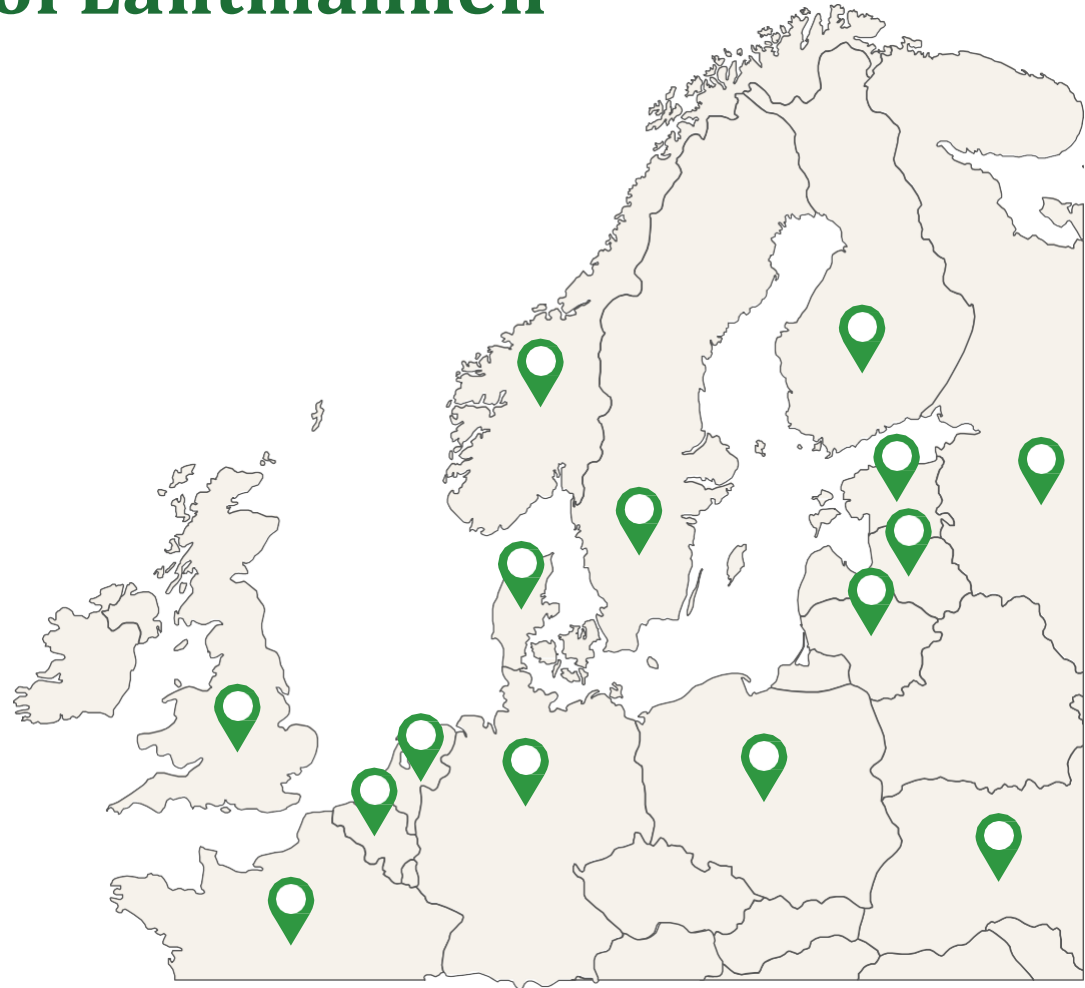
- Lantmännen is an agricultural cooperative and Northern Europe's leading player in agriculture, machinery, bioenergy and food.
- We are owned by 19 000 farmers, have 10 000 employees, operations in some 20 countries, and an annual turnover of SEK 45 billion.



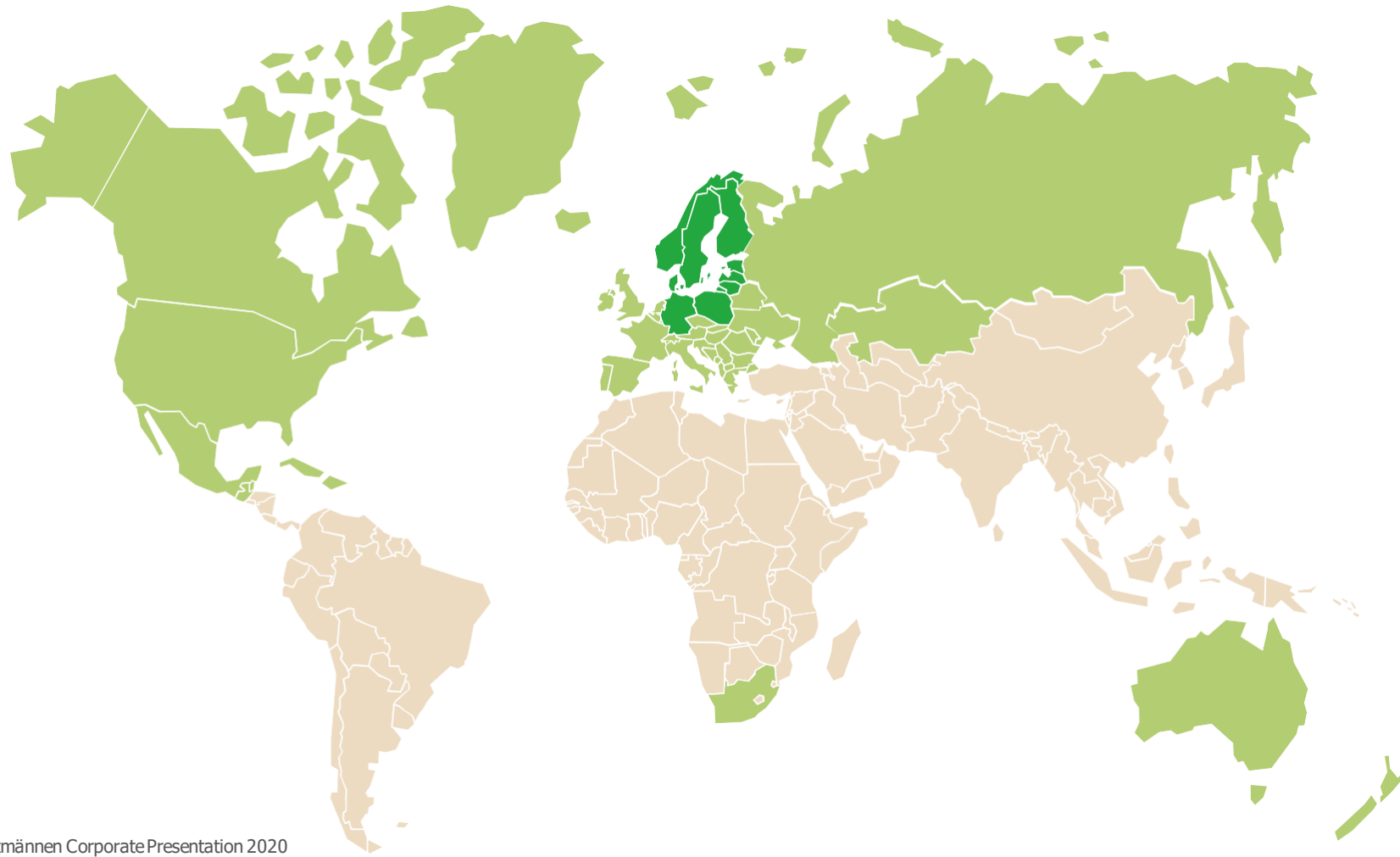
Chairman of the Board:  
**Per Lindahl**




Group President and CEO:  
**Magnus Kagevik**



# Lantmännen operate on a worldwide market





” Lantmännen's assignment is to contribute to the profitability of our members' farms and to optimize the return on their capital in Lantmännen

# Vision for World-Class in 'Field to Fork 2030'


The world's leading farmers' cooperative: a world-class company and the leading player in the grain value chain from field to fork in Northern Europe

**FIELD TO FORK**  
**2030**

- Contribute to **world-class Swedish farming** by strengthening the competitiveness and profitability of members' farms
- Achieve **top-quartile profitability** in all industrial operations
- Lead and accelerate the development of **sustainable solutions** from field to fork
- Strengthen the attitude towards and trust in the **Lantmännen brand**
- Be the **most attractive employer** in our sectors
- Be the **most innovative company** in our sectors
- Lead and accelerate the development of **digital solutions** from field to fork







**Our owners are the foundation  
and the key to our brand. We live  
off the earth, and the farmland  
is the basis for everything we  
produce, and the core in  
everything we do.**

# Lantmännen's Business Portfolio Creates Value from the Farmland with the Farmer at the Center



Lantmännen provides products and services to farmers

Lantmännen creates value from the farmland

Profitable and growing portfolio holdings



# The Lantmännen Model

## Lantmännen is not an ordinary company.

We are owned by 19,000 Swedish farmers with the assignment to contribute to the profitability of their farms and optimize the return on their capital in the association.

- Lantmännen is a farmer's cooperative that operates both locally and in an international market
- Lantmännen is a business partner of the farmers
- Lantmännen conducts research and innovation for the food of the future and the bioenergy and farming of tomorrow
- With farmland as our basis, Lantmännen creates value throughout the entire value chain from field to fork



# We live our responsibility



- **Lantmännen's Code of Conduct** applies to all employees.
- **The Supplier Code of Conduct** applies to all suppliers and is part of the contract process. A **Distributor Code of Conduct** applies to all distributors and is part of the contract process.
- Consistent follow-up by management and in the **Annual and Sustainability Report**



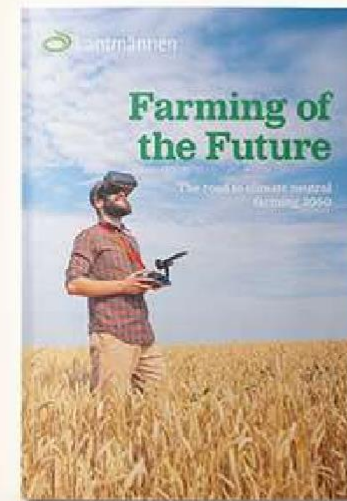
# Farming of the future – the way to climate-neutral agriculture in 2050

The nutrition and the most important value is created in the cultivation step. That means that most of the resources are consumed – and that most of the environmental impact arises, during cultivation.

- Swedish farming is considered to be among the most sustainable in the world.
- Even so, many challenges remain, such as reducing the climate impact, increasing environmental benefits and safeguarding biodiversity.
- At the same time, production needs to increase in order to meet growing demand for food and bio-based raw materials.

Lantmännen has identified areas that are critical to sustainable Swedish farming by 2050. Lantmännen's **Farming of the Future** shows the development towards increased production and decreased climate- and environmental impact.

Lantmännen Corporate Presentation 2020



# Examples of investments from Lantmännen for Farming of the future

Farming of the future requires **cooperation, extensive research activity, market demand** and **political will and drive**. Lantmännen's role is to drive and develop conditions for an economic and environmentally sustainable Swedish farming.



- **100 MSEK/annually is invested in new varieties**
  - Plant breed increases resource efficiency by about 1 percent per year
- **LM<sup>2</sup> and Dataväxt**
  - Advisory services, digitalization and precision farming.
- **Chemical-free seed treatment**
  - ThermoSeed and Cedomon/Cerall
- **Fossil free mineral fertilizer**
  - Partnership with Yara for a fossil free food value chain

- **Renewable fuels**
  - Rest products is used in production of sustainable fuels
  - Introduction of renewable fuels in farming

- **Feed with up to 30 percent lower climate impact**
  - Contributes to a more sustainable production of livestock

- **Continuous focus on the value chain for livestock**
  - Increased production and reduced climate and environmental impact is mapped



# And we are researching for the future

Lantmännen's knowledge and operations at every stage represent an opportunity to drive and contribute to development in the grain value chain.

We invest SEK 250-350 million annually in research and development to resolve the challenges of today and the future, and to make farming thrive.

## Lantmännen's Research Foundation

is our own foundation, which invests in external research at universities, colleges and institutes.



LANTMÄNNEN  
RESEARCH FOUNDATION

## Examples of current research projects

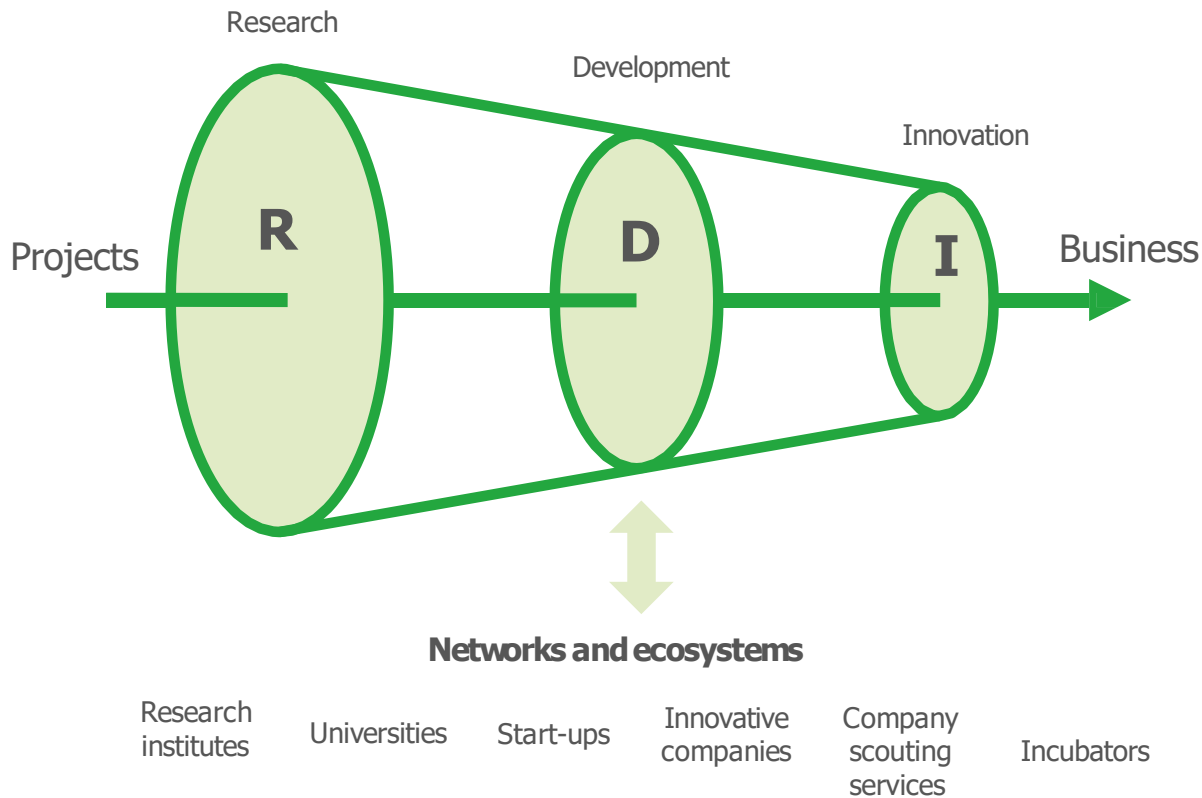
- Mapping of the oat genome
- Better bread quality and fractionation of grain
- Improved precision farming
- Develop Quicktest to improve Thermosteem
- Method evaluation for Biostimulants with BioAgri



Lantmännen Greenhouse won the food industry award "Livsmedelspriset 2019"

# Our goal with our innovation activities:

*To accelerate innovation to become the most innovative company in our industry!*

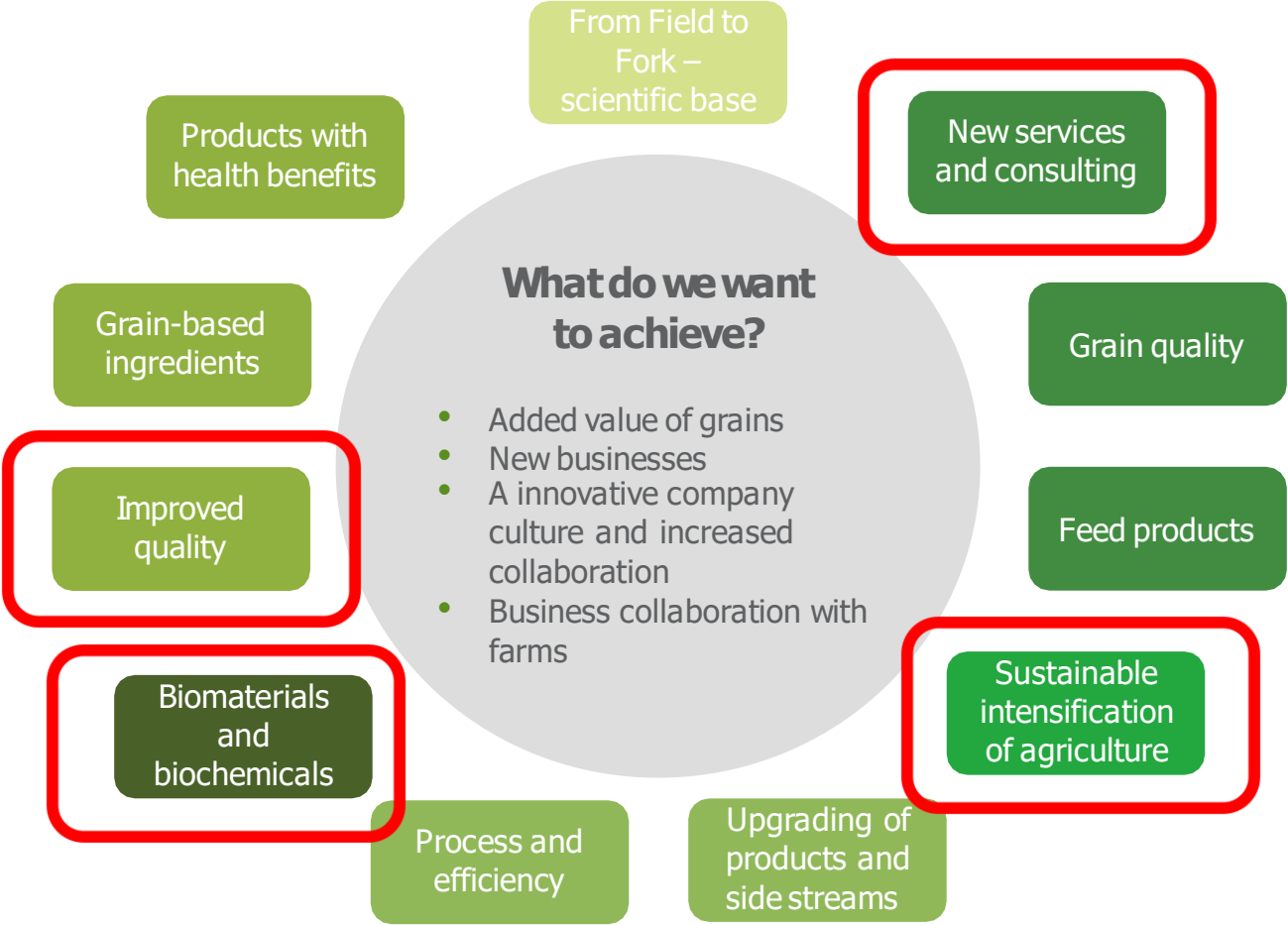


1. **Continue to build our innovation capabilities and culture** to step up innovation in our grain value chain together with internal and external stakeholders.
2. **Drive the assessment and prioritization** of research knowledge and innovative business ideas.
3. **Lead the conversion of research knowledge and innovative business ideas into profitable businesses.**





# R&D Focus Areas



# A selection of innovations from Lantmännen

Beans



Swedish grown beans  
and bean pasta

BioAgri



Developing products for  
control and growth  
regulation using  
microorganisms

Oats



Develop and create added  
value from grain in the entire  
chain from field to fork.

Cgrain



innovative analytical  
instruments for grain  
analysis



# ThermoSeed

11/28/2021



Lantmännen

# The history of Thermoseed invention

- **Research at Swedish Agricultural university 1996-2002**
  - Objective: Development of an environmentally friendly and cost-effective method for the protection of organic cereal seed.
  - Lantmännen partner/owner from 2001
- **Commercial launch by Lantmännen BioAgri**
  - First large-scale machine installed in Sweden in 2005
  - Numerous lab tests and field trials all over the world
  - Large scale commercial use in conventional cereal seed
  - Ongoing research in field crops, vegetables and specialty crops



# The Innovation - Thermoseed®

- A unique innovative seed treatment for effective control of seed-borne pathogens by the use of hot humid air
- For highly productive and sustainable agriculture
- Effective control of seed-borne pathogens without chemicals
- Proven effectiveness on large scale commercial level and confirmed by numerous official trial results
- Profitable

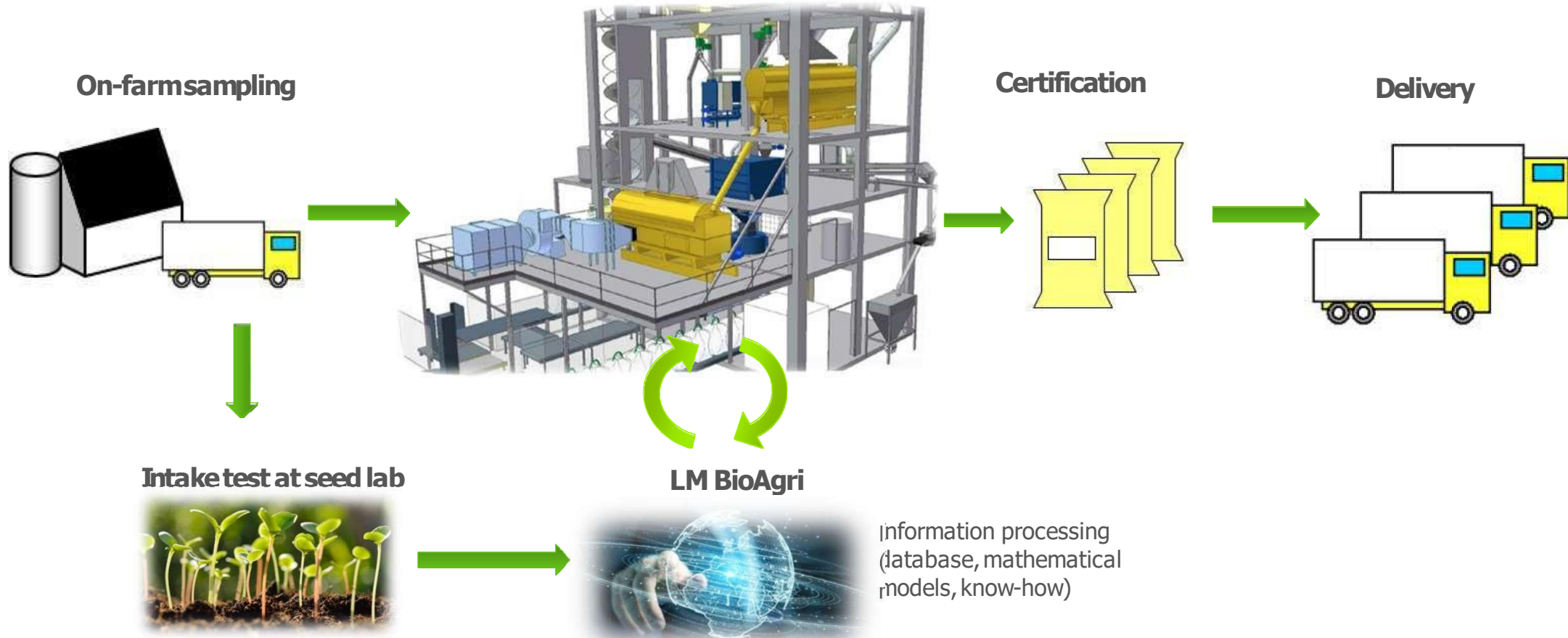


# The main elements of ThermoSeed®

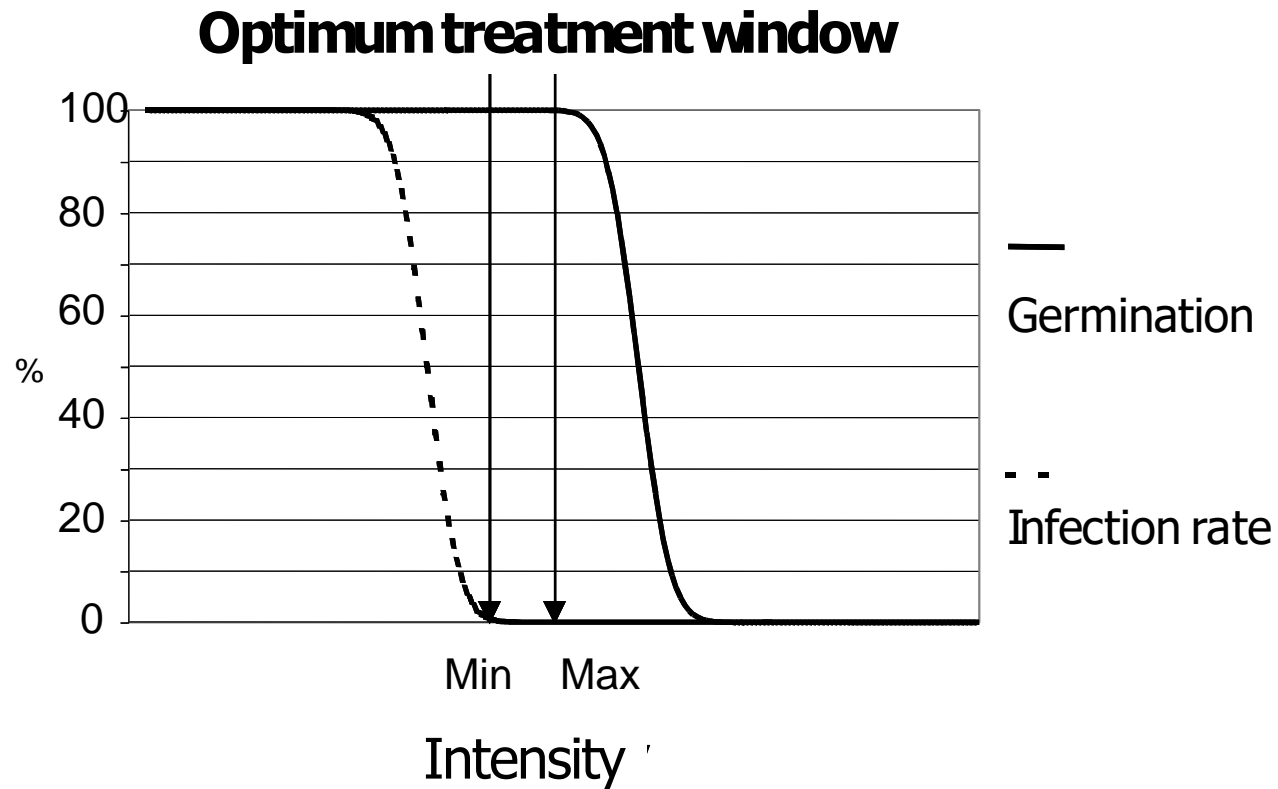
- Each seed lot is unique and must be treated individually for optimal effect
- Combining high production capacity with high precision treatment
- Control of seed borne pathogenic and non pathogenic microbes strengthens the seed vigour which is the base for high yield with a high quality.



# ThermoSeed ®Quality System



# The Thermoseed principle





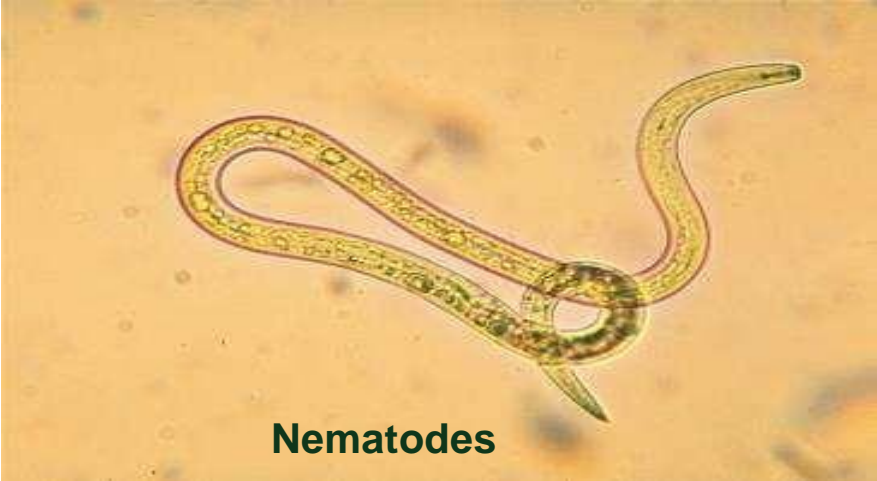
# The outcome of the innovation



- Sustainable and highly efficient seed treatment
- 15 different crops treated commercially
- App. 65 different crops treated in our test facility to be commercialized
- 12 production ThermoSeed plants in the EU and US
- 20 ongoing projects with potential customers
- 5 quotations for new facilities



# Proven control of seed pathogens



# The Thermoseed expertise in field crops



# The outcome of the innovation 2021-22

The image shows a certificate for the 3rd European Award for Cooperative Innovation. At the top is the award logo, a stylized green and blue recycling symbol. Below it, the text reads "3<sup>rd</sup> EUROPEAN AWARD FOR COOPERATIVE INNOVATION". The main title is "WINNER OF THE EUROPEAN AWARD FOR COOPERATIVE INNOVATION". Underneath, it says "Highly Commended Innovation" and "Lantmännen - ThermoSeed". A subtitle reads "Environment Value Creation – Natural resources and biodiversity". There is a signature of Ramón Armengol, President of Cogeca. At the bottom, it lists the organizers: Cogeca (European Agri-Cooperatives) and Cajamar (CASA RURAL).

The image features a scenic background of a mountain valley with a river and green fields. The text reads "20 MOST CLIMATE FRIENDLY COMPANIES OVER 2021". A circular inset shows industrial seed treatment equipment. The text continues: "Congratulations to LANTMÄNNEN BIOAGRI, SWEDEN ENVIRONMENTALLY FRIENDLY SEED TREATMENT". The logo "europeanseed" is in the bottom right corner.

## TOP 10 MOST INNOVATIVE PRODUCTS

Seed World Group  
Canada

### HONOURABLE MENTIONS: EQUIPMENT

#### Thermoseed, Lantmännen BioAgri

Thermoseed has been widely used in Europe and is being introduced in Canada via Lantmännen's seed business partners. It is a unique heat treatment method that provides quality seed for conventional and organic farming. The process is comparable to pasteurization using warm, moist air, neutralizing the infection of the seed without compromising seed germination. As a result, seed vigour is often increased.



## summary

- Combing the daily business with a R&D-department that understands the needs of the company/business and has the “understanding” of coming trends and has close cooperation in the scientific world, is a fantastic foundation for developing new ideas
- Having a economically stable owner (Lantmännen) with a long term perspective is essential for being able to develop new ideas into profitable and sustainable business
- The future for Thermosteed looks bright in the light of Green Deal
- We can substitute chemicals with our technology without risking any damages to the seed and by that contributing to both a sustainable world as well as food safety by having the same or even higher yields



# Thank you!



*The cleanest seed in the  
world  
-For sustainable growth*



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