Innovative technologies to optimize the application of agricultural products.

Summary

Profile type
Technology request

Company's country
Spain

POD reference
TRES20241108008

Profile status
PUBLISHED

Type of partnership
Research and development cooperation agreement

Targeted countries
- **Germany**
- **France**
- **Netherlands**
- **United Kingdom**

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Term of validity
8 Nov 2024
8 Nov 2025

Last update
8 Nov 2024

General Information

Short summary

Over 90% of conventional crop protection products are lost in the environment, requiring more treatments that harm soil, air, water, beneficial insects, and wildlife, while posing health risks to operators due to manual application. Current practices contribute to pollution, biodiversity loss, and reduced crop resilience. LAINCO seeks innovative technologies to revolutionize product application and meet the EU's 2030 sustainability goals by reducing environmental impact and health risks.

Full description

Currently more than 90% of applied conventional crop protection products are either lost in the environment or unable to reach the target. Therefore, more treatment cycles are used and result in detrimental effects on soil, air, waterbodies, and can affect beneficial insects such as bees and ladybugs and enter the food chain, damaging wildlife (i.e., birds, hedgehogs, wood-mice, beetles, butterflies, and amphibians). On the other hand, current product application strategies imply direct manipulation of the compounds by operators making it a manual and time-consuming process with the risks associated with operators' exposure. Thus, current practices contribute to soil, water, and air pollution, increase biodiversity loss and soil degradation, reduce crop resilience to extreme climate, and represent a risk for human health due to product exposure.
Furthermore, several of the newly developed biocontrol strategies required of a direct application into the plant (i.e. endotherapy) making it a highly manual and demanding process that needs to be improved with innovative

technologies to increase its efficiency.
Therefore, current plant protection strategies need to be revised and enhanced to attain the sustainability objectives that EU Commission has established for 2030.
Aware of the rapid and profound changes in agriculture, LAINCO is committed to achieve sustainable and competitive agriculture. As part of this commitment, the company is looking for novel promising technologies aiming to revolutionize the current available strategies for product application in agriculture. The desired technologies (as a matter of example but not limited to those) include machine-free application systems, nanorobot technologies, or technologies that guarantee product systemicity without the need for endotherapy, among others.

Advantages and innovations

In view of the ongoing revision of EU legislation governing the use of agricultural products, there is a critical and immediate demand for the development of novel strategies to reduce the environmental impact and to potentiate sustainable agricultural practices while minimizing health risks. In this context, the development of novel technologies to minimize the direct manipulation of products by operators and/or enabling the targeted application of the compounds thereby reducing environmental drift is an urgent need.

Technical specification or expertise sought

We are looking for start-ups, research centres or technological centres with proprietary and innovative technologies with pilot testing data showing its value in the specific context of the challenge.
The type of collaboration between a challenge owner and a technology provider would depend on the type of the technology, the matureness of its development and the specific target market. Among the different options these could be to engage in joint development, combining resources and expertise to further develop the solution to a market-ready stage, or establish a licensing agreement where the challenge owner gains rights to use the technology. Pilot projects may be conducted to test the solution before full-scale implementation. Alternatively, an equity partnership could be formed, allowing the challenge owner to invest in the technology provider. Another option is R&D collaboration, where both parties share research costs and data. They may also opt for a supply agreement, with the challenge owner committing to use or purchase the technology, or a consultancy arrangement where expertise is exchanged to refine the solution. These collaboration models can be adapted to the specific needs and goals of both sides.

Stage of development

Lab tested

Sustainable Development goals

- **Goal 3: Good Health and Well-being**
- **Goal 6: Clean Water and Sanitation**
- **Goal 13: Climate Action**
- **Goal 2: Zero Hunger**
- **Goal 17: Partnerships to achieve the Goal**
- **Goal 8: Decent Work and Economic Growth**
- **Goal 7: Affordable and Clean Energy**
- **Goal 12: Responsible Consumption and Production**
- **Goal 15: Life on Land**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 5: Gender Equality**

IPR Status

No IPR applied

IPR Notes

Partner Sought

Expected role of the partner

The company is looking for start ups and research centres that can contribute to novel promising technologies aiming to revolutionize the current available strategies for product application in agriculture. The desired technologies (as a matter of example but not limited to those) include machine-free application systems, nanorobot technologies, or technologies that guarantee product systemicity without the need for endotherapy, among others.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **R&D Institution**
- **SME 11-49**
- **SME 50 - 249**
- **SME <=10**
- **University**

Dissemination

Technology keywords

- **07001007 - Precision agriculture**
- **07001006 - Pesticides**
- **06004 - Micro- and Nanotechnology related to Biological sciences**
- **07001001 - Agriculture Machinery / Technology**
- **07001004 - Crop Production**

Market keywords

- **04004 - Other Genetic Engineering**
- **08002003 - Process control equipment and systems**
- **04017 - Micro- and Nanotechnology related to Biological sciences**
- **05009004 - Plant health**
- **08002004 - Robotics**

Targeted countries

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Sector groups involved

- **Agri-Food**
- **Health**
- **Electronics**