

# ENIGMA

A fera led collaborative R&D model 



# SOLVING AGRI-FOOD CHALLENGES

## WHAT IS ENIGMA?

Enigma is Fera's strategic R&D model established to support continued research, innovation and knowledge transfer across the agri-food sector through a joined-up approach with Fera and industry partners.

Thought to be one of the first research models of its kind in the agricultural sector, Enigma relies on industry collaboration to address exacting industry challenges.

Each Enigma project will be co-sponsored by relevant industry partners enabling Fera to deliver world-class science that finds end-to-end solutions to pertinent sector challenges.

## WHY HAS FERA LAUNCHED ENIGMA?

The pressure on global food systems is intensifying as populations continue to rise and the risks associated with a changing climate become ever more pressing.

Robust food production systems are needed to withstand these challenges, but significant gaps remain in R&D and knowledge transfer to realise a sustainable food system that is truly fit for the future.

Fera want to help address the shortfalls in research across the agri-food sector through Enigma.

## HOW CAN I / MY BUSINESS GET INVOLVED IN ENIGMA?

Organisations and businesses of any scale and who have a vested interest in a specific research area can apply to be a partner of upcoming Enigma projects.



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## WHAT WILL I / MY BUSINESS GET FROM BEING AN INDUSTRY PARTNER?

Knowledge exchange between Fera scientists and industry partners is a crucial element of Enigma to strengthen the connection between science and practical implementation.

Industry partners will also access several other benefits, including:

- **Open innovation** – The purpose of Enigma is to find innovative solutions that provide complete answers to industry challenges. Fera want to achieve this by creating a platform that provides the opportunity for open innovation across a collaborative group of partners
  - **Shaping research** – Partners have the opportunity to shape the research programme through regular communications with Fera science leads and other industry partners throughout the project
  - **Direct contact** – Each partner will be allocated an Enigma partner manager who will be their direct contact throughout the duration of the project
  - **Access to results** – Partners will have first sight of the results from the Enigma project they are involved in which will be delivered via programme reports and event
- **Industry network** – Involvement in Enigma projects will allow individuals and organisations to gain contacts through the network of partners they will work alongside. The projects will provide opportunities for continuing professional development (CPD) through engagement with partners and researchers
  - **Acknowledgement** – Partners will be acknowledged on the Enigma webpage and in planned external communications activity at key project milestones
  - **Project updates** – All partners will receive regular research updates delivered via a webinar and summary e-newsletter
  - **Communications pack** – Communication packs will be available to all partners which can be used to demonstrate involvement in Enigma projects



## ONGOING & UPCOMING PROJECTS

Fera has undertaken comprehensive sector market research to identify the exacting challenges faced by the agri-food sector to set the agenda for upcoming Enigma projects.

### ENIGMA<sup>I</sup>

Launched in May 2022, ENIGMA<sup>I</sup> is delivering sustainable solutions for wireworm control.

As a problem that continues to affect potato and carrot growers and increasingly those who grow cereal crops, sugar beet, field

beans, and leeks, for example, there is a need to undertake further R&D to understand how and why the pattern of wireworm damage is changing.



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### ENIGMA<sup>II</sup>

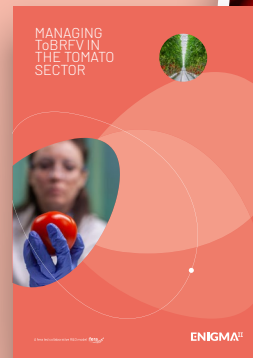
ENIGMA<sup>II</sup> will focus on better disease detection against tomato brown rugose fruit virus (ToBRFV) with decentralised monitoring methods.

As a persistent threat to tomato and pepper growers, the Tomato brown rugose fruit virus

(ToBRFV) necessitates further R&D. ENIGMA<sup>II</sup> aims to enhance disease detection and management through decentralised monitoring, ensuring sustainable and profitable practices in the UK tomato sector amidst ongoing challenges.



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### ENIGMA<sup>III</sup>

ENIGMA<sup>III</sup> will focus on enhancing food safety in vertical and controlled environment farming through standardised protocols and scientific validation, addressing unique risks in this high-tech industry.

As vertical and controlled environment farming grows, ensuring food safety remains crucial.

ENIGMA<sup>III</sup> aims to develop standardized food safety protocols tailored to this high-tech industry. By scientifically validating these approaches, the project will help producers manage risks and meet regulatory standards, ensuring safe, high-quality fresh produce for the market.



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## ENIGMA<sup>IV</sup>

**ENIGMA<sup>IV</sup> will focus on developing a meaningful diagnostic test for infield identification of TRV in the soil.**

Tobacco Rattle Virus (TRV) is a leading cause of spraing disease in potatoes, rendering masses of them unfit for the market.

The current standard tests for pre planting detection of TRV are ineffective, expensive, and time-consuming. This project will aim to improve the crop yields of potatoes and the predictive diagnosis of Tobacco Rattle Virus in the potato sector.



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## ENIGMA<sup>V</sup>

**ENIGMA<sup>V</sup> will focus on improved control of cabbage stem flea beetles (CSFB) on oilseed rape (OSR) through innovative combinations of biopesticides and pyrethroids, enhancing pesticide efficacy and ensuring sustainable crop production.**

As a major pest affecting oilseed rape (OSR) crops, cabbage stem flea beetles (CSFB) present

a significant challenge following the neonicotinoid ban.

**ENIGMA<sup>V</sup>** aims to enhance CSFB control through innovative biopesticide and pyrethroid combinations, ensuring sustainable OSR production. This project seeks to transfer laboratory efficacy to practical field applications, improving crop yields and sustainability.



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TO FIND OUT MORE ABOUT FUTURE ENIGMA PROJECTS VISIT OUR WEBSITE, EMAIL ADAM BEDFORD, ENIGMA PROJECTS DIRECTOR AT FERA OR FOLLOW US ON SOCIAL MEDIA:

- [adam.bedford@fera.co.uk](mailto:adam.bedford@fera.co.uk)
- [fera.co.uk/our-science/enigma-research-model](http://fera.co.uk/our-science/enigma-research-model)
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