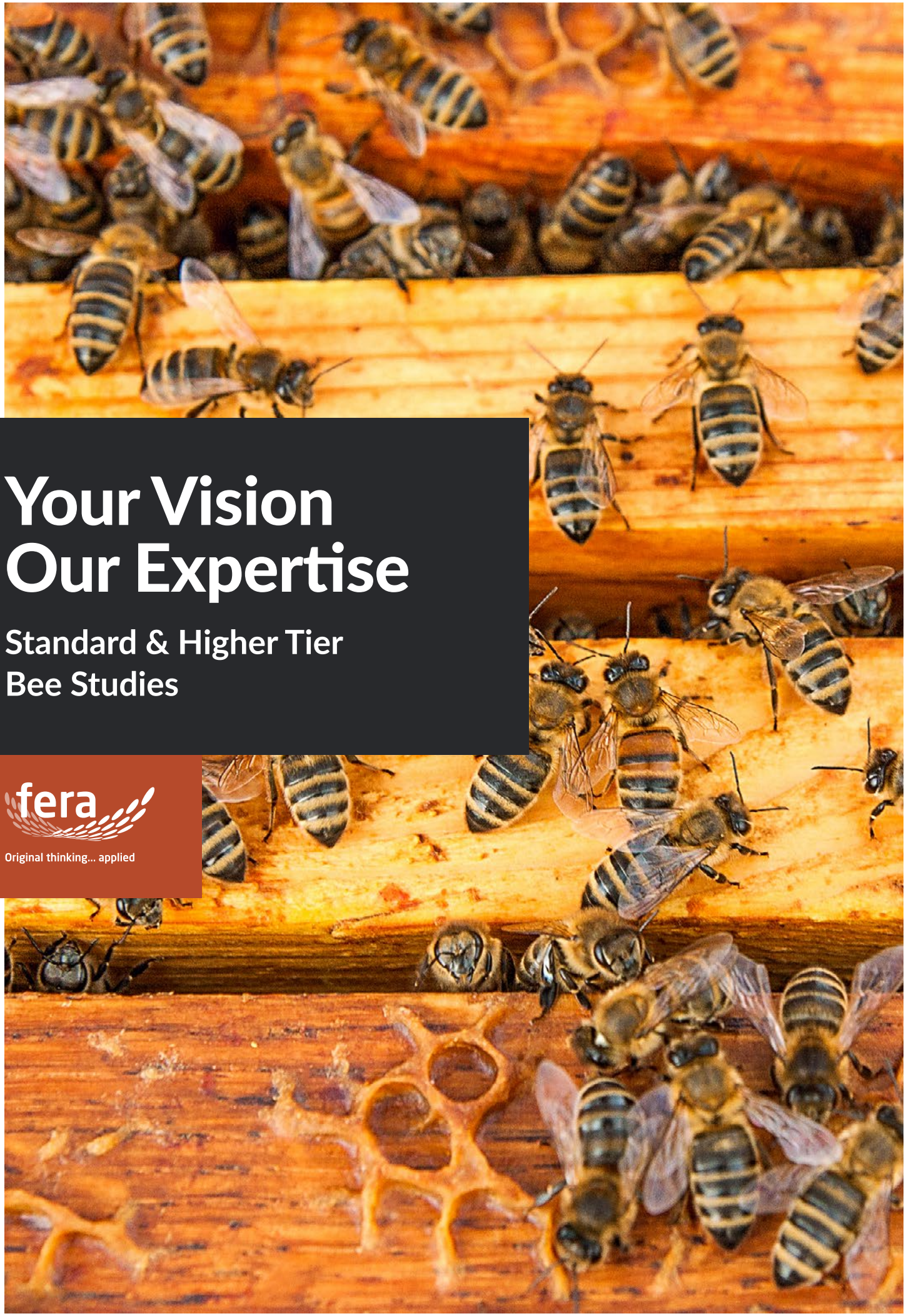

Your Vision Our Expertise

Standard & Higher Tier Bee Studies

fera

Original thinking... applied

From standard laboratory studies to the more complex, bespoke higher tier studies designed to address specific risk assessment needs, our experts at Fera are perfectly placed to meet your data requirements, and to help our partners develop products that are safer for bees and other pollinators.

We have a dedicated and experienced pollinator ecotox team and over 150 colonies of honey bees, expertly managed by our bee keeping team to help us provide the data to support our partner's risk assessments.

Study Type	Key Guidelines & Guidance	How?
Lower Tier Bee Studies Acute Contact & Oral Toxicity Adult	**Honey Bee:** OECD Guideline 213 Honey bees, Acute Oral Toxicity Test (1998) OECD Guideline 214 Honey bees, Acute Contact Toxicity Test (1998) **Bumble Bee:** OECD 246: Guidelines for the testing of chemicals: Bumblebee, acute contact toxicity test 2017 OECD 247: Guidelines for the testing of chemicals: Bumblebee, acute oral toxicity test 2017	• Laboratory based • With honey bees or bumblebees • Oral and contact exposure routes • Dose response • Estimation of LD50 / NOED/LOED values
Chronic Oral Toxicity Adult	**Honey Bee:** OECD Test Guideline 245 for the Testing of Chemicals: Honey bee (Apis mellifera L.), chronic oral toxicity test (10 day feeding test in the laboratory)	• Laboratory based • With honey bees • Continuous oral exposure over 10 days • Dose response • Estimation of LC50, LDD50 / NOED/LOED values
Toxicity Larval, Single Dose	**Honey Bee:** OECD Test Guideline 237: Honey Bee (Apis mellifera) Larval Toxicity Test Following Single Exposure	• Laboratory based • With honey bee larvae • Combined oral and contact exposure routes • Single application • Dose response • Estimation of LC50 / NOEC/LOEC values
Toxicity Larval, Repeat Dose	**Honey Bee:** OECD Guidance Document 239: Honey Bee (Apis mellifera) Larval Toxicity Test Following Repeated Exposure	• Laboratory based • With honey bee larvae • Combined oral and contact exposure routes • Repeat application (4 Days) • Dose response • Mortality at D8 • Adult emergence at D22 • Estimation of LC50 / NOEC/LOEC values
Higher Tier Bee Studies Colony Feeding Study	**Honey Bee:** Oomen (1992) Honey bee brood feeding test & Lückmann and Schmitzer (2019) modifications	• Field Based • Free-flying honey bee colonies • Direct colony feeding • Evaluates effects on bee brood development as well as colony effects
Cage, Tunnel Semi-field	**Honey Bee:** OECD Guidance Document 75	• Field based • With honey bees • Exposure to treated crop under tunnel conditions • Evaluates effects on bee brood development as well as colony effects • Option to measure residues in pollen, nectar, wax and honey
Field - Post Registration Monitoring / Residue Monitoring	**Honey Bee:** Study specific	• Field based • With honey bees • Monitoring bee behaviour, colony survival and development • Determination of residues in pollen and nectar






Analytical Capability

With increased regulatory requirements for the analysis of dosing solutions, diets and residue analysis of other matrices we are very well placed to meet your particular needs. Fera has a team of experienced analytical chemists with access to state-of-the-art equipment, facilitating both quantitative and qualitative analysis.

Our team has over 30 years of bee testing experience with our partners in Industry, to ensure regulatory compliance of new andexisting products. This, combined with over 50 years of experience in dealing with the collection and analysis of a vast array of bee related matrices keeps us at the front of research.

Our research expertise, scientific resources and bespoke capabilities help our partners test plant-protection products for their effects on bee survival, development and behaviour – helping them to develop products that are safe for bees and other pollinators with the highest quality data.



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Original thinking... applied

Speak to our experts about your Pollinator Studies Requirements

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