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Presentation of the ADAPTACOL2 project: Adaptation of WOSR to Coleopteran pests in a context of climate change and Phosmet withdrawal

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Management of WOSR pest: a major challenge for WOSR in France.

In France, for many years, winter oilseed rape (WOSR) has been facing drought during the sowing period (August/September), coupled with important cabbage stem flea beetle (*Psylliodes chrysocephala*) (CSFB) and rape winter stem weevil (*Ceuthorhynchus picitarsis*) (RWSW) pressures in autumn. These two pests have also developed resistance to pyrethroids. This situation has led to a significant decrease in WOSR acreage (-39%) between 2018 and 2021.

A massive financing plan to develop new management strategies.

Phosmet was the only effective active ingredient to manage resistant CSFB and RWSW populations. Following phosmet withdrawal in 2022, the French public authorities, in partnership with the oilseed industry, launched a major research and development plan. The objective of this plan is to develop operational agroecological strategies to reduce the impact of CSFB and RWSW by 2025. Eight projects are currently financed from autumn 2022 to 2025 to accelerate the development of strategies in three areas: improving the knowledge about the biology of insects (pests and their natural enemies), identifying solutions at the plant level (biological control, genetic methods, etc.), identifying solutions at the field and landscape level.

The example of Adaptacol2, an innovative project to find new strategies by mobilising research and development actors.

The ADAPTACOL2 project, which began in autumn 2022, is part of this plan. It is led by Terres Inovia, in partnership with Axereal and Actura, and in collaboration with more than a hundred stakeholders. It is financed by the French Ministry of Agriculture. Its main areas of work are:

- The evaluation of the natural regulation intensity of CSFB and RWSW in several French areas to increase adviser and farmer awareness of the importance of natural enemies.
- The efficacy evaluation of several insecticide, biocontrol and bio stimulant solutions and the optimisation of their conditions of application.
- The comparison of the commercialised varieties' tolerance to CSFB and RWSW; the evaluation of several mixtures of varieties.
- The evaluation of the efficacy of a territorial strategy based on the establishment of trap fields. These fields are sown with attractive cruciferous species during the interculture period, to divert CSFB during flight from WOSR fields. At the end of winter, trap crops are destroyed which should reduce the next flea beetle generation.

Some preliminary results from the 2023 campaign will be presented.

However, beyond the acquisition of technical references, the main objective of ADAPTACOL2 is to mobilise research and development actors (public and private researchers, stakeholders, farming advisers) to support farmers in a coordinated way in changing their practices. Development actors are involved in carrying out trials to test new solutions. Researchers implicated in the plan are invited to present their findings and to propose solutions for development actors to test. The mobilisation of development actors in the acquisition of technical references makes it possible to check that these solutions are operational, and it should accelerate the appropriation of these new strategies by farmers.