DOES BIOCONTROL HAVE A FUTURE in arable farming?

Claude Maumené: "Progressively, biocontrol solutions will become as effective as conventional ones; this is already the case for some of them."

Biocontrol is positioning itself as an alternative to plant protection products, some of which are reaching their limitations. Will results meet expectations? Here are some answers from Claude Maumené, researcher at Arvalis.

Perspectives Agricoles: **How did biocontrol find its place in agriculture?**

Claude Maumené: Initially, biocontrol techniques, which are more easily managed in a closed environment, were developed for production in greenhouses. They were slowly extended to field conditions, mainly for high added value crops. The issue, particularly for fruit and vegetables, was to find solutions both to the problem of chemical residue shortly before harvest, and to some technical bottlenecks. Like the rest of the industry, arable farming is seeing an increasing amount of regulatory constraints. Resistance cases are also on the increase, while the number of active substances being developed is decreasing every year. Biocontrol is seen as a possible solution, and even a necessity. It represents significant innovation potential, which can be developed as much by academic "spin-offs"(1) as by large international groups. Research is underway, but it will be a long process. Biocontrol products, except for macro-organisms that come under special regulations, follow the same approval procedure as conventional plant protection products. By definition, requirements are the same, and therefore turnaround times are similar.

P. A.: **What are the prerequisites for biocontrol to succeed?**

C. M.: Above all, biocontrol products must show that they are sufficiently effective and that their toxicological and ecotoxicological profile is good. Ideally, they should remain fairly easy to use, and financially comparable to other available solutions. It is also crucial that farmers should start trusting them. Technical communications from all players must therefore be thoroughly accurate. Potential users must be able to take ownership of those innovations, knowing exactly what their benefits are, as well as their limitations, and how to use them. Some of them are already as effective as conventional techniques; others will partially replace them, with, in some cases, the need for adapting, or even revolutionising practices. In any case, every biocontrol product's scope will need to be known and openly defined: it is one of the keys to success.

P. A.: **Can we expect the rapid development of biocontrol?**

C. M.: At the moment, it is estimated that the biocontrol industry represents around 3 to 5% of the plant protection product market. Optimistic forecasts predict a 15% annual increase of that market. Unless a technological breakthrough occurs that would revolutionise practices, cohabitation between biocontrol and conventional solutions is a long-term prospect. The implementation of a combination of action levers will remain the safest way of meeting set objectives in terms of reducing the use of plant protection products. Research will undoubtedly be productive, inventive and daring. The "flying doctor" bumblebee is a great example of creativity. They increase pollination efficiency by frequenting flowers, and at the same time carry the spores of a highly parasitic fungus targeting Botrytis. In the longer term, plant defence stimulation, or ecological chemicals could potentially deliver some great surprises.

(1) Businesses created by students under the umbrella of their school's or university's research labs.

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