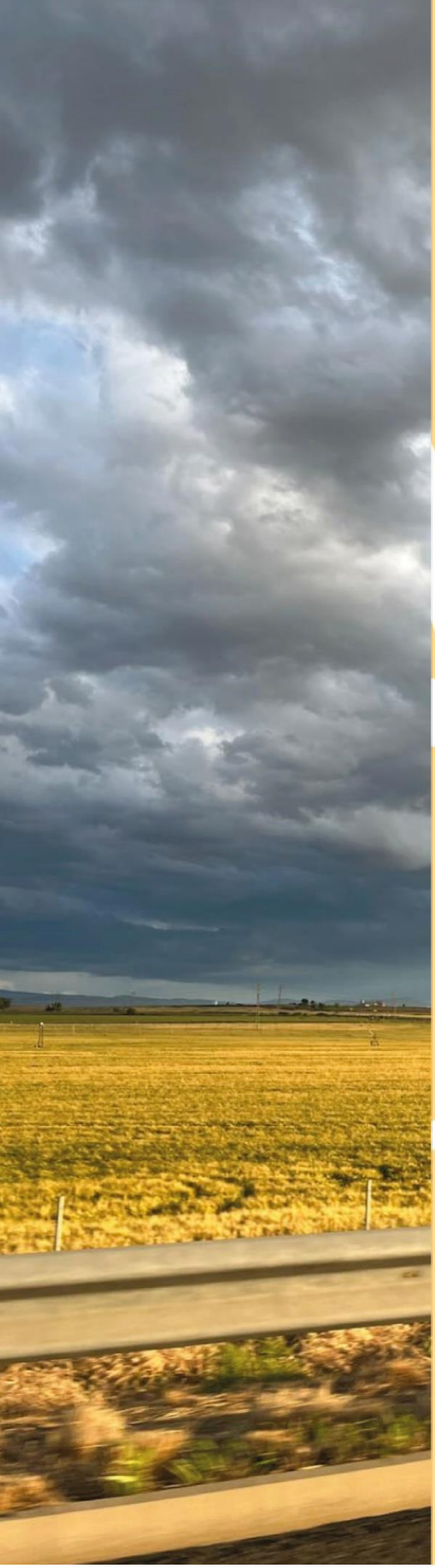

# D8.1 Report on preparation and publication of Practice Abstracts (Batch 1)

## WP8 Boosting RENOVATE results and impacts – Project communication and dissemination

UPC

April 2026

RENOVATE

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## TABLE OF CONTENTS

## Introduction

This deliverable presents a collection of ten practice abstracts developed within the framework of the RENOVATE project. The main objective of this document is to summarise and communicate key insights, experiences, and knowledge generated through different project activities in a clear and accessible way. These practice abstracts serve as a bridge between research and practice, supporting the wider dissemination and practical uptake of RENOVATE's results among stakeholders, policymakers, practitioners, and the general public.

The preparation of these abstracts reflects the project's commitment to transparency, collaboration, and knowledge sharing. Each abstract contributes to the overall understanding of how RENOVATE is progressing towards its goals, providing concise evidence of the project's methodologies, achievements, and lessons learned. Together, they illustrate the multidimensional nature of the project, which integrates digital innovation, participatory approaches, and cross-country cooperation to foster learning and engagement across Europe.

In essence, this document represents a key dissemination milestone, offering a structured overview of the project's practical outputs and reinforcing RENOVATE's contribution to innovation, inclusion, and knowledge exchange within the European context.

## Practice abstracts

The following section presents the ten practice abstracts developed within the RENOVATE project. Each abstract provides a concise summary of specific activities, findings, or outputs, highlighting practical insights and experiences gained throughout the project's development.

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

1. Discover RENOVATE: Key facts and insights about the project

## Summary for practitioners on the main finding(s)/innovative solution(s)

RENOVATE addresses the challenge of reducing the use of Plant Protection Products (PPPs) in EU agriculture while maintaining farm productivity, profitability and compliance with EU requirements. This is particularly relevant for specialty crops such as orchards, vineyards, citrus, almonds and olive groves, where crop protection is often more demanding. New technologies and better application methods can help farmers meet these requirements, but only if they are easy to use and properly supported in real farm conditions.

A key insight emerging from the early work is that adoption fails more often due to complexity, lack of support and training than due to lack of technology. For this reason, RENOVATE focuses on turning knowledge into practical, reusable guidance that supports real decisions in daily work.

RENOVATE provides a practical training system that brings together ready-to-use resources for farmers, foresters and advisors to support the sustainable use of PPPs. The materials are designed to be applied in practice. Training uses field-oriented formats such as short simulations, serious games and structured exercises to help users practise decisions safely and consistently.

## Additional dissemination and exploitation material(s)

Title/Description

RENOVATE Project Website

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URL

https://renovateproject.eu/project/

## Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

## Additional information

Keywords: Plant Protection Products (PPPs), Training materials, Sustainable use of PPPs

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

2. Reducing pesticide use in tree crops: how to choose technologies that you can actually use

## Summary for practitioners on the main finding(s)/innovative solution(s)


Farmers have access to many tools to reduce the use of Plant Protection Products (PPPs) in tree crops. Options include better spraying equipment, Decision Support Systems (DSSs), biocontrol products, soil practices, and monitoring technologies. What often limits success is not the lack of options, but the difficulty of adopting them under real farm conditions. The same barriers often appear: high upfront cost, lack of time and skills, and local limits such as weak connectivity or Global Navigation Satellite System (GNSS) issues.

A practical way to decide what to adopt next is to follow a simple order. Start with solutions that are easy to apply correctly and that give clear benefits within the season. Then add more complex tools only when the farm has the skills and support to use them properly. In many farms, early gains come from improving application quality, especially better targeting and drift reduction. These changes reduce waste in every treatment and do not depend much on data or internet access.

DSSs and monitoring tools can further reduce spray applications by improving “when to treat” decisions. They work best when data is reliable and when users know how to interpret the results. More specialised options, such as biocontrol agents or resistance inducers, can reduce chemical dependence but are sensitive to timing and environmental conditions, so they are more robust when used within an Integrated Pest Management (IPM) strategy. Soil practices like cover crops can also help, but they add management complexity and need local adaptation to avoid competition for water and nutrients.



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Before investing or recommending a new technology, farmers and advisors should ask three questions: what problem it solves, what changes it requires in daily work, and who will provide support during the first season. When these conditions are met, combining better application, better decisions and suitable alternatives becomes a realistic route to reduce PPP use and costs over time.

### Additional dissemination and exploitation material(s)

Title/Description

URL

### Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

### Additional information

Keywords: PPP reduction, Technology adoption, Farm decision-making

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

3. Glossary about plant protection products application for vineyards, olives and other 3D crops

## Summary for practitioners on the main finding(s)/innovative solution(s)


Many problems in spraying start with simple misunderstandings. Farmers, foresters, advisors, trainers, manufacturers, and even software tools sometimes use the same word in different ways (for example: dose, volume rate, drift, droplet size, canopy, etc). When this happens, it is easy to end up with the wrong settings, the wrong dose calculation, or advice that is not understood in the same way by everyone.

This glossary gathers clear, short definitions of key terms used in Plant Protection Products (PPPs) application in vineyards, olives, and other 3D crops. It covers terms linked to sprayer equipment, calibration, application techniques, droplet characteristics, Integrated Pest Management (IPM), and precision spraying tools. The glossary also includes photos and simple diagrams to make technical terms easier to understand.

How to use it: when a term creates confusion during training, an advisory visit, sprayer adjustment, dose calculation, or record keeping, check the glossary and agree on the meaning before you change settings or make a recommendation. Using the same wording helps avoid mistakes and makes advice more consistent across farms. The glossary is intended to be used amongst farmers, foresters, advisors, and other experts.


## Additional dissemination and exploitation material(s)

Title/Description

RENOVATE – Plant protection products application glossary


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URL

https://renovateproject.eu/shared-files/2679/?RENOVATE-Glossary.pdf

## Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

## Additional information

Keywords: Plant Protection Products application terminology, Technical vocabulary.

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

4. Advanced Knowledge Transfer Activities (AKTAs): a tool to produce novel training materials in crop protection sector

## Summary for practitioners on the main finding(s)/innovative solution(s)

Many useful tools and technologies for crop protection have already been developed in EU projects and Operational Groups (OG). However, a common problem is that these solutions are not widely adopted. In many cases, the reason is not the technology itself, but the lack of clear, practical guidance that helps farmers, foresters, and advisors understand what the tool does, what it requires, and how to use it correctly in real farm conditions.

Advanced Knowledge Transfer Activities (AKTAs) are RENOVATE's way to bridge this gap. An AKTA starts from an existing solution and turns it into ready-to-use training and dissemination material that supports adoption. The focus is not on describing the project or the technology in general terms, but on producing practical content that can be reused in advisory visits and training sessions.

In practice, AKTA materials aim to answer three simple questions that end-users always ask:

- What problem does this tool solve in the field?
- What do I need to use it properly (data, equipment settings, timing, skills, support)?
- What are the common mistakes and how can I avoid them?

To make the guidance easy to apply, AKTAs produce practical knowledge in two forms. First, a Cost-Benefit Assessment (CBA), which summarises costs, time requirements, and expected benefits under real conditions. Second, practical training and dissemination material, such as short guidelines, short checklists, and audio-visual content that helps advisors deliver

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consistent recommendations and helps farmers and foresters use the technology with more confidence, especially during the first season, when most adoption problems appear.

### Additional dissemination and exploitation material(s)

Title/Description

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### Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

### Additional information

Keywords: Training materials, Technology uptake,

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

5. Designing digital and game-based training for crop protection: aligning tools with users' real competences

## Summary for practitioners on the main finding(s)/innovative solution(s)


Effective digital training for crop protection must be based on real farm tasks and on the actual digital skills of farmers and advisors. Most professionals already use smartphones and simple apps in their daily work, which offers a good starting point for introducing digital training tools. However, platforms that are too complex or not clearly useful risk low adoption.

Training solutions work best when they use simple, mobile-friendly formats and provide short modules linked to practical decisions, such as dose calculation, label interpretation, sprayer calibration, or drift reduction. Clear language, visual aids and step-by-step instructions help increase usability and trust.

Digital confidence varies across generations: younger users may be more familiar with interactive tools, while senior professionals often prefer linear, well-structured pathways. For this reason, training platforms should remain intuitive and avoid unnecessary complexity, ensuring access for users with different levels of digital experience.
Gamification can support learning, but most users are not used to complex game environments. Therefore, gamified elements should be introduced gradually and kept closely linked to real farming situations. Simple simulations, quizzes, and problem-solving exercises are more effective than advanced game structures. Progressive difficulty levels and self-assessment tools help build confidence without creating cognitive overload. Aligning digital and game-based training with users' real competences and daily needs increases engagement, supports informed decision-making, and



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promotes a more efficient and sustainable use of plant protection products in everyday practice.

### Additional dissemination and exploitation material(s)

Title/Description

URL

### Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

### Additional information

Keywords: Digital training, Gamification, User-friendly learning

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

6. Improving pesticide-use training: practical updates for a more effective training system

## Summary for practitioners on the main finding(s)/innovative solution(s)


Pesticide-use training is well established across EU Member States, but course delivery does not always match today's needs. A comparative review of training schemes points to a clear opportunity: training can be strengthened by focusing less on information and more on practical skills, especially those that support the sustainable use of Plant Protection Products (PPPs).

One clear update is to integrate digital agriculture in a practical way. Decision support systems (DSSs), precision technologies and other digital tools are increasingly used by farmers, advisors and also retailers when advising customers. Training works best when it explains what these tools can and cannot do, what data they need, and how to interpret outputs responsibly. This helps build trust and reduces incorrect use and unrealistic expectations.

A second priority is to reinforce hands-on components. Practical exercises on sprayer calibration, basic adjustment, maintenance and inspection preparation are essential for consistent performance. When these topics are mainly covered through slides, participants may understand the theory but still struggle to apply it correctly under real conditions.

Training also improves when learning materials are high-quality, up to date and engaging. Short videos, clear visual guides and micro-modules based on real farm situations are easier to understand and easier to remember. Materials should be updated regularly to reflect changes in equipment, digital tools and good practice. A shared minimum standard can also help



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keep core messages consistent across Member States, while still allowing national specificities.

Finally, training systems benefit from continuous education. Short refresher modules and focused updates help practitioners keep pace with evolving technologies and regulatory requirements, and they provide timely support before the spray season rather than relying only on long renewal cycles.

### Additional dissemination and exploitation material(s)

Title/Description

URL

### Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

### Additional information

Keywords: Pesticide application training programs, Harmonised training programs

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

7. Priority training themes for sustainable crop protection: what farmers really need

## Summary for practitioners on the main finding(s)/innovative solution(s)


Focus groups highlighted a common issue: crop protection training is often too theoretical and not sufficiently linked to day-to-day work in the field. Farmers and advisors consistently pointed to four priority training themes that should be addressed first, because they have a direct impact on spray quality, risk reduction and sustainable use of Plant Protection Products (PPPs).

**Sprayer calibration:** Calibration is best learned through practical exercises. Training should focus on the key parameters farmers actually adjust (speed, pressure, nozzle choice, airflow where relevant) and how these settings change with crop, canopy and conditions. The aim is simple: ensure the sprayer is correctly set up before spraying starts.

**Dose expression and dose calculation:** Many problems begin with the dose. Training should explain dose in a clear, farm-oriented way and show how to calculate volume and PPP dose based on canopy characteristics, rather than relying on fixed “one-size-fits-all” rates. This helps farmers and advisors make consistent decisions across different plots and growth stages.

**Risk reduction and drift mitigation:** Drift and point-source losses are among the most relevant practical risks. Training should cover the measures that farmers can apply immediately: correct settings, good practice during spraying, and safe handling during mixing, filling and cleaning. The goal is to reduce risks for people and the environment while maintaining efficacy.

**New technologies and biopesticides:** Interest is high, but adoption depends on clear guidance and realistic expectations. Training should show



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what new equipment and alternative products can and cannot do, what they require (setup, data, maintenance, timing), and where they fit within an IPM approach. This supports confident use and avoids disappointment.

These four themes provide a clear basis for training and advisory support built around practical, ready-to-use skills.

### Additional dissemination and exploitation material(s)

Title/Description

URL

### Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

### Additional information

Keywords: Training priorities, Technology adoption

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

8. Navigating EU Legislation: Practical Solutions for Compliance in Pesticide Application

## Summary for practitioners on the main finding(s)/innovative solution(s)


Many farmers and advisors feel that PPP rules are harder to follow than before because requirements overlap across EU, national and local levels. In the focus groups, participants asked for clearer information and practical support that helps turn rules into actions that fit daily work. One repeated message was that the problem is often not one single rule, but the combination of several rules that apply at the same time. This creates uncertainty, especially when conditions change between regions or when farms work with different crops and markets. Farmers and advisors prefer short explanations focused on real situations ("what applies in this case") rather than long legal texts.

Record keeping, especially in an Electronic Farm Book, was described as a major pain point. Many farmers see it as time-consuming and difficult without practical guidance, even when they agree that traceability is important. The focus groups suggest that what helps most is to keep records simple and consistent, and to have support when setting up the first version, so the process becomes repeatable during the season.

Participants also raised questions about authorisations for innovative technologies, including drones. This topic is seen as relevant, but the main request remains the same: clear, accessible guidance that explains what is allowed, under which conditions, and what steps are needed in practice. This reduces uncertainty and avoids wasted effort.



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## Additional dissemination and exploitation material(s)

Title/Description

URL

## Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

## Additional information

Keywords: Regulatory compliance, Electronic Farm Book

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

9. Engaging Digital Training: Best Formats to Boost Technology Adoption in Agriculture

## Summary for practitioners on the main finding(s)/innovative solution(s)


Across the focus groups, one message was repeated in different countries: long, text-heavy training is rarely used in practice. People prefer training that is quick to consume, easy to repeat, and clearly linked to real tasks. This includes a strong preference for audio-visual content and "short learning pills" instead of dense manuals.

A second common point is that interactive formats help engagement, especially for users who are less willing to attend training or who feel overwhelmed by new tools. Several focus groups highlighted the value of simulations and playful or gamified approaches that replicate real situations, so users can practise decisions safely before applying them on-farm. The same discussions also emphasised that content needs to stay simple, credible and validated, because trust is a key condition for adoption.

Finally, focus groups repeatedly asked for practical digital tools that solve day-to-day needs, not only for learning. Fast mobile calculators and simple decision-support features were mentioned as useful when they help with common field decisions such as dose calculation, spraying parameter optimisation, or quick checks that avoid mistakes. When digital training combines short videos, simple interactive practice, and quick field tools, users are more likely to come back to it because it supports real work rather than adding extra effort.



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## Additional dissemination and exploitation material(s)

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## Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

## Additional information

Keywords: Digital training, Serious games, Simulation-based learning, Field decision tools

RENOVATE

# PRACTICE ABSTRACT

## Title of the practice abstract

10. Bridging the Gap: The Crucial Role of Advisors and Continuous Support in Tech Adoption

## Summary for practitioners on the main finding(s)/innovative solution(s)


Despite the availability of advanced digital tools and smart sprayers, technology adoption in crop protection often stalls at the field level. Evidence from focus groups across Europe reveals that technological innovation is rarely adopted without the recommendation and ongoing support of a trusted local figure. This makes advisors and local support a key factor in technology uptake.

One practical lesson is that advisors often act as “translators”. Farmers do not need long manuals; they need clear explanations that connect a tool to a real decision on the farm. Short demonstrations, simple visuals and step-by-step guidance help turn a “new tool” into something usable. This is also why training works better when it is linked to real tasks and real conditions, not only to theory.

Focus groups also highlighted the value of peer examples. When farmers see a solution working on real conditions, adoption becomes more realistic. Advisors can support this by identifying a few early adopters and using small, targeted demonstrations (Demo Days) where others can ask questions and see how the tool fits into daily work.

Finally, continuous support matters more than a one-off course. A simple follow-up model helps: a short check-in when the tool is first used, quick troubleshooting support during the season, and a short review at the end to decide what to keep and what to change. This reduces fear of failure and makes adoption more stable over time.



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## Additional dissemination and exploitation material(s)

Title/Description

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## Geographical Location

Belgium, Cyprus, Czechia, France, Italy, Poland, Portugal, Spain

## Additional information

Keywords: Advisor support, Technology adoption, On-farm learning