

Report on the outcomes of a Virtual Mobility

Action number: CA21134

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**COST webinars as a dissemination tool to enhance the exchange of research ideas
among researchers**

Outline

1. INTRODUCTION

Pogreška! Knjižna oznaka nije definirana.

2. COST WEBINARS' IMPLEMENTATION 2

2.1. Organizational details

Pogreška! Knjižna oznaka nije definirana.

2.2. Information on completed webinars 3

3. METHODOLOGY FOR PREPARING THE REPORT 3

4. WEBINAR TOPICS' ANALYSE 4

5. RESULTS OF THE EVALUATION 6

6. CONCLUSIONS 8

1. INTRODUCTION

A webinar (from “web” and “seminar”) is an online seminar, lecture, workshop, or professional presentation that enables the transfer of knowledge, information, and experience to many participants via the Internet. Unlike

traditional seminars, webinars do not require physical attendance, allowing participants from different locations, countries, and institutions to join. This makes them particularly valuable for international knowledge exchange.

Webinars are primarily used for the rapid and efficient dissemination of scientific, professional, and practical information. They may be organised as one-off events or as a series of related educational activities within projects, professional development programmes, or thematic campaigns.

A major advantage of webinars is their broad accessibility and relatively low organisational and financial cost. Their interactive nature allows participants to ask questions, engage in discussions and polls, and exchange knowledge and experiences. Recordings and presentation materials can also be made available after the event, extending its reach and enabling subsequent educational and professional use.

The aim of this report is to analyse the extent to which webinars organised under COST Action CA21134 were an effective tool for disseminating research results, methodologies, recommendations and examples of good practice to scientists, professionals, end users and other stakeholders. The contribution of the webinars to scientific communication, knowledge transfer and stronger links within the research community has also been evaluated.

2. COST WEBINARS' IMPLEMENTATION

2.1. Organizational details

The idea of organising a COST webinar emerged during the first year of project implementation. The general goals of the COST project, related to networking and bringing together scientists who, in their scientific activities, address research topics aimed at reducing the use of pesticides, are very broad. It was therefore necessary to find a format through which the scientists involved in the COST project, whose number exceeded 350 in the first year, could share their ideas, present research results, and better connect with colleagues engaged in complementary research. We wanted to intensify discussion between the members of the different working groups of the COST TopAgri project.

The organisation of the webinars began in June 2023, when members of the COST project were invited to propose topics they would like to present. The response was very strong and, once the topics had been collected, webinar organisation began. It was agreed that the webinars would be held every second Wednesday of the month from 14:00 to 15:00 (CET) and that the MS Teams platform would be used. The initial schedule was prepared at the end of August 2023, and the first webinar was held on 13 September 2023. The webinars were held continuously until July 2024, and after the summer break they continued from 18 September to 26 March 2025. After that, a renewed call was sent to all members of the COST Action to submit new topics, and all researchers who received a Short Term Scientific Mobility (STSM) grant from the COST project were obliged to present the results of their STSM activities at COST webinars. After new proposals were received, another cycle of webinars was organised from 15 October 2025 to 25 March 2026.

The webinars lasted 60 minutes and included two 20-minute presentations and 10 minutes of discussion per presentation. Moderation of the webinars was entrusted to the leaders of the working groups and to scientists who expressed interest in moderating. If no moderator could be found, the webinars were moderated by the webinar organiser, the vice-president of the COST project.

The details of presentations were agreed in advance between the webinar organiser and the presenter, who received instructions on all technical issues. Notices and schedules for the webinars are regularly published on

the COST project website and on the project's LinkedIn profile. Interested scientists from outside the project were also invited to the webinars, some of whom subsequently joined the project. All participants in the COST project received a reminder via the e-cost platform one to two days before each webinar, asking them to forward information about it to colleagues at their institution and their network who might be interested.

After the webinar, the majority of presenters sent the PDF version of their presentations and these were uploaded to the COST webpage.

2.2. Information on completed webinars

In total, during the implementation of the project, 47 webinars were held, featuring 84 presentations. In some cases, presentations were cancelled and no replacements could be organised. Of the 47 webinars, 38 had two presentations each, one had three presentations, and eight had a single presentation. In total, 24 presentations were given by young scientists who received STSM grant. Scientists who presented at the webinar were from 25 different countries, as shown in Figure 1.



Figure 1 Geographical distribution of scientists who presented at webinars. The home countries are marked in dark grey.

The geographical distribution of the scientists who actively participated in the webinars extends beyond the borders of the European Union. Alongside scientists from 16 EU member states, scientists from five European countries that are not members of the EU (Serbia, Bosnia and Herzegovina, Albania, North Macedonia and Turkey) and scientists from four countries in Africa and the Middle East (Morocco, Tunisia, Egypt and Israel) presented their research results.

The number of participants in webinars varied from 20 to 90 per webinar depending on the topic and participants availability.

3. METHODOLOGY FOR PREPARING THE REPORT

A list of the webinars held was prepared for this report. The webinar topics were grouped into six categories based on their subject matter: insect control, disease control, weed control, system approach, breeding and plant

microbiome, and pesticides, biopesticides and alternatives. Additionally, the presentation topics were classified according to the COST project working package to which they contributed: WG1 – Setting the scene: identifying research gaps and needs; WG2 – Transformation and transition steps towards zero pesticide-based value chains; WG3 – Breakthroughs in biological research; WG4 – Redesigning cropping systems; and WG5 – Community building, dissemination and communication. The contribution of each topic to the general objectives of COST Action CA21134 and to the Action's various working groups was analysed in terms of its relevance to the working group objectives.

Consultation with webinar participants and presenters was organised via an online survey using a Google Form. The survey was created at the link <https://forms.gle/AniVthnNobpPZxRKA> and distributed to all COST Action members via the e-COST platform on 3 September. The deadline for completing the survey was Friday, 11 September. The questionnaire consisted of 14 questions. Of these 14 questions, four were intended for speakers – specifically, the researchers who presented their findings and addressed specific topics. The remaining questions were addressed to all webinar participants. Questions for participants covered the quality of the webinar organisation, topic selection, the relevance of topics to participants' interests, and other aspects. Presenters were asked about their reasons for participating in the webinars, as well as their satisfaction with the organisation and their interaction with the participants. In the final question, survey participants were asked to describe in one to two sentences the extent to which participation in the webinars strengthened their commitment to the COST project's goals and their sense of belonging to a scientific community of around 500 scientists working on methods to minimise pesticide use.

4. WEBINAR TOPICS' ANALYSE

The data on the presentations held are provided in Attachment 1. The results of the analysis of the presentations, by topic, are shown in Figure 2.

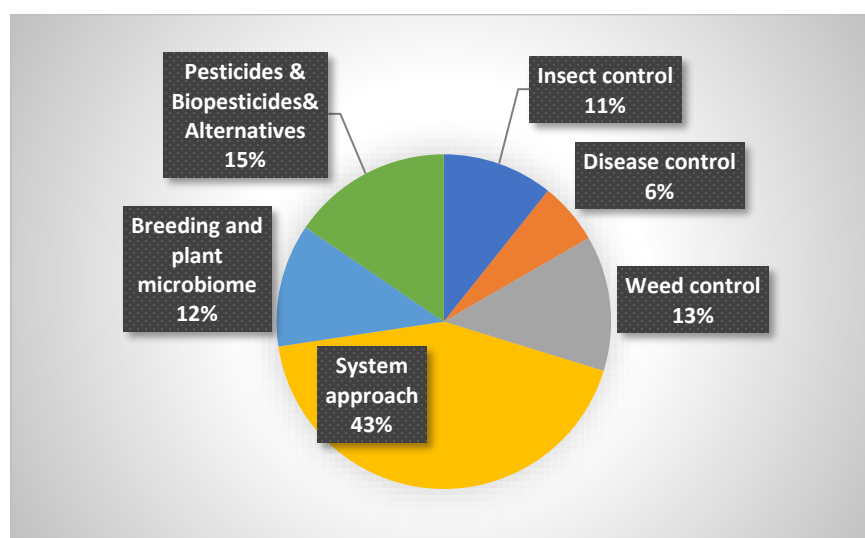


Figure 2 Distribution of webinar presentations by topic

The smallest proportion of the presentations (a total of five) related directly to plant diseases. On the basis of this number of presentations, it might appear that problems with plant diseases are less common. However, to

this number we should add 10 presentations that addressed plant breeding and microbiomes, which mainly focused on resistance to plant diseases and the role of the microbiome in preventing plant diseases. From all of the above, the research direction in the field of plant pathology is clear, namely efforts to control plant diseases by developing resistance to plant pathogens and by better understanding the role of microbiota in inducing resistance and preventing plant diseases. In addition, several presentations thematically belonging to biopesticides and alternatives reported research results on alternative molecules targeting the causative agents of plant diseases. A similar situation was observed for insect pests and weeds. The results of studies on the potential application of alternative methods for monitoring and controlling insect pests were presented in nine presentations, and alternative methods for monitoring and controlling weeds in 11 presentations. To these, we should definitely add several presentations thematically classified as biopesticides that in fact dealt with the suppression of one of these groups of harmful organisms. In addition to presentations thematically classified in the group of biopesticides (a total of 13) that presented research results on alternative products, compounds or techniques (ozone, cold plasma), several presentations addressed regulatory obstacles and registration requirements for biopesticides, the sustainable use of pesticides and the role of biopesticides in sustainable production systems.

Alongside research into pesticide alternatives, the largest share of topics (43%) related to the systemic approach to controlling harmful organisms. They are focused on the development of control tactics and strategies, which often include transforming existing cultivation systems, introducing new cultivation techniques and technologies, diversifying cultivation systems, and adding new crops to crop rotations. This reveals a clear shift in research towards more complex solutions aimed at redesigning cultivation systems – a necessary step to permanently reduce reliance not only on chemical pesticides but also on biological alternatives, which can often have unintended consequences for non-target organisms.

The detailed distribution of the presented research topics according to their contribution to different work packages is shown in Figure 3.

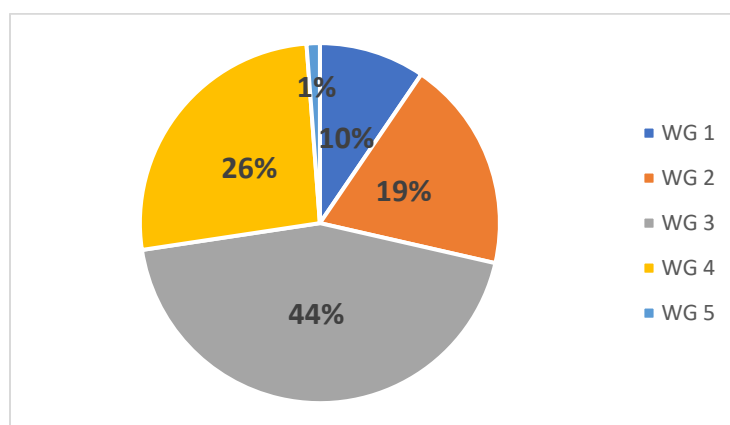


Figure 3 Distribution of webinar presentations by contribution to working group objectives

Webinar topics contributed to the research coordination objectives and aims of five working groups in the project, as well as to capacity-building objectives. WG 1 focused on the barriers and opportunities that end-users,

i.e. actors along the entire value chain, will face as pesticide use is significantly reduced. Ten per cent of the topics (eight presentations) contributed to this goal. Through three webinars, seven presentations were given that showcased the results of the LIFE project Agrowise, which was proposed, approved and implemented by scientists involved in the COST project. These presentations focused on the classification of integrated pest management (IPM) measures, the identification of research priorities within the IPM system and the development of indicators that would enable the valorisation of the contribution of individual integrated plant protection measures, all of which together contribute to the goals of WG 1. In addition, three presentations on the LIFE project results, together with a further 13 presentations (in total 16 presentations, 19%), addressed various approaches to technical and organisational redesign through co-creation processes with the goal of successfully transforming agricultural production into agroecological systems with zero dependence on chemical pesticides. These are the objectives of WG 2. The largest group of topics (37 topics, 43%) addressed various alternative solutions for controlling harmful organisms, which is directly related to the objectives of WG 3, as the aim of WG 3 was to offer new perspectives for innovation and effective implementation of crop protection based on agroecological concepts, and to pave the way for the development of zero-pesticide agriculture. A significant group of topics (22 topics, 26%) contributed to the knowledge needed to redesign cropping systems for zero chemical pesticide use based on functional biodiversity and agroecological principles, which is in line with the objectives of WG 4. Only one topic (less than 1%) addressed dissemination strategy and effective communication, as defined in the aims of WG 5.

The participation of numerous scientists in the webinars, both as attendees (ranging from 20 to 90 per webinar) and as presenters (84 scientists), on diverse topics that collectively help to reduce agriculture's reliance on chemical pesticides, demonstrates that the webinars significantly contributed to achieving the capacity-building goals of the COST project.

5. RESULTS OF THE EVALUATION

The survey was completed by 69 respondents: 20 stated they regularly attended the webinars, 39 attended occasionally, 5 attended only once, and 5 had never attended. The most frequently cited reasons for non-participation were lack of time and scheduling conflicts with other commitments. The majority of respondents (41) participated as attendees; 19 participated as presenters, while 4 served as moderators. Participants rated the technical organisation of the webinars very highly: 30% gave it a score of 4 and 66.7% gave it a score of 5. Only 3.4% of respondents rated the technical organisation as 1 (1.7%) or 3 (1.7%). The selection of webinar topics also received very high ratings, with 62.7% of respondents rating it 5 and 25% rating it 4. Six respondents (10.2%) rated the selection of topics as 3, while one respondent (1.7%) rated the selection of topics as 1. The scientific merit of the presented topics was rated from 2 to 5, with 32 respondents (52.3%) rating scientific merit as 5, 21 respondents (35%) as 4, 6 respondents (10%) as 3, and one respondent as 2. A total of 14 attendees contacted the presenters after the webinar to continue communication and discuss possible joint research topics. Webinar participants decided to present their research because they considered webinars an appropriate platform to share their results and to connect better with the scientific community, or because they wanted to gather useful comments and suggestions on research already conducted, as well as on the future direction of their ongoing research. A small number of respondents (2) reported that they gave presentations because it was an obligation

after receiving the STSM grant. In 13 cases (56.5%), presenters were contacted by colleagues who attended the webinar to discuss their results or to initiate collaboration in areas of mutual interest. The presenters were also satisfied with the technical organisation of the webinars: 17 (68%) rated the technical organisation as 5, and 8 rated it as 4.

The general opinion about webinars among all respondents is very positive, as shown in Figure 4.

For all: Do you find webinars an appropriate and useful tool for sharing research results and ideas among scientists?
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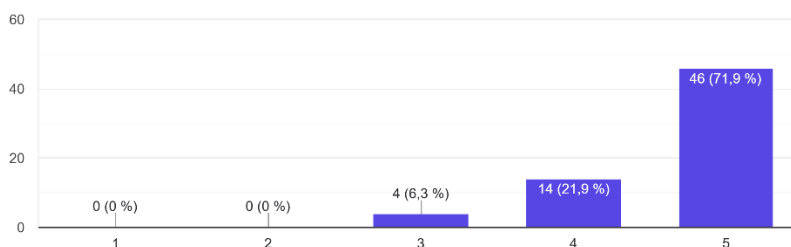


Figure 4 Distribution of ratings for overall satisfaction with the webinars

A particularly revealing and interesting part of the survey concerned the answers to the final question, in which respondents were asked, in one or two sentences, to describe how participation in the webinars had strengthened their commitment to the COST project's goals and their sense of belonging to a scientific community of around 500 scientists working on methods to minimise pesticide use. In most cases, participants expressed a very positive attitude, stating that participation in the webinars contributed to a sense of connection with researchers dealing with the same problem and similar research topics. Most participants reported that during the webinars they received information about new methods they could apply in their research and that the topics presented inspired them to develop new research projects.

Some participants noted that, compared with live meetings and gatherings, webinars are quite passive. They offer very limited opportunities for genuine scientific interaction, networking, and the development of new collaborations. Some respondents therefore recommended more in-person conferences and scientific meetings throughout the COST Actions. Such events would have given participants greater opportunities to meet new researchers, exchange ideas, establish collaborations, and develop joint research projects. However, it should be borne in mind that organising the recommended meetings requires considerable financial resources, whereas organising and running webinars is almost cost-free and the cost–benefit ratio is very favourable.

Some indicative testimonials:

In my opinion, these interactions are among the main purposes and added values of a COST Action. Spending a considerable amount of time attending webinars in front of a computer was not an adequate substitute for face-to-face scientific interaction. A stronger emphasis on in-person activities would have significantly improved the overall impact of this Action.

That was great to share concepts, IPM results and ideas on a range of topics and to have the opportunity to share approaches at different scales.

Participation in the webinars has strengthened my understanding of the COST project's goals and increased my motivation to contribute to its objectives. It has also given me a stronger sense of belonging to a diverse and collaborative scientific community working towards reducing pesticide use.

The participation in the webinars has significantly increased my awareness of new methods and approaches for minimizing pesticide use in agriculture. The webinars have also inspired new research ideas, particularly regarding the socio-economic aspects of pesticide reduction.

These webinars made it possible to cover and present a very broad range of topics, from many countries, i.e. many contexts for research and implementation of cropping systems with low or no pesticide. It also showed that the community was rich and strong, with many young researchers, building and describing amazing possibilities for a future sustainable agriculture in Europe, i.e. productive thanks to a successful crop protection and fully environment-friendly thanks to all innovations.

6. CONCLUSIONS

In general, webinars were effectively used in the project to achieve most of the research and capacity-building objectives. They were primarily used as a networking tool among scientists. Webinars were particularly effective in bridging separate fields of science and technology and in creating a strong scientific community with broad representation across Europe, focused on developing research solutions for zero-pesticide agriculture. The webinars brought together a very rich and strong scientific community, with many young researchers, who outlined impressive possibilities for future sustainable agriculture in Europe, that is, productive thanks to successful crop protection and fully environmentally friendly thanks to innovation. Through presentations of the results of STSMs, the scientific development of early career investigators and young researchers was supported. In addition, webinars helped establish connections with other project initiatives.