Federal Ministry
of Food
and Agriculture

C-IPM Coordinated Integrated Pest Management in Europe

Final Report

EU-Workshop
Demonstration Farms on Integrated Pest Management
24 and 25 May 2016, Bonn, Germany

A two-day joint international workshop on demonstration farms took place in Bonn on the 24th & 25th May 2016. The workshop was co-organized by the German Federal Ministry of Food and Agriculture, the European Commission DG SANTE and the ERA-NET "C-IPM" (Coordinated Integrated Pest Management in Europe; http://c-ipm.org/).

Sixty scientists, governmental officials, policy makers, and agricultural advisors, from 25 European countries (Annex 1), met to discuss and present current experiences with demonstration farms or other means of demonstrating IPM practices to farmers (e.g. experience groups) in EU Member States (MS). The aim was to identify synergies on the ongoing activities and objectives of demonstration farms or possibilities to develop such synergies, and discuss elements for best management practices for those EU MS considering the setup of IPM demonstration farms. In addition, the discussions also included an exchange on approaches on how to ensure the durability and permanent incorporation of the knowledge which farmers have acquired during their demonstration farm work and how they, in an ideal case, can become “ambassadors” for IPM for farmer colleagues and the general public.

24th May:

The first day of the workshop was dedicated to a visit of a demonstration farm for arable cropping. The meeting began with three presentations: the first on the German model project “Demonstration farms for IPM”, the second on the Chamber of agriculture of North-Rhine-Westphalia, and the third gave an introduction about the demonstration farm.

The participants were then split into two groups. A demonstration of a field sprayer equipped with different types of drift-reducing nozzles, a demonstration of the “easyFlow” sprayer filling system and the cleaning of sprayers with a continuous internal sprayer rinsing was given to each group. Meanwhile the other group visited arable crops demonstration fields (winter wheat, winter barley and sugar beet) with several spray windows and pesticide use intensities. Each group was led by an advisor who explained about the approach in the demonstration fields, their structure and major obstacles they face in terms of pest occurrence and their management through IPM.

25th May:

The second day of the workshop was held in plenary which included welcome addresses by the organizers and talks about national systems for demonstration farms from five MS (DK, FR, DE, IR and ES).

For further details about the presentations, please refer to the files which are either uploaded on the collaborative workspace of C-IPM (https://djfextranet.agrsci.dk/sites/c-ipm/ProjectMeetings/Forms/AllItems.aspx; for C-IPM partners) or on the website of the workshop (https://www.nap-pflanzenschutz.de/veranstaltungen/workshop-eu-demonstration-farms/registration/; for non-C-IPM members).

Welcome addresses:

Friedel Cramer, and Wolfgang Zornbach, Deputy head of the Plant Protection Division of the German Federal Ministry of Food and Agriculture (BMEL), welcomed the participants and opened the meeting. They thanked the funding organizations and colleagues for their support to the workshop and wished a successful meeting.

Antoine Messéan, the ERA-Net C-IPM coordinator thanked Wolfgang Zornbach for volunteering the organization of the workshop and welcomed the participants. He introduced C-IPM to the participants and the following the major points were highlighted:

- The ERA-Net C-IPM has been granted by the EC for 3 years (2014-2016) and has 34 Programme funders and managers as partners who will decide soon about its future;
- The ERA-NET aims to step up the cooperation and coordination of research activities carried out at National or regional levels;
- Besides setting up and funding transnational calls on IPM strategies and developing IPM tools, C-IPM has a focus on implementation and adaption in practice;
- Several thematic workshops were held and others are planned by C-IPM to enhance networks of infrastructures. A next workshop will be held in July on breeding for IPM (http://ihar.edu.pl/C-IPM_workshop.php) followed by another workshop on Drosophila suzukii in September 2016 in Greece;
- C-IPM has foreseen two calls, one organized in 2015 (funding 2016) and another ongoing in 2016 (funding 2017), each with about 6-7 million of Euros;
- The strategic research agenda (SRA) document has been finalized and it will be disseminated very soon. This document contains several relevant information including future challenges for IPM, overlaps and gaps and added value of

working together on topics of common interest and setting up a long term collaboration;

- Defragmentation and systems challenges are key for IPM and there is added value of coordinating IPM research to address these challenges.

Patrizia Pitton, from the European Commission DG SANTE, thanked again Germany for the organization and gave a talk on the Sustainable Use Directive (Dir. 2009/128/EC) and its implication for IPM in the European Union . She also talked about main ongoing actions for sustainable plant protection and the following were the major points discussed:

- Referring to the previous presentation stressed scarcity of expertise on IPM is an issue which should be considered on future agenda to improve the situation;
- A presentation was given providing main outcomes from national reports on IPM submitted by MS under Article 14 of the Directive, it highlighted the following achievements (state of play 2013);
- Most MS (25 out of 28) have advisory services for IPM in place and this means that there has been a lot of progress compared to a previous survey made in 2011 where only 15 MS had mentioned to have them. However, only 15 MS confirmed that advisory services are connected to technical scientific infrastructures such as diagnostic laboratories and further progress is needed to build up an effective network as well as to ensure feedback from and to farmers;
- Another step forward regards the availability of IPM guidelines with 20 MS confirming that guidelines on general principles of IPM are available in their countries while 6 more have planned to adopt them; and 16 MS confirming that crop specific guidelines are available and 3 more have planned to do so;
- With respect to IPM demonstration farms and other in-field dissemination actions: 13 MS confirmed that they have organized visits to IPM fields/demonstration farms/workshops for farmers while others 5 have planned such visits; interesting to note that 11 MS confirmed that they have organized a demonstration farms network while 6 more have planned to organize it . The positive exchange of experience facilitated by this workshop can provide inspiration on how to move on.

- For more information: please visit DG SANTE website http://ec.europa.eu/food/plant/pesticides/sustainable_use_pesticides/index_en.htm

- Finally, DG SANTE in this last months organized a temporary expert group composed by COM, EFSA and MS delegates following up on a proposal from the Council Dutch Presidency on sustainable plant protection. Main objective of the working group: to identify actions to accelerate availability of low risk products and speed up application of IPM. The group will report to the Agri-Council meeting of 27 June and recommendations from this workshop related to the importance of demonstration farms network, of best practices exchange and of research on IPM could indeed be part of the final agreed proposal for actions.

Inge Van Oost, from the European Commission DG AGRI Research and Innovation, thanked everybody and expressed her pleasure to join the workshop. She talked about the EU Framework Programme for Research and Innovation 2014-2020, EIP Agricultural Productivity and Sustainability, and H2020 Multi-actor approach linking with Operational Groups under Rural Development[1]. The following were the conclusions of her talk:

- European innovation partnership (EIP) was started in 2010 considering the need for new models of innovation to get the actors and to co-create the solutions. Interactive innovation is an idea put into practice with success;
- EIP is called "multi-actor approach" under H2020. A good mixture of scientists and non-scientists is expected within EIP because the evaluators would like to see the involvement of all actors as they have practical knowledge and apply what has been generated by a project;
- EIP objectives are targeted to the needs and opportunities for end-users and not for publications in high impact journals although dissemination requirement has been strengthened;
- Thematic networks is a coordination action and not aimed to R&I. Thematic workshops should produce materials for end-users and that is why its title has

[1] For more information:

- EIP brochure on thematic networks & practice abstracts
- http://ec.europa.eu/eip/agriculture/sites/agri-eip/files/eip-agri_brochure_thematic_networks_2016_en_web.pdf
- EIP common format for practice abstracts
- https://ec.europa.eu/eip/agriculture/en/content/eip-agri-common-format
- Videostreamed seminar on drafting practice abstracts:
- http://www.ncp-biohorizon.net/events?cmd=showDetail&id=33
- Links to NRNs: National Rural Networks can help in partner search between H2020 consortia and EIP Operational Groups

http://enrd.ec.europa.eu/enrd-static/networks-and-networking/nrn-information/en/nrn-information_en.html.

been changed to "compiling knowledge ready for practice with clearer focus on primary production's need;

- H2020 calls 2015 had 16 new Multi-Actor projects, including 7 Thematic Networks while Horizon 2020 calls 2016-2017 have 17 calls. However, there is not any thematic workshop on IPM and IPM could thus be a topic;

Presentation on national demonstration farms

Poul Henning Petersen, SEGES (Danish National Advisory Center), gave a talk entitled: "Implementing IPM through demonstration farms and in the agricultural advisory service in Denmark". The following were the conclusions:

- SEGES is a national advisory agency, funded by farmers, independent of chemical industries, and a bridge builder between research and practice. The agency manages a range of development and service tasks for the regional 30 farmer-owned advisory companies;
- "As little pesticides as possible but as much as necessary" is a motto used for crop protection by SEGES;
- Education of advisors, teachers and contractors are major tasks of SEGES. It also organizes and reports field trials;
- 12 % of arable crop growers have received targeted IPM advice in Denmark in the last two years through a project on IPM implementation. SEGES disseminates IPM toolboxes available for major crops, crop-specific IPM guidelines, IPM inspiration sheets which is available for all members of the advisory service.
- There have been 7 demonstration farms in total in Denmark each focusing on a specific tool as a part of an IPM project and receiving specific advice on this. As a follow-up on this project smaller projects are initiated for farm specific advice on IPM in a variety of crops (27 farm projects in 2016).;
- IPM point system, which ranges from 0 (no uptake of IPM principles) to 100 (fully uptake) is used for self-assessment and monitoring of IPM impact. This system was a way to make the 8 principles concrete for advisers and farmers;
- A positive correlation between IPM awareness and practice has been observed in Denmark. The survey also showed that awareness is higher than implementation, demonstrating the difficulties in implementing IPM in current practice;

- There is no ongoing survey or specific means for measurement of IPM implementation in Denmark
- For more info: IPM on the web www.dansk-ipm.dk.

Nicolas Munier-Jolain, from French National Institute for Agricultural Research (INRA), presented DEPHY, a large network demonstrating cropping systems with low pesticide use in France. The following were major points discussed:

- The network was launched in 2010-2011-2012 and the aim is to demonstrate that it is possible to reduce the reliance on pesticide while maintaining economic profitability;
- Two complementary ways are used for demonstration: demonstrate cropping systems with low pesticide use and demonstrate changes in farmer's practices;
- The network is composed of 1900 farms which will be extended to 3000 farms within the new call 2016. Twelve millions of euros are allocated annually for DEPHY advisors who coordinate groups of volunteer farmers and accompany them in changing their cropping systems, collect data communicate and disseminate;
- AGROSYST is a key system for data management and knowledge produced on IPM is disseminated through booklets, articles, short movies etc;
- Antagonism, no effect and beneficial effect, between pesticide use reduction (TFI) and profitability are observed across different regions of France.

Annett Gummert, Coordinator of the IPM-Demonstration Farm Project in Germany, presented the ongoing work on the German model project "Demonstration Farms for IPM" and the following were the conclusions:

- The objectives of the demonstration farms in Germany are: implementation and demonstration of IPM on 66 selected farms, analysis of indicators for IPM implementation, and knowledge transfer and public relation work;
- The farms represent major production sectors such as apple growing, viticulture, arable cropping, vegetable growing and hop production.
- Demo farms not only implement IPM but they also motivate other farms to do the same thing through meetings, farm days, dissemination through the project website (http://demo-ips.jki.bund.de/) and publications;
- To ensure a high level of IPM implementation, demofarms receive intense support and supervision by plant protection advisors who provide for

comprehensive assistance when introducing new procedures and are responsible for monitoring of crops, pests and diseases and data collection;

- Both agronomic, monitoring and treatment data are collected and analyzed. To date, only preliminary results are available;
- A general challenge is the lack of availability of sustainable biological, physical and other non-chemical measures which provide satisfactory and efficient pest control

Michael Gaffney, from Teagasc (Agricultural and Food Development Authority), presented a synopsis of work on IPM being funded in Ireland under EPIC Project (Establishing a platform for Integrated Pest management in Irish Crops) and also on the Teagasc managed BETTER farms programme. The presentation was entitled "applied Research and Demonstration Farms: Tools for IPM Knowledge Transfer in Ireland". The following were the key points:

- Teagasc is an organization which has researchers, crop specialists and advisors with sectorial background for arable and horticultural crops;
- Teagasc have 3 arable BETTER (Business, Environment and Technology through Training Extension and Research) farms which assist Irish arable farmers to up skill on existing methods and practices, to test and adopt new farm technology and business management methods, and to improve links between the tillage farm, advice and research;
- Technology transfer is a key function of Teagasc. BETTER farm programs have been identified as having a key role in this regard (National Research and Agricultural Policy) and provide research with 'direct contact' as to the key issues at farm level - can provide direction to research programme;
- There are positive reaction of growers to demonstration experiments being conducted locally, benefits to advisors supporting BETTER farms (200 clients approx.), dissemination of results to 'network' (merchants, independent agronomists – sector wide traction);
- (4) Alignment of main research with advisory output – consistent information to clients/farmers advisors suggest farmers on strategic choices and farmers take the decision.

Nerea Arias, Tecnologías e Infraestructuras Agroalimentarias (INTIA), Spain, gave a talk entitled "Demonstration farms on IPM in Navarra (Spain) with a practical case from LifeAGROintegra Project".The following were the conclusions:

- LifeAGROintegra project focuses on the demonstration of sustainable alternatives to chemical products for European crop protection (LIFE13 ENV/ES/000665)and aims to implement IPM strategy with all stakeholders and promote more sustainable alternatives for pest controlling
- Collaborative approach is used to obtain the objectives between regional government, advisory services, agro-industries, cooperatives and farmers;
- Advisory services play an important role through an extensive techniques network in the region, direct contact with farmers and agro-industries, continuous feedback, and a yearly meeting to analyze results and plan following actions;
- Network of demonstrations is distributed across Navarra and structured in 4 crop groups: horticultural, small grains, fruit trees and grapevine.

Open discussion and exchange about current practices, needs and elements for best practices

Discussion points which emerged based on the presented results of the different national demonstration farm approaches were:

- Profitability is a key issue while making decisions in adopting IPM and thus IPM system should be economically viable for growers;
- TFI has limited usefulness as results presented from DK and DE at the workshop show an increase in TFI in recent years in individual cases as such the TFI has limited explanatory power regarding the reduction of risks related to IPM or the relative toxicity of the pesticides used. Consequently, explicitly described indicators and transparent indicators are needed for risk evaluation;
- Indicators that could asses the actual impact of pesticide uses on the environment are needed instead of focusing on TFI only. TFI is not the best indicator but still is a measurement to express pesticide use intensity and serves the objective of communicating a reduced reliance on pesticides;
- Research is needed on the harmonization of risk indicators. The SUD clearly states this (Art. 15/1) and the Commission should work on this challenge. HAIR indicators which were results of an old DG ENV DG RTD project are currently used only in NL. DG SANTE organized a workshop in 2012 with MS experts to prove the available HAIR indicators methodology. The high resources demand, lack of update data and the overall complexity of HAIR methodology showed the need for further discussion to explore proper approaches for harmonized risk

indicators at EU level. In the meantime, the Directive provides for MS to set their own national indicators which often are implementation progress indicators. ;

- COM followed up the work on indicators within the OECD experts group which has finalized in 2015 a survey on indicators and is thinking about the potential indicators to measure progress of IPM. The Commission is for now at the beginning of the discussion in this regard;
- Long term projects are needed for IPM because even 5 years projects are not sufficient to produce good results for IPM. However, within H2020, the call on demonstration farms specifies that the projects can be longer than 4 years and therefore projects of 6-7 years are still possible although the budget limit could be a constraint in that case;
- The role of retail chains, supermarkets, media etc. in fostering IPM would have been interesting to discuss at this workshop but was not in scope of the workshop;
- Data generation and management and communication on best management practices is key to enhance IPM uptake but also to enhance comprehension from general public;
- Market competitiveness is an important obstacle for farmers to reduce the reliance on pesticides as products coming outside from Europe (no IPM) are cheaper than those produced with IPM;
- Because there are new problems in agriculture (new pests and pest resistance issue and no more new modes of actions are available) there is a need to invest for the future research to develop alternatives to pesticides.

Annex 1: List of participants

Name, Surname	Institution
European Commission	
OShea, Dara	DG SANTE EU EU Commission
Pitton, Dr. Patrizia	DG SANTE EU Commission
Van Oost, Inge	DG Agriculture and Rural Development EU Commission
Austria	
Fuhrmann, Elfriede	Federal Ministry of Agriculture, Forestry, Environment & Water Management
Shala-Mayrhofer, Dr. Vitore	Austrian Chamber of Agriculture
Wolf, Michael	Federal Ministry of Agriculture
Belgium	
Demeyere, Annie	Flemish Departmentof Agriculture and Fisheries
Croatia	
Bokulić Petrić, Anamarija	Ministry of Agriculture
Novakovic, Vlado	Ministry of Agriculture
Czech Republic	
Radová, Štěpánka	ÚKZÚZ
Urban, Jiří	ÚKZÚZ
Denmark	
Hansen, Janne	Aarhus University
Petersen, Dr. Poul Henning	SEGES (National Agricultural Advisory Center)
Sønderskov, Dr. Mette	Aarhus University
Estonia	
Hillep, Evelin	Ministry of Rural Affairs of the Republic
Koppel, Dr. Mati	Estonian Crop Research Institute

Name, Surename	Institution
Finland	
Jern, Tove	Ministry of Agriculture and Forestry
Nissinen, Dr. Anne	Natural Resources Institute
France	
Dreux, Laure	INRA

Gautier-Hamon, Gérard	FR-MAAF
Lamichhane, Dr. Jay Ram	INRA
Messéan, Dr. Antoine	INRA
Munier-Jolain, Dr. Nicolas	INRA
Pillet, Emeric	Can Dephy - APCA

Germany

Bischoff-Schaefer, Monika	Julius Kühn-Institut
Dachbrodt-Saaydeh, Silke	Julius Kühn-Institut
Groß, Bernhard	Federal Office for Agriculture and Food
Gummert, Dr. Annett	Julius Kühn-Institut
Helbig, Jan	Julius Kühn-Institut
Kehlenbeck, Dr. Hella	Julius Kühn-Institut
Schumacher, Stefanie	Federal Office for Agriculture and Food
Zornbach, Dr. Wolfgang	Federal Ministry of Food and Agriculture

Geat Britain

Cuccato, Dr. Giulia	Defra
Ware, Tracey	Chemicals Regulation Directorate, Health & Safety Executive

Greece

Gkilpathi, Dr. Dimitra	Plant Protection Department-Directorate of Plant Produce Protection
Tsagkarakou, Dr. Anastasia	Hellenic Agricultural Research Organisation-Demeter

Hungary

Gál, Péter	National Food Chain Safety Office
Kiss, Prof. Dr. Jozsef	Szent Istvan University
Mészáros, Ildikó	National Food Chain Safety Office

Ireland

Gaffney, Dr. Michael	Teagasc
Macken, Sheila M	Pesticide Controls Division, Dept Ag, Food and the Marine
Rennick, Gordon	Department of Agriculture, Food and the Marine

Italy

Liberati, Dr. Davide	Ministero Politiche Agricole Alimentari e Forestali

Latvia

Bucena, Linda	Latvian State Plant Protection Service
Lestlande, Anitra	Latvian State Plant Protection Service

Lithuania

Baškys, Darius	State Plant Service under the Ministry of Agriculture
Ruzgiene, Dijana	The Lithuanian Agricultural Advisory Service
Semaskiene, Dr. Roma	LRCAF, Institute of Agriculture

Malta

Cilia, Nicole	Malta Competition and Consumer Affairs Authority

Netherlands

Wubben, Dr. Jos	NVWA

Norway

Eikeland, Astrid	Norwegian Ministry of Agriculture and Food
Mjaerum, Dr. Jon	Norwegian Agricultural Extension Service

Poland

Danielewicz, Jacub	Institute of Plant Protection - National Research Institute
Ogrodowczyk, Dr. Piotr	Ministry of Agriculture and Rural Development

Romania

Baiculescu, Doina	National Phytosanitary Authority
Din, Lustina	National Phytosanitary Authority

Slovakia

Barok, Dr. Stanislav	Central Controlling and Testing Institute in Agriculture
Škarbová, Dr. Bronislava	Min. of Agr. and Rural Development

Slovenia

Sporn, Andreja	Admin. f. Food safety, Veterinary sector & Plant protection
Urbancic Zemljic, Marjeta	Agricultural Institute

Spain

Arias, Nerea	INTIA S.A

Sweden

Gerdtsson, Anna	Swedish Board of Agriculture
Johansson, Dr. Leif	Swedish Board of Agriculture