



# ENDURE

European Network for Durable Exploitation of crop protection strategies

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**DS4.9: Report with description of performance and functionalities of ENDURE IC including results of tests of advisors**

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## Glossary

ENDURE IC	web application ENDURE Information Centre (merged ENDURE - ALPS and EIC)
ENDURE-ALPS	web application ENDURE – Alternative plant protection measures
EIC	web application ENDURE Information Centre
Report	Summarizes all the data inserted by an expert to describe a certain application of measure.

## Summary

The ENDURE IC is an online web-application developed by scientists with the support of advisors. It enables searches for crop protection measures based on a combination of crop, pest and region. The goal is to disseminate a selection of European crop protection knowledge on IPM and non-chemical alternatives. The target group is foremost advisors. Currently ENDURE IC contains 365 summaries about IPM in arable crops, fruits and vegetables. The summaries represent information about 78 different crops, 239 pests, weeds and diseases in 14 European regions. First initiatives for uploading summaries and related national documents were linked to the first ENDURE case studies and represent mainly entries concerning crop protection in potato, wheat, weed management and pomefruit. In the course of the development of the ENDURE IC a series of internal and external tests of the user interface, especially the search mechanism, and the upload procedures were conducted with the potential users. Therefore advisors and researchers were invited to test sessions and to give feedback on the system which was evaluated. The outcome of the evaluation was analysed and integrated in the further developments of the application. The test results confirmed that the ENDURE IC is seen as a useful source of information additional to the national sources commonly used by advisors. The search mechanism of the application is well developed but needs to be improved especially regarding the text search mechanism and other features which will significantly improve the user friendliness and ensure a good recognition of the ENDURE IC as a point of reference.

The ENDURE IC contains documents of all participating countries in SA4.1: Germany, Denmark, France, Poland, Spain, United Kingdom and The Netherlands.

**Teams involved:** Partners in SA4.1 are JKI, DAAS, AU, ACTA, IHAR, UdL, PRI, RRes and PPO. All partners contributed to this deliverable by descriptions, tests and/or participating in discussions.

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# 1. Introduction

This Deliverable DS4.9 is the results of the merging of the 2 former Deliverables:

- 1) DS4.9: ENDURE IC is filled with relevant documents about IPM measures related to the work of 3 case-study groups and tested by an ENDURE Advisory Network
- 2) DS4.12: Report about the test with external experts of the functionalities and the content of ENDURE-ALPS

At the start of the ENDURE network two different applications were developed. ENDURE - ALPS as tool for knowledge management and a search engine for non chemical alternatives in plant protection primarily targeting researchers; and the ENDURE Information Centre (EIC) addressing the needs of advisors and covering the broad range of integrated crop protection. In the beginning of the 3<sup>rd</sup> JPA it was decided to merge the two systems to make use of each others ideas, concepts and to maximize the synergies from both the systems. With the merge of both systems it became apparent that the ENDURE IC will be foremost designed to support advisors and extension work. Scientists of the network had developed their tools (EuroWheat, EuroResist, etc.) to exchange very specific knowledge. As another consequence of the merge, there is also an overlap between the originally proposed deliverables related to the EIC and ENDURE-ALPS. Finally this report covers both deliverables for the new merged system ENDURE Information Centre (ENDURE IC).

The ENDURE IC is an online web-application developed by scientists with the support of advisors. The goal is to disseminate a selection of European crop protection knowledge on IPM and non-chemical alternatives. The target group is foremost advisors. In the course of the development, a series of internal and external tests of the user interface, especially the search mechanism, and the upload procedures were conducted.

**Subjects of this report** are the tests of the user interface and search mechanisms with external users (not involved in the ENDURE IC development). This user feedback provided valuable information on the needs and expectations of advisors to the application. The ENDURE IC tests focused on the advisor as a target group.

The section about the test phase of ENDURE IC and fine tuning for the final version describes test results and refers to the formerly two existing applications EIC and ENDURE-ALPS and the ENDURE IC feedback sessions.

## 2. State of the art and content ENDURE IC

The technical state of the art and the functionality of ENDURE IC were recently described in Deliverable DI4.12 “ENDURE IC online available based on the data base structure of ENDURE-ALPS” and DI4.13 “Beta version of the joint ENDURE IC based on user feedback”. The application is online available at: <http://eic.endure-network.eu:8080/webui/>.

The goal of the ENDURE IC is to provide a high quality selection of sources and documents which have the potential to be shared across Europe. The selected sources provide information about plant protection practices with an added value going beyond the level of good plant protection or farming practice. Sources can be research reports, PhD thesis, journal and magazine articles, “grey literature” such as trial reports and other documents such as websites, leaflets, reports, videos, articles, newsletters, books etc. This also includes review documents and information about national projects contributing to IPM and the promotion of non-chemical alternatives. Procedures and ideas to collect, describe and upload content are described in Deliverable DS4.10 named: “*A document with: procedures and appointments to extract documents from other working groups of ENDURE; a procedure to update the content of ENDURE IC; an idea or solution how to deal with not-free-accessible information; Exchange with ENDURE-ALPS; an idea how to sustain ENDURE IC after the ENDURE program.*”

Currently ENDURE IC contains 365 summaries about IPM in arable crops, fruits and vegetables. The summaries represent information about 78 different crops, 239 pests, weeds and diseases in 14 European regions.

Related to the topics of the first four case study groups of ENDURE focused on wheat, weed and pomefruit (apple) the following number of records corresponding with a summary can be found in ENDURE IC.

*Table 1: Number of records related to the first 4 case study groups of the ENDURE network*

Topic of ENDURE case study	Number of records in ENDURE IC
Potato	154
Wheat	123
Weed	120
Pomefruit (Apple)	84

Keep in mind that the sum of records exceeds the total number of summaries due to doublets (e.g. a document about weed control in wheat).

Plans have been made for uploading new documents from the SA4.1 group. The Endure groups have also been contacted for their contribution. Some Endure groups have started the process with selecting relevant information and have uploaded documents. The different groups (both old CS and new SCS) will be contacted again with a reminder of their obligation. The SA4.1 team can help the groups with the uploading if necessary. Contact persons in non-endure countries (Norway, Sweden, Belgium and East European countries) will be contacted for relevant documents.

### 3. Test methodology

In the course of the ENDURE IC development (the merged application of ENDURE-ALPS and EIC) a number of tests were conducted to test and improve the functionalities of the overall performance of the application. The search mechanism (user interface) was first tested internally by the SA4.1 partners and later by advisors, the target group of the system. The functionalities for uploading content were tested internally by SA4.1 members but are not subject of this deliverable.

The tests were conducted at different locations and in different countries according to a harmonized test procedure (appendix 1) and format (appendix 2 and 3) protocol.

The following table 2 provides an overview about the conducted tests

*Table 2: Overview of tests by SA4.1 team members and advisors*

Test no.	Time	Tested by	Participants
1	February 2009	SA4.1 members (individually)	DE, DK, FR, NL, UK
2	March 2009	SA4.1 members (group session)	DE, DK, FR, NL, UK
3	June 2009	Group of international advisors (group session)	DE, NL, FR,DK, UK
4	July 2009	National advisors	NL
5	December 2009	ENDURE IC capacity test	SA4.1 members: DE, DK, FR, NL, ES
6	December 2009	National Advisors	ES
7	December 2009	National Advisors	FR
8	December 2009	National Advisors	DK
9	January 2010	National Advisors	UK, DK
10	February 2010	National Advisors	DK

The tests by users were either organized as individual tests or in group sessions, for group session 4-6 advisors were invited. After a general introduction about the ENDURE Network, the goals and objectives of the ENDURE Information Centre were introduced to the participants. The goals of the tests were explained and then participants started testing individually according to the provided test protocol and filling the test form. In the next phase a discussion about the overall impression, specific issues of the test and in the concluding phase the usefulness of the tool for daily practice of advisors was discussed.

## 4. Test results

During the individual test session the overall impression of the interface and its functionality, the search mechanism itself and the success in finding the results as well as the content of the summaries and its applicability were addressed. In the evaluation part of the test again the general applicability of ENDURE IC content for their work was addressed.

The tests showed that the information needs and structure meet the interests of advisors. The feed backs are summarized in the following paragraphs.

### 4.1. Layout and search

The interface layout received positive feedback by the test persons. A general introduction at the ENDURE IC homepage was appreciated. It is intuitively and easy to use, the translation of the interface in various languages was appreciated and helps to overcome the first barrier of using a new system.

The search mechanism and display was improved considerably after earlier user feed back to its current state. It is now very well rated by users and provides fast access to the information. The criticism about the limited display of key words was improved by expandable column width and the '*Clear all*' function of the '*Search*'-Button as recommended in most of the test sessions.

The overview list of the search results provides a good first idea about the content and is useful. A ranking of recent updates, ENDURE products and concerning the practicability was suggested and has been implemented.

Suggestions for further improvements in the future are:

- “mouse over”-explanations of the different buttons;
- more apparent visibility of the search icon;
- improvement of the free text search with key pests searchable in national languages;
- improvement of keywords (e.g. common names of vegetables, wrong translations, missing names of relevant pests and diseases);
- indication if the search is completed;
- an indication when users have to pay for a document.

### 4.2. Summary presentation

The layout of the summaries was well accepted in general. The search combination is displayed on top of the summary. The English summaries and especially translated tables and graphs are useful for advisors and contain important technical information which is usually not accessible due to other languages in the original document.

The accessibility of some attached sources and URL was not possible or limited and therefore criticized. Problems regarding speed, connectivity and stability of the system occurred during some tests. The problem was identified and technical improvements implemented and the capacity tested and modified.

Other suggestions included to display an indication about fees for the accessibility of sources in the results overview or to directly download the all original documents. The later can not be considered due to IPR rules.

Altogether the presented summaries satisfied the users and provide additional useful information, but the quality of a part of summaries and translations should be further improved.

For more satisfying searches more content is needed. Especially about the major crops and pests and diseases with high impact on yield and/or product quality.

### 4.3. Added value of the ENDURE IC

Advisors were convinced about the idea of ENDURE IC. The website and database are very interesting. It gives the opportunity to search for plant protection solutions for the same problem in other countries. Some doubts were raised concerning use for every day practice under regional conditions; such relevant information will be retrieved from national sources and databases. Comments showed that the ENDURE IC is seen as a tool for specialists with a task in the primary collection and absorption of international results and their adaptation to national conditions to generate national advice and recommendations.

Language barriers were inevitably mentioned as important. The possibility to search in different languages and the display of English summaries are useful. Complementary translation tools will not be implemented but are available online.

It was mentioned that some advisors have customers in neighbour countries and other European countries, especially in such cases the ENDURE IC is a useful tool to find information about pests, weeds and diseases and measures not occurring in the home country.

## 5. Evaluation, improvements and conclusion

It is confirmed from feed backs that the ENDURE IC is a central source of useful information about IPM across different European countries. The collection of summarized national crop protection information contributes to an enhanced accessibility of knowledge across Europe. Advisors can use the tools to gain additional information beyond their national experiences and sources.

The widespread adoption and use of the application depends on easy and intuitive functionality of the user interface and dissemination of the tool to the relevant users. To overcome the inevitably existing languages constraints the search interface has been translated into 6 languages.

Crucial points at short term are the text search, the use and handling of keywords, the quality of the summaries and the number of documents. Therefore the remaining time will be used for improvements of the user friendliness of the application and the above mentioned points. The uploading of validated 'ready-to-use' documents about integrated measures to control pests weeds and diseases with high impact on yield and/or product quality will be encouraged. The ENDURE advisory network will be used to spread the news about ENDURE IC.

In conclusion, the ENDURE IC faces the various needs and expectations of its users and will respond to their needs. Altogether the ENDURE IC has improved considerably since its first introduction and provides a good central reference point for IPM across Europe.

## Appendix 1 Document for test facilitator

Background information and proposed test process for the facilitator of the of the external test of ENDURE IC.

### About the test

The test is a mix between individual testing and group discussions. It is important to start with the individual part to prevent dominant persons influencing feed back from others.

Invite 4-6 advisors (in week 24, 25 or 26) with interest in potato and crop protection to join the meeting. You need a room with a computer for each participant and a round table for discussion and a flip-over to make notes. Below the process for the meeting is given (in total 2 hours).

### Procedure of the test

- 1) 0.00-0.25 h. A first conversation between testers and test facilitator (participant of project team). Think about introduction participants (if the do not know each other), Introduction to ENDURE, ENDURE IC and goals of the test. For this you can make use of text below (*in italic*)
- 2) 0.25-0.60 h. Individual test: the tester works on a few tasks individually and makes notes about what is going well /not well. The tests consist of a first impression and specific search questions.
- 3) 0.60-0.80 Plenary: Group evaluation of the test with testers and project team
- 4) 0.80-1.20 Plenary: Group discussion about relevancy, connections and associations between own daily practice and current and future ENDURE IC

*Ad1. It is important that you are clear in goals and the state of the art of ENDURE IC. You can make use of this text:*

#### *What is ENDURE Information Centre?*

*ENDURE Information Centre (ENDURE IC) disseminates information on crop protection. It creates an overview of ways sustainable crop protection can be implemented in European agriculture.*

*ENDURE IC is a central point of reference for extending recommendations and advice for extension services and advisors concerning all aspects of crop protection.*

#### *What kind of information?*

*ENDURE IC offers ready to use information about Integrated Pest Management. This means the information is scientifically sound, but also:*

- *Tested in field*
- *Practical to adopt*
- *Cost-effective*

*And of course aimed to result in less input and less dependency on chemical inputs.*

*The selection of documents is still limited to integrated crop protection in potato. At the end of 2008 information for weeds, wheat, pommes fruit and tomato will be added. In 2009 new crops will enter ENDURE IC. Next to advisors, the target group of ENDURE IC will be broadened to policy makers.*

#### *What are the goals of the test:*

- *To get structured feedback from advisors on the content and performance of ENDURE IC.*
- *To get ideas how ENDURE IC should develop further and how it can support advisors in their daily work.*

*Ad2.* Ask the testers to go to their computer and hand out a printed version of the document: TesterExternaltestEIC.doc.

The tester can make his/hers notes on this paper.

*Ad3.* Ask testers to sit together and start the evaluation.

Collect main remarks on a flip over to get an idea of the most important comments and let testers react on each others remarks. Don't forget to collect finally all papers.

*Ad4.* Start the discussion with the following questions

- Do you see an added value of ENDURE IC for your daily practice?
- How can this added value be improved?
- How should a relation between ENDURE IC and farm advisors or a farm advisors network be established?

Write down main conclusions on the flip over.

When you close the session you can ask if one of the testers is interested to join the international meeting in Northern France during the potato manifestation in September. There we want to present ENDURE IC for public. Besides we will set up a small discussion group with European advisors about international information gathering and sharing in relation to ENDURE IC. (Maybe you can arrange budget for travelling for the advisor?). After the discussion group the advisor is free to visit the manifestation.

After the meeting, make a summary of around 2 pages about the test results and mail it to the participants of SA4.1

## Appendix 2 Document for external test

Proposed test format for the tester of ENDURE IC to be used in a group test session .

### Document for tester

**Name tester:** .....

**Date test:** .....

### Task 1. Find ENDURE Information Center

Go to ENDURE IC via <http://.....>

### Task 2. Free surfing

Take 5 minutes time to surf freely on ENDURE IC. What is your first impression?? Write the answers below.

#### 2.1 As positive points I mention:

- 1)...
- 2)...
- 3)...

#### 2.2 As points to improve I see:

- 1)...
- 2)...
- 3)...

#### 2.3 What are your (additional) comments on design and navigation

.....

### Task 3. Search documents

***(choice of documents has to be made in relation to the information need of the testers/advisors, under you find some examples)***

- Find a document about *Erwinia* in the *United Kingdom*, read the summary and glance through the complete document.
- Find documents from *France* published in *2006*, read the summary and glance through the complete document.
- Find a document about *Herbicides* and *Potatoes*, read the summary and glance through the complete document.
- Make an own search-query.

3.1 Are search results clear?

3.2 Are the one line summaries satisfactory?

My comment:.....

3.3 Give the summaries sufficient information?

My comment:.....

3.4 Are the original documents relevant and useful for you?

My comment:....

### Task 4. Other remarks and points for discussion

1).....

2).....

3)...

## Appendix 3 User test format for individual tests

### ENDURE Information Centre: user test

Your profession:  
 Advisor  
 Others, namely:

**Mark the number that gives your opinion**

	1	2	3	4	5
	complete disagree			complete agree	
The information meets my needs	1	2	3	4	5
The information is useful	1	2	3	4	5
It helps me to find solutions about IPM	1	2	3	4	5
The website is easy to use	1	2	3	4	5
I can use the site without manual	1	2	3	4	5
The site is easy to use and for incidental users and for regular users	1	2	3	4	5
I would recommend the site to colleagues/advisors	1	2	3	4	5
I will use the site for sure	1	2	3	4	5

**What do you think is positive of this site /information?**

**What do you think is negative of this site / information?**

**Suggestions for improvement:**