

The ENDURE Network: pooling resources for the sustainability of crop protection in Europe

Antoine Messéan, INRA
ENDURE coordinator





Providing information, tools and services to scientists, policy and farm advisers, and trainers concerned with Integrated Pest Management

IPM is a sustainable approach to managing pests by combining biological, cultural and chemical tools in a way that minimises economic, environmental and health risks.

2007

4 years of EC financial Support



2010

ENDURE ERG: self funded Network (14 founding members)



FOOD
QUALITY
AND
SAFETY



The ENDURE network



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Research

- INRA - FR
- WUR - NL
- JKI - DE
- RRes - UK
- CNR - IT
- Agroscope - CH
- IHAR - PL
- CIRAD - FR

Extension

- VFL - DK
- ACTA - FR

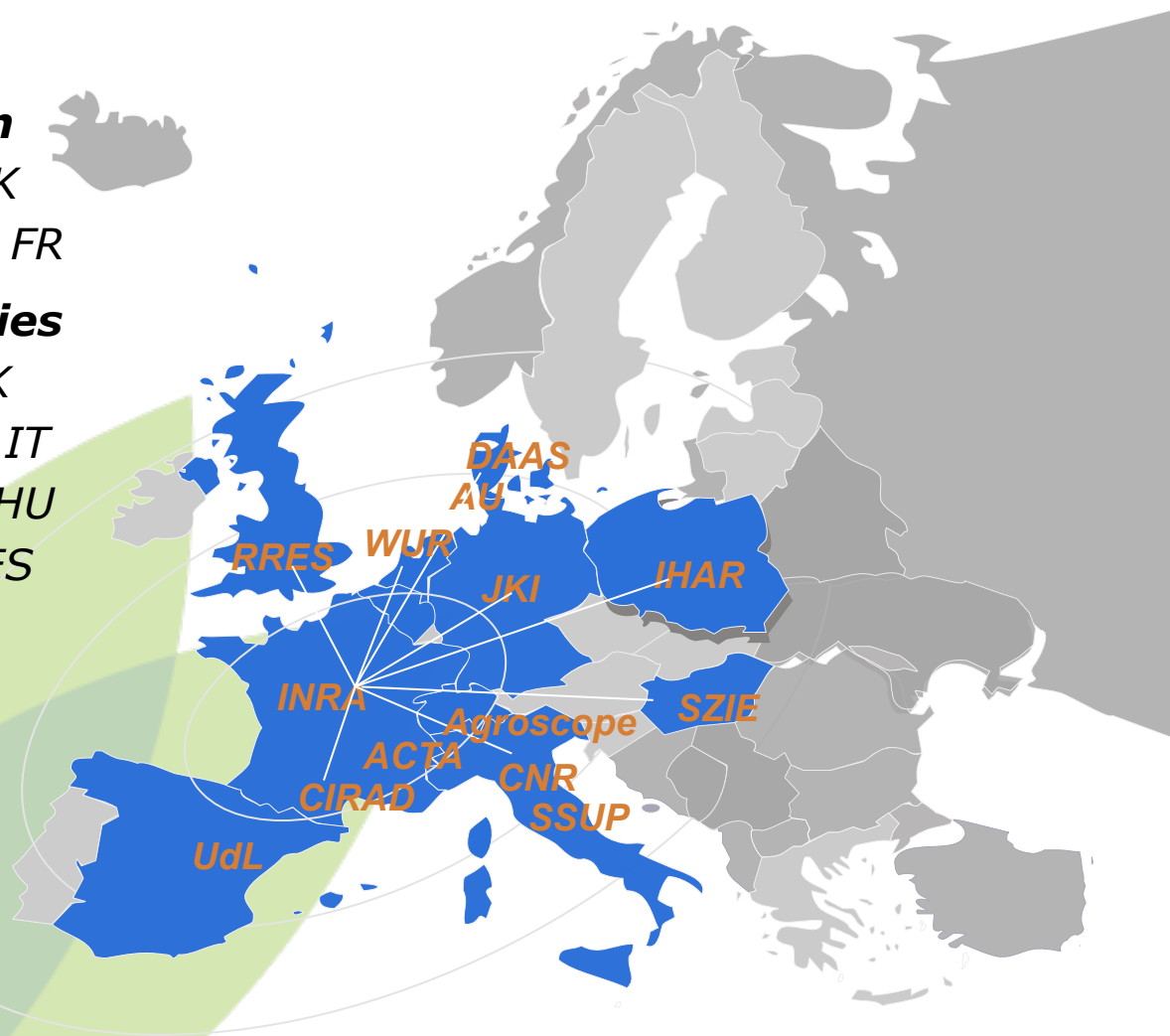
Universities

- AU - DK
- SSSA - IT
- SZIE - HU
- UdL - ES

→ trans-nationality
→ trans-disciplinarity

3 main target audiences

- **scientists**
- **advisers**
- **Policy makers**





- ✿ Regulation framework aiming at reducing the pesticide use / dependency
- ✿ Need to change practices, or even systems
- ✿ Need to take into account a wide range of assessment criteria, balancing the different components of sustainability
- ✿ Need to design innovations considering a real *break-away* from current cropping systems



The continuum (Cliff Ohmart, ENDURE Conference 2008)

ENDURE objectives



- ✿ **Contribute to R&D defragmentation by sharing research capacities and developing a multi-disciplinary approach**
 - ✿ **Constitute a forum for future initiatives in research, extension and policy in the field of IPM**
 - ✿ **Act as a platform for launching crop protection related projects**
 - ✿ **Play a leading role in building momentum on IPM-dedicated research at the EU level**
- Become a major European and International scientific reference point on crop protection**

Three major targets



- ❁ For **researchers**, build research synergies and make research tools available to the scientific community;
- ❁ For **decision-makers**, provide science-based support for the implementation of the Framework Directive on the sustainable use of pesticides;
- ❁ For **advisors**, produce practical information to support farmers in their transition towards Sustainable Crop Protection and help networking advisory systems across Europe;



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SOME ENDURE OUTCOMES

ENDURE case studies



🌿 Crop Case studies on 9 selected specific issues

Crop	Pest
Wheat	Foliar diseases
Potato	Late blight
Tomato	White flies
Pomefruit	Scab, brown spot & codling moth
Integrated Weed Management	Row crops (maize)
Maize	All pests
Field vegetables	Biofumigation & landscape management
Banana	<i>Mycosphaerella</i> , black weevil & nematodes
Grapevine	Diseases, grape berry moth & weeds

🌿 System Crop Case studies: holistic approach

From Science to Field
Tomato Case Study – Guide Number 1

Evaluation of Tomato Whiteflies in Europe

Johel André, IRTA, Spain
José Luis García, IRTA, Spain
Giovanni Corbelli, IRTA, Spain
Gemma Rosenthal, IRTA, Spain
Pharmaceutics, CIBIO, France

From Science to Field
Potato Case Study – Guide Number 2

Reducing Priority of Late Blight

Didier Andrivon, INRA, France; Bert Evenhuis, Denix Gaucher, ACTA, France; Josefa Kapra, Bert Nielsen, AU, Denmark, Michigan

Fungicides for Late Blight

Didier Andrivon, INRA, France; Bert Evenhuis, Denix Gaucher, ACTA, France; Josefa Kapra, Bert Nielsen, AU, Denmark, Michigan

From Science to Field
Potato Case Study – Guide Number 3

Using Cultivars to Reduce Insect

Didier Andrivon, INRA, France; Denis Gaucher, ACTA, France; Bert Nielsen, AU, Denmark

From Science to Field
Potato Case Study – Guide Number 4

Using Decision Support Systems to Combat Late Blight

Didier Andrivon, INRA, France; Bert Evenhuis and Huub Schepers, Denix Gaucher, ACTA, France; Josefa Kapra and Renata Leisecka, Bert Nielsen, AU, Denmark; Michela Ruocco, CNR, Italy

From Science to Field
Integrated Weed Management Case Study

Maize Cropping With Lactucastrum -hiride

From Science to Field
Wheat Case Study – Guide Number 1

Using Cultivar Resistance to Reduce Fungicide Input in Wheat

Lise Nitrop-Jørgensen, Aarhus University, Denmark
Bill Clark, Rothamsted Research, UK
Margit Jehn, JKI, Germany
Daniela Antichi, SSUR, Italy

Tomaz Golob, INRA, Poland
Huub Schepers, Wageningen UR, The Netherlands
Philippe Lucas and Bernard Ruffard, INRA, France
David Gouache, Anis, France
Laszlo Horvath, SZIE, Hungary



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The EuroWheat platform



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EuroWheat



Home Project information ▾ Pathogens ▾ Fungicides ▾ Cultivars ▾ Wheat IPM ▾ Public documents

02 September 2011

Welcome to EuroWheat

Comparison of Fungicide efficacy across countries



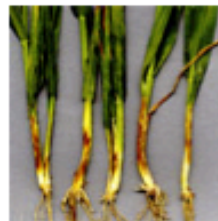
Find information on the efficacy of the most important compounds against cereal diseases across countries in Europe.

[Read more ...](#)

Find presentations and conclusions from EPP0's septoria workshop held at Rothamsted, December 2010 [here](#)

Survey on the use of disease thresholds

New guideline on monitoring of diseases in wheat and a survey on control thresholds used in different countries



[Read more ...](#)

EUROWHEAT is an Internet based platform aiming at collating and displaying host - and pathogen characteristics, and pesticide efficacy on a European scale. Bringing together existing information from national programs and ensuring that these data are in a format, which can be readily understood trans-nationally, are expected to provide significant added value on a European scale. New disease - and resistance data will be published on the platform as soon as possible to support effective disease control, deployment of host resistances and breeding programs.

Present information available are:

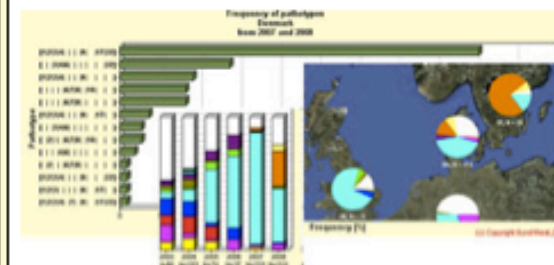
- Virulences in the yellow rust population
- Ranking of wheat cultivars for susceptibility to Fusarium and different testing methods
- Disease names in six different languages
- Effectiveness of fungicides ranked in different countries
- Fungicides international trade names
- Fungicide resistance as present in Europe
- Survey on pesticide use and yield responses to fungicides in EU countries
- Yield level and yield losses from specific diseases in 8 EU countries
- Information on disease thresholds and DSSs used in Europe
- Cultural practices impact on disease development
- National documents on disease management

EuroWheat is funded by the ENDURE project and Aarhus University.

Contact

For further information, please contact:

Yellow rust pathotypes in Europe



[Most important pathotypes in Europe 1993-2009...](#)
[Evolution of pathotypes over years and countries](#)
[Pathotypes on Europe map](#)
[Track single, rare virulences on Europe map](#)

Publications about EuroWheat

EuroWheat.org : A support to integrated disease management in wheat. *Outlooks on Pest Management, Vol 21, No 4 - August 2010, p 173-176*

EuroWheat.org: a new research-based website supporting integrated disease management in wheat. *From Science to Field Wheat Case Study - Guide Number 3, 2010*



Integrated Weed Management ***Comparing strategies in maize***



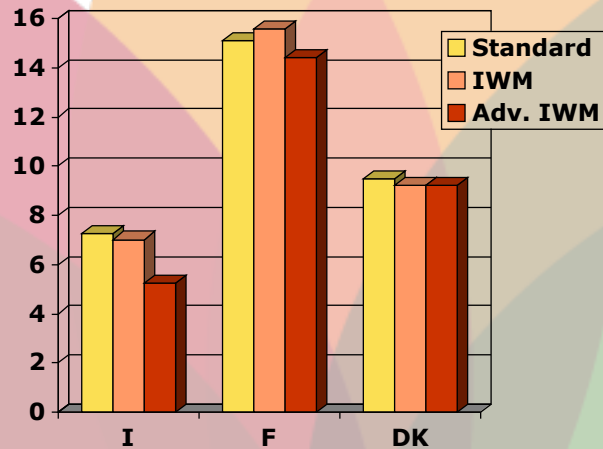
- *Standard chemical treatment*
- *IWM (inter-row cultivation + chemical)*
- *Advanced IWM (less herbicide than IWM)*

Pisa (I), Dijon (F) & Flakkebjerg (DK)

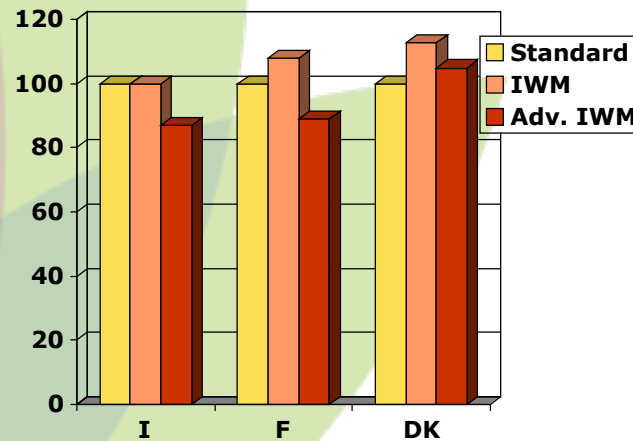


Integrated Weed Management *Yields, costs and environmental impact*

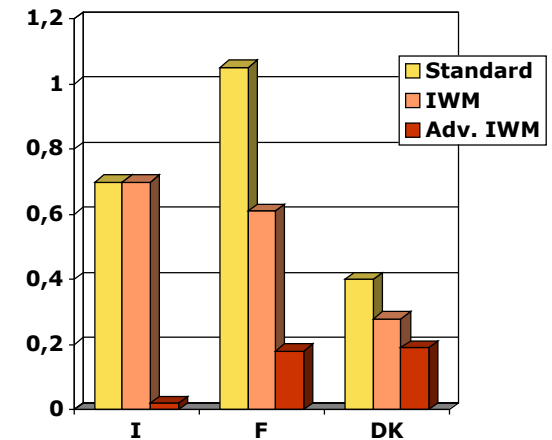
Cob yield (t DM/ha)



Relative costs



Environmental index (Ipest)



ENDURE Resource Center



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The ENDURE Resource Centre (ERC) aims to provide easy access to information and resources on Integrated Crop Protection in Europe. The concept of the ERC is to aggregate information on all aspects of crop protection research across Europe and beyond, to act as a portal facilitating research across disciplines and across borders. We welcome feedback, corrections and suggestions from all ENDURE participants and the wider scientific community. Please send any comments or suggestions to Colin Denholm, the ERC technical coordinator at colin.denholm@rothamsted.ac.uk. The ERC was formerly known as the "Virtual Laboratory".

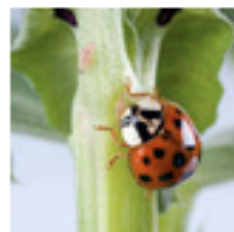
[Read an interview with team leader Neal Evans on the ENDURE web site](#)

[Physical Resources](#) | [Online Resources](#) | [Latest Information Centre Documents](#) | [ENDURE ERG Twitter](#)



Analytical Equipment

Laboratory analytical equipment (NMR, mass spec, electron microscopy molecular detection)



Collections

Reference collections of arthropods, nematodes, weeds or plant pathogens. DNA/RNA libraries. Germplasm/crops expressing pest resistance traits



Controlled Environment

Sophisticated CE/glasshouse facilities



Experimental Sites

Sites for controlled and replicated field experiments



Laboratories

Laboratories for genomics, metabolomics and/or proteomics research

Crop

Rape

Brassica napus

BRSNN

Clear

Pests

Common Name

Scientific Name

EPPO Code

Clear

Measure

Common Name

Clear

Country

Common Name

NUTS Code

Clear

Reports (69) found

Reports

69 Reports found, displaying from 1 to 10

 First Previous **1** 2 3 4 5 6 7 Next Last

Crop	Pests	Measure	Country	Title	Practicability	Language	
Winter rape	Fungi	Assessmen ...	DK	 IPM in Danish Winter Crops Based Cropping ...	ready to use		Read more
Rape	Limacidae	site cond ...	FR	Slugs: What are the risk situations on oi ...	ready to use	 	Read more
Rape	Turnip sawfly	thresholds	FR	Oil seed Rape and insects at fall: To mot ...	ready to use	 	Read more



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ENDURE INFORMATION CENTRE



Angielski | Niemiecki | Francuski | Hiszpański | Niderlandzki | Duński | Polski | Włoski

Strona domowa Wyszukaj Zaloguj Szukaj

Uprawa

Nazwa pospolita

Nazwa naukowa

Kod EPPO

Wyczyść

Szkodniki

Nazwa pospolita

Nazwa naukowa

Kod EPPO

Wyczyść

Sposób działania

Nazwa pospolita

Wyczyść

Kraj

Nazwa pospolita

Kod NUTS

Wyczyść

Centrum Informacji (ENDURE IC) rozpowszechnia informacje na temat ochrony roślin. Przedstawia sposoby długotrwałej ochrony roślin w rolnictwie europejskim. ENDURE IC jest źródłem informacji dla rozszerzenia wiedzy ekspertów, zaleceń i rad dla usług, doradców i naukowców, dotyczących wszystkich aspektów zintegrowanej ochrony roślin. Użytkownikom zapewnia możliwość wyszukiwania według upraw/szkodników lub chorób/kraju. Wyniki wyszukiwania oferują wysoką europejską jakość (European Best Practices) z sprawdzonym IPM, zawierającym metody prewencyjne, chemiczne zwalczanie chorób i szkodników, jak również metody alternatywne, takie jak biologiczna ochrona roślin.

Rozpocznij wyszukiwanie wybierając kombinacje uprawa/szkodnik-choroba /sposób działania oraz kraj dla danego problemu.

Więcej informacji na temat korzystania z Centrum informacji ENDURE podano w instrukcji ([here](#)).



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ONGOING CHALLENGES



- ❁ **International thematic workshops**
 - Robustness of cropping systems and anticipation strategies vis-à-vis invasive pest species and climate change (November 2011)
- ❁ **European forum for exchange and identification of joint research and development priorities**
 - Ongoing survey through a SCAR working group
- ❁ **Summer School on IPM-related issues**
 - Links with other research projects (e.g., PURE)
- ❁ **European network of IPM experiments**
 - Share results and protocols to provide added value
- ❁ **ENDURE Information Centre**
- ❁ **ENDURE network of advisors**



- ✿ **Global Initiative on IPM**
 - Networking with USA, China, Brazil, Argentina and others
- ✿ **Share experiences on the implementation of IPM**
 - The ENDURE Information Centre as a major tool
- ✿ **Support the development and implementation of crop protection policies**
- ✿ **Expand the ENDURE network of advisors**
 - To better account of regional specificities
- ✿ **Disseminate more widely ENDURE Resource Center tools**
 - To improve our overall competitiveness