

Organisation

Governing Council
High level institutional representation

External Advisory Board

Representatives of
Scientific research
Industry
Farming
Consumers
Environmental groups
Policy makers

Executive Committee (coordinator, activity leaders)

Building the network

Competence mapping, knowledge management, foresight study, mobility,...

Joint research

Optimising and reducing product use through case studies, developing innovative strategies, multi-criteria assessment

Dissemination

Training, education, technology transfer, communication

Crop Protection Network

Research networks
Related EU projects

Research agenda

Virtual laboratory

Competence centre

Budget: 11,2 million € from the European Commission FP6 call on Food Quality and Security will provide four years (2007-2010) of support to ENDURE.
Contract number: 031499

Participants

Research organisations

Agros, Agroscope Swiss Federal Research Station > Switzerland
BBA, Biologische Bundesanstalt für Land- und Forstwirtschaft > Germany
CIRAD, Centre de coopération internationale en recherche agronomique pour le développement > France
CNR, Consiglio Nazionale delle Ricerche > Italy
IHAR, Plant Breeding and Acclimatization Institute > Poland
INRA, Institut national de la recherche agronomique > France
PRI, Plant Research International; PPO, Applied Plant Research; LEI, Agricultural Economic Institute > Netherlands
RRES, Rothamsted Research > United Kingdom

Universities

AU, University of Aarhus > Denmark
SSSUP, Scuola Superiore di Studi Universitari e di Perfezionamento Sant'Anna > Italy
SZIE, Szent István University > Hungary
UdL, Universitat de Lleida > Spain

Extension

ACTA, Association de coordination technique agricole > France
DAAS, Danish Agricultural Advisory Service > Denmark

Industry

IBMA, International Biocontrol Manufacturers Association > International

Management

IT, INRA Transfert > France



Food Quality and Safety



European Network for the Durable Exploitation of Crop Protection Strategies



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<http://www.endure-network.eu>



> Context

Advances in crop protection have greatly contributed to high yields and consistency in production, but new concerns about **human health and the environment** and increased consumer awareness of pesticide use call for the development of lower input farming systems that are less reliant on pesticide use.

In Europe, tougher regulations on the registration of plant protection products and the protection of water resources are coming into force and a thematic strategy is being developed to fill the legislative gap regarding the use-phase of pesticides: a directive establishing a **framework for Community action** to achieve a sustainable use of pesticides is under discussion.

Supporting these changes requires that **diversified crop protection strategies** based on new technologies, new approaches and a broader range of tactics be proposed to and developed with well qualified growers and advisers. Stakeholders, especially policy-makers, need independent science-based advice to help them implement the new regulations.

> Building the network

A common research agenda

ENDURE will identify the areas of competence covered by each institution and will elaborate **scenarios on the future of crop protection**. On this basis, it will develop a vision of the evolving scientific and technological needs for reducing the reliance of European agriculture on pesticides and it will propose **revised priorities** for its own research agenda and that of national programmes.

A networked virtual laboratory

The scientific infrastructure required by ENDURE will be provided by **networking the best facilities and know-how** available among partners and by promoting the constitution of new facilities and resources when needed. This involves sharing biological and technical resources, organising multi-site field experimental networks, standardising methods and protocols, critically assessing the emerging technologies

> Objectives

The purpose of ENDURE is to answer these needs through the **durable restructuring of European research and development** allowing additional, coherent and re-oriented efforts in order to provide a better understanding of the biology of crop-pest interactions, coupling analytical and system-based approaches, to ensure that economists and sociologists join biologists and agronomists in the design of innovative cropping systems, and that this knowledge is efficiently mobilised at the farm level.

A European **network of expertise and knowledge** will be developed by partner organisations, progressively enhanced by teams from other Member States and countries outside Europe whose products are exported to Europe.

The network will establish itself as a world leader for development and implementation of **sustainable crop protection** strategies. The creation of a European pest control competence centre will provide the vehicle enabling it to become a **central point of reference**.

for agriculture, and developing decision-support systems for growers. The virtual laboratory will provide the work environment for implementing the collaborative research projects of ENDURE.

A shared knowledge base

ENDURE will collect relevant information and knowledge and validate and organise it efficiently within a database. This will ensure that each partner has **access to the knowledge** that already exists in- and outside the network and also to that generated by the joint research programme.

The R&D community will be gathered around the building of these three assets. Interactivity within the network will be stimulated by a **human resources exchange** programme between centres involved in sustainable crop protection. ENDURE will also establish links and exchanges with other relevant networks and projects in Europe.

> The joint research programme

Optimising and reducing pesticide use

ENDURE aims to improve crop protection practices **in the short term** by demonstrating the feasibility of changing end-user practices towards more integrated strategies. Case-studies will be used to assess how existing practices, tools and evaluation methods can be strengthened, transferred to new agro-ecosystems and adopted by growers. **Case-studies** will first include wheat, potato, pomefruit, tomato and integrated weed management; maize, oilseed rape, grapevine and banana will be considered later on.

Designing innovative crop protection strategies

Major breakthroughs will be needed to actually meet the requirements of sustainable production **in the longer term** and offer a variety of options for different types of agriculture. ENDURE will explore new sources of innovation in the fields of prevention of pest damage, integration of precision agriculture technologies, landscape management and community ecology approaches. Existing strategies that offer scaling-up potential, and newly designed **pioneering strategies** based on cutting-edge research will be assessed for efficiency and applicability prior to field-testing.

Defining criteria to assess strategies

ENDURE aims to assess crop protection strategies from complementary points of view. **Agronomic, environmental, economic and societal criteria** will be developed to assess the impacts on pest incidence and pesticide use; the environmental risks and benefits (including life-cycle analyses); the weight of the economic, institutional and legal driving forces; and the sociological basis of decisions and practices at different levels of the food chain: farmers, extension services, economic actors and consumers.

Understanding crop-pest systems

ENDURE will stimulate the exploitation of current advances in population dynamics, epidemiology, evolutionary ecology and genomics, community ecology, crop improvement and biotechnology to improve the **basic knowledge** of crop-pest systems. Primary selected areas are: pesticide resistance management, exploitation of plant genetic resistance, exploitation of natural biological processes, invading and emerging pests, and weed biology and management.

> Disseminating results and knowledge

ENDURE activities will bring results, expertise and knowledge to all concerned parties.

Training and education

In order to foster rapid implementation of crop protection techniques, **pilot training sessions** with farmers, extension organisations and facilitators involved in crop management will be organised and the **transfer of technologies** generated in ENDURE to potential end-users, companies and industries will be supported.

Teaching collaborations will be established with universities and schools that provide crop protection **PhD programmes**, and summer school courses will be organised to improve the attractiveness of the crop-protection field for talented young scientists.

Dialogue with stakeholders and end-users

ENDURE will set up the **ENDURE competence centre** to offer up-to-date and validated information on crop protection strategies in a form adapted to the various target groups. The centre will provide tools, methods and recommendations to growers and their advisers. It will be open to the needs and views of industry and society but **independent of specific vested interests**.

Communication tools and events will be organised to reach the **scientific community** beyond ENDURE. Guidance and tools will be provided to increase **public awareness** of crop protection issues and their environmental and social implications.