COST

COST is an intergovernmental framework for European Cooperation in Science and Technology, allowing the coordination of nationally-funded research on a European level.

COST contributes to reducing the fragmentation in European research investments and opening the European Research Area to cooperation worldwide. As a precursor of advanced multidisciplinary research, COST plays a very important role in building a European Research Area. It anticipates and complements the activities of the EU Framework Programmes, constituting a "bridge" towards the scientific communities of emerging countries.



www.cost.eu

COST Actions receive a financial contribution based on a joint work programme (4 years) for:

- Science management meetings
- Working group meetings
- Scientific workshops & seminars
- Training schools
- Scientific exchange visits
- Dissemination & publications

Presently, the 27 EU member states plus 9 additional European countries participate in COST. Additional institutions worldwide can join COST Actions on a case by case decision.



Ragweed pollen allergens are a major cause of hay fever symptoms in late summer in large parts of Europe.

Are you presently working with ragweed biology or management and interested in our action?

Contact Us

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The problem with ragweed



Ragweed produces extremely large amounts of pollen that is particularly allergenic.

Common ragweed (Ambrosia artemisiifolia, Asteraceae), originating from North America, is one of the most prominent invasive alien species in Europe. Its pollen grains are carriers of noxious allergens that may induce severe symptoms in sensitisized people. It is also an important agricultural weed with a range that is likely to increase under climate change. Therefore, long-term, sustainable and widely applicable management is required. The coordination of institutions involved in Ambrosia research will help implement management strategies throughout Europe.

> Ragweed has increasingly become a major weed in European agriculture, especially in spring-sown crops such as sunflower, maize, sugar beet, soy beans and tobacco.



SMARTER

Who we are

SMARTER is an interdisciplinary network of experts currently involved in the control of ragweed, health care professionals, aerobiologists, ecologists, economists, and atmospheric and agricultural modellers. More than 120 participants from 33 countries are already participating in SMARTER.

What we do

SMARTER provides a forum for discussing long-term management and monitoring options and the development of new innovative management solutions, such as a synergy between biological, physical and chemical control measures and vegetation management, and assess their cost-effectiveness in mitigating the effects of invasive alien species.

The development and implementation of a sustainable control programme against Ambrosia constitutes an innovative management approach for Europe that also serves as a template for future problems with invasive alien plants.

How we work

SMARTER participants work in 6 different areas:

- 1. Biological control
- 2. Vegetation management
- 3. Integration of management options
- 4. Management evaluation
- 5. Training, knowledge and technology transfer
- 6. Policy support

Innovative weed control methods for Europe

Biological control

One long-term management tool not yet implemented in Europe is biological control, either by introducing host-specific arthropods or fungal pathogens from the area of origin of the plant, or by increasing the density of native natural enemies.



Most promising candidate species for biological control of Ambrosia artemisiifolia in Europe and their feeding niche. Figure adapted after: Gerber et al. 2011. Weed Research 51: 559-573.

Vegetation management

Another strategy is vegetation management. This approach is specifically suitable to prevent further establishment, seed set and spread of ragweed along roads, railway tracks and waterways.

These novel management techniques need to be integrated into existing ones that use cutting regimes and/or herbicides. Each habitat and region will need its own specific combination of management tools.