

COST Action no. FA1203

Sustainable management of *Ambrosia artemisiifolia* in Europe (SMARTER)

2013 | 2017

Background & Objectives

- Common ragweed (*Ambrosia artemisiifolia*, Asteraceae), originating from North America, is one of the most prominent invasive alien plant species in Europe. Its pollen grains can induce severe allergic symptoms, and it is an important agricultural weed. Its range is likely to increase under climate change.
- Currently, mechanical and chemical measures are locally being taken against ragweed, but these do not eradicate the populations and do not prevent its spread. Therefore, long-term sustainable management is required at a transnational European level.
- SMARTER is an interdisciplinary network of weed control experts and practitioners, ecologists, aerobiologists, health care professionals, and economists.
- The aim of the Action is to initiate and coordinate long-term new management options for achieving control of common ragweed in Europe, such as biological control, vegetation management and their integration with existing control techniques. The Action will also assess control impact and cost-effectiveness.

Main Achievements (16 months after the start)

- More than 170 participants from 34 countries (28 COST Countries, 4 Near Neighbour Countries and 1 International Partner) have become members of the network
- National status of ragweed, past and on-going research on ragweed, national expertise and published literature have been inventoried.
- 4 Working groups (plus two additional Task Forces on specific topics) have been formed and have established a work plan for the next years.
- Group members have applied for funding of new research; 2 international and 20 national projects were granted since SMARTER started.
- 6 international scientific exchange visits (STSMs) have been approved and completed, supporting research and network activities.
- 12 publications in peer reviewed journals and 4 abstracts in conference proceedings acknowledging SMARTER have been produced
- A new phone APP (SMARTER Ambrosia Reporter) has been realized.
- A leaflet, a poster, and a number of press releases have been produced and divulged.

www.cost.eu/fa



Food and Agriculture (FA)

Participating countries

AM, AT, BA, BE, CH, CN, CZ, DE, DK, EE, EL, ES, FI, FR, GE, GR, HR, HU, IL, IT, LT, LU, ME, MK, NL, PL, RO, RS, RU, SE, SI, SK, TR, UK

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COST is supported by the EU RTD Framework Programme



ESF provides the COST Office through a European Commission contract



Working Group activities

WG 1. Population Dynamics & Biological Control

- Develop population models for both the target weed and biological control candidates and initiate a Europe-wide biological control program for Europe (taking into account the the different climatic regions and landscapes)
- Assess the impact and risks of the introduction of potential exotic natural enemies for long-term control (classical biological control), and of the potential use of native natural enemies to increase short-term control (inundative control)
- Carry out a European survey to assess the distribution and abundance of ragweed and its associated antagonists

WG 2. Vegetation management

- Establishing and managing a competitive vegetation cover by sowing specific seed mixtures of native plants and using specific management (frequency and timing of cutting) regimes to prevent the production of fertile ragweed seeds
- Establish a protocol for soil seed bank analysis and study seed and germination biology, and allelopathy.

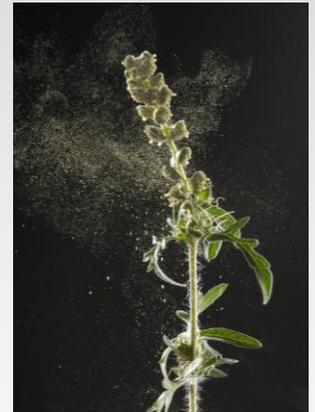
WG 3. Integration of management options

- Integrating the long-term control measures developed in WG 1 and 2 with available short-term management measures and promote experimental research on the optimal combination of management schemes

WG 4. Management evaluation

- Evaluate the management options developed in WG1-3 in terms of presence and spread of common ragweed in Europe; and the impact on health and economics
- Collect and merge datasets to map the distribution and related impact of common ragweed in Europe, including observational and modelled data
- Cost-benefit analysis of different management options

The problem with ragweed



Ragweed produces extremely large amount of highly allergenic pollen.



Screen of the Phone App developed with the support of the SMARTER community, to involve and help professionals and amateurs to recognize, report and map Ambrosia populations in Europe.