



EUROPEAN WEED RESEARCH SOCIETY

Europäische Gesellschaft für Herbologie • Société Européenne de Malherbologie

Working Group Germination & Early Growth



Some of the working group members at the Reading workshop, 2003.

The EWRS Working Group "Germination and early growth" was formed in 1999 and has over 50 members on our mailing. The group aims to focus on the window of time between a weed seed entering the seedbank and its early stages of seedling growth. This represents a crucial stage in weed biology and is important in the improvement and identification of new weed control opportunities.

The main objectives of the group are:

- To bring fellow scientists together to disseminate information and provoke discussion on the working group topic.
- To plan and actively collaborate, through joint experimentation, towards a common goal. The aim being to gain a better understanding of the biological processes, to develop improved models and to produce joint publications.
- To organise focused conferences and workshops on weed seed germination and early growth and contribute to future EWRS symposia.
- To explore collaborative funding, either as a group or through using the working group as a vehicle to find new opportunities.

A simple joint experiment of weed emergence



Recording weed emergence at the Danish participating sites

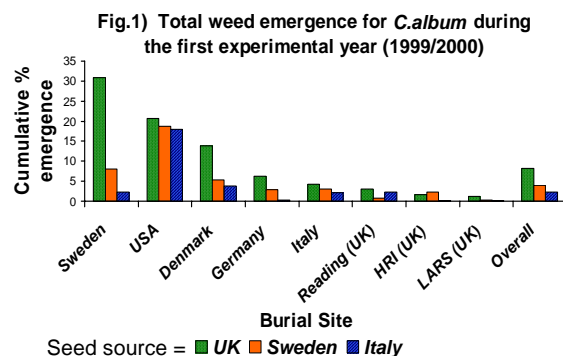


Experimental area at one of the UK working group participating sites

The aim of the study was to examine the generic applicability of predictive weed emergence models using information that is easily and realistically available to the grower. The seeds used for the study were specifically selected from established populations with different climates and maturation conditions. The study was made between 1999 and 2002 and has produced a unique weed emergence database for *Stellaria media* and *Chenopodium album* using seed from 3 different sources (Italy, UK & Sweden) and buried in 8 different locations*. The results can be used for testing, validating and refining existing weed emergence models.

Preliminary findings of our first joint experiment

The experimental data has shown highly significant and interesting effects of population source and burial site on percentage weed emergence for the two study species. Similar responses in the relative emergence response of the three populations were observed across all eight sites (Fig. 1). The between-population differences may be difficult to predict since they are attributed to variability in seed quality, which may also vary between seasons depending on maturation conditions in a given year. However, for *C. album*, there appears to be a potential correlation between the depth of winter temperature and the relative magnitude of emergence observed across all sites and populations. Though the number of populations in the present study was limited, the results suggest that there is some synchrony in the initiation of timing of germination that is not significantly affected by seed population. These observations regarding the the timing of the major flushes of emergence have been encouraging.



For more information on our results, please take a look at our Working Group joint publication in *Weed Research*, 43,163-176.

Future group activities

The group aims to explore other simple collaborative experiments in the future. New members are always welcome to participate and to contribute to the ongoing discussions. For more information please contact: andrea.grundy@warwick.ac.uk.

The working group also has a comprehensive and regularly updated web site at: <http://www.ewrs.org/GEGWG/> where you can view results, future plans and contact our individual members.

Next meeting

The Working Group tries to meet at least once a year, either informally at our 2-day working group workshops, or at specialist conferences such as the "Seedbanks Conference" held in 2003* which was organised jointly by our working group and the Association of Applied Biologists. Information about all of our past and future meetings, as well as details of how to get hold of proceedings from the Reading 2003 conference, can be viewed at <http://www.ewrs.org/GEGWG/>

* Participating sites in the first joint experiment

A.C. Grundy¹, NCB Peters², I.A. Rasmussen³, K.M. Hartmann⁴, M. Sattin⁵, L. Andersson⁶, A. Mead⁷, A.J. Murdoch⁸, F. Forcella⁹
¹Horticulture Research International, U.K.; ²INCR, Long Ashton, U.K.; ³Danish Institute of Agricultural Sciences, DENMARK; ⁴Universität Erlangen-Nürnberg, GERMANY; ⁵Centro Studio Biologia e Controllo Pianta Infestante - Legnaro (Padova) ITALY; ⁶SLU, Uppsala, SWEDEN; ⁷Horticulture Research International, U.K.; ⁸The University of Reading, U.K.; ⁹USDA-ARS, Morris, U.S.A.