18th European Weed Research Society Symposium

EWRS 2018

17-21 June 2018
Ljubljana, Slovenia

New approaches for smarter weed management

Book of Abstracts

www.ewrs2018.org

18th European Weed Research Society Symposium

EWRS 2018

17-21 June 2018
Ljubljana, Slovenia

New approaches for smarter weed management

Book of Abstracts

www.ewrs2018.org

–

Organiser
Kmetijski inštitut Slovenije (KIS) – Agricultural Institute of Slovenia, Hacquetova ulica 17, 1000 Ljubljana, Slovenija

Programme Committee
Dr. Jukka Salonen, Chairman / EWRS Vice-President; Prof. Dr. Hüsrev Mennan, Scientific Secretary; Prof. Dr. Paul Neve, EWRS President

EWRS Scientific Committee
Dr. Theo Verwijst, Department of Crop Production Ecology, Swedish University of Agricultural Sciences, Sweden; Prof. Dr. Garifalia Economou-Antonaka, Faculty of Crop Production Science, Agricultural University of Athens, Greece; Dr. Kirsten Torresen, Norwegian Institute of Bioeconomy Research (NIBIO), Norway; Dr. Roland Beffa, Bayer Crop Science AG, Integrated Weed Management & Resistance Biology, Germany; Dr. Ivo O. Brants, Monsanto Europe S.A, Belgium; Jan Petersen, University of Applied Science Bingen, Germany; Christian Bohren, Research Station Agroscope Changins-Wädenswil (ACW), Switzerland; Dr. Per Kudsk, Professor & Head of Section, Dept. of Agroecology, University of Aarhus, Denmark; Maurizio Vurro, Istituto di Scienze delle Produzioni Alimentari – CNR, Italy; Dr. Marleen Riemens, Wageningen University and Research Centre, Netherlands; Prof. Dr. Svend Christensen, University of Copenhagen, Faculty of Life Sciences, Denmark; Dr. Hanan Eizenberg, Newe Ya'ar Research Center, Israel; Dr. Euro Pannacci, Dept. of Agricultural, Food and Environmental Sciences – University of Perugia, Italy; Dr. Paula Westerman, Group Crop Health, Faculty of Agricultural and Environmental Science, University of Rostock, Germany

Local Organising Committee
Assoc. Prof. Dr. Andrej Simončič, President, Agricultural Institute of Slovenia; Dr. Robert Leskovšek, Agricultural Institute of Slovenia; Dr. Gregor Urek, Agricultural Institute of Slovenia; Prof. Dr. Stanislav Trdan, Biotechnical Faculty, University of Ljubljana; Prof. Dr. Mario Lešnik, Faculty of Agriculture and Life Sciences, University of Maribor; Ela Žilič, M. Sc., Agricultural Institute of Slovenia; Marjeta Urbančič Zemljič, M. Sc., Agricultural Institute of Slovenia

Editor
Andrej Simončič

Published by
Kmetijski inštitut Slovenije, 2018

The publication is published e-only – http://www.ewrs.org

Kataložni zapis o publikaciji (CIP) pripravili v Narodni in univerzitetni knjižnici v Ljubljani
COBISS.SI-ID=295336960
ISBN 978-961-6998-21-5 (pdf)

The response of weed species to water stress

Delphine Moreau, Hugues Busset, Annick Matejicek, Camille Perrot, Nathalie Colbach
INRA, DIJON, France

Reducing herbicide use requires identifying alternative strategies to regulate weeds. Using crop species that are more competitive for resources than problematic weed species is one lever, but requires a better understanding of weed response to water stress. The present study aimed to quantify the response of three weed species to water stress. In a greenhouse experiment, *Alopecurus myosuroides*, *Amaranthus hybridus* and *Abutilon theophrasti* were grown at 4-5 water regimes, ranging from 75 to 20% of the water holding capacity. Plants were grown individually in pots. Each pot was automatically weighted three times per day, and watered whenever necessary to reach the targeted water regime. A nutrient-rich solution was used. The lower water regimes probably concurred with lower nutrient levels, in line with what is usually going on in agricultural fields. Seven weeks after germination, plants were sampled. For the three species, leaf, stem and root biomasses were affected by the water regimes. The intensity of the response to water stress differed among species, with A. *theophrasti* being the most sensitive and *A. hybridus* the least sensitive species. For plant leaf area, the ranking of plant species for the sensitivity to water regime was similar to the ranking for the potential plant leaf area (i.e. leaf area at 75 % of the water holding capacity). We will identify mathematical equations accounting for the response of plant growth and biomass allocation to water stress. The aim is to identify generic equations, i.e. valid for a wide range of annual species. They will be included in the FlorSys model which simulates weed dynamics and crop canopy growth in virtual fields over the years. The final aim is to use the completed model to identify sustainable weed management strategies that are robust to climatic hazards. Funding: INRA, CoSAC project (ANR-15-CE18-0007), ReMIX (EU-H2020-727217).

18th European Weed Research Society Symposium

EWRS 2018

June 17-21, 2018
Ljubljana, Slovenia