

# HELIA

## MANAGING EDITOR

Dragan Škorić, *Serbia*

## EDITOR

Zvonimir Sakač, *Serbia*

## EDITORIAL BOARD

Yakov Demurin, *Russia*

Jose Fernández-Martinez, *Spain*

Wolfgang Friedt, *Germany*

Thomas Gulya, *USA*

Antonio Hall, *Argentina*

Yalcin Kaya, *Turkey*

Viktor V. Kirichenko, *Ukraine*

Maria Pacureanu-Joita, *Romania*

Monica Poverene, *Argentina*

Herve Serieys, *France*

Mulpuri Sujatha, *India*

Gian Paolo Vannozzi, *Italy*

Kirichenko Victor Vasyljovich, *Ukraine*

Felicity Vear, *France*

Abelardo de la Vega, *Argentina*

Ferenc Viranyi, *Hungary*

Jun Zhao, *China*

DE GRUYTER

HELIA is published by the Serbian Academy of Sciences and Arts (SASA), Branch in Novi Sad in cooperation with De Gruyter. HELIA publishes original theoretical, experimental and technical contributions arising from the scientific study of sunflower crops and farming systems. The subject fields covered include crop agronomy; sunflower genetic resources; sunflower improvement and breeding; phytopathology and plant protection; sunflower physiology, biochemistry, metabolism, structure, genetics, at diverse levels of integration; ecology; soil, water and mineral nutrition management and farming systems.

**ABSTRACTED/INDEXED IN** Celdes, CNKI Scholar (China National Knowledge Infrastructure), CNIPIEC, EBSCO Discovery Service, Elsevier - SCOPUS, Google Scholar, J-Gate, Naviga (Softweco), Primo Central (ExLibris), SCImago (SJR), Summon (Serials Solutions/ProQuest), TDOne (TDNet), WorldCat (OCLC).

ISSN 1018-1806 · e-ISSN 2197-0483

All information regarding notes for contributors, subscriptions, Open Access, back volumes and orders is available online at <http://www.degruyter.com/journals/helia>.

**MANGING EDITOR** Prof. Dr. Dragan Škorić, Serbian Academy of Sciences and Arts (SASA), Branch in Novi Sad, Nikole Pašića 6, 21000 Novi Sad, Serbia, Email: draganskoric@sbb.rs

**JOURNAL MANAGER** Holger Kleessen, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05-376, Fax: +49 (0)30 260 05-250, Email: holger.kleessen@degruyter.com

**RESPONSIBLE FOR ADVERTISEMENTS** Heiko Schulze, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany. Tel.: +49 (0)30.260 05-358, Fax: +49 (0) 30.260 05-264, Email: anzeigen@degruyter.com

**TYPESETTING** Integra Software Service Pvt. Ltd, Pondicherry, India

© 2015 Walter de Gruyter GmbH, Berlin/Boston and SASA, Branch in Novi Sad, Serbia.

**PRINTING** Franz X. Stückle Druck und Verlag e.K., Ettenheim  
Printed in Germany



# Contents

## Research Articles

Anna Krupp, Erika Rücker, Annerose Heller and Otmar Spring  
**Seed Structure Characteristics of *Orobanche cumana* Populations — 1**

Philippe Delavault  
**Knowing the Parasite: Biology and Genetics of *Orobanche* — 15**

Ali Reza Safahani Langeroodi, Teena Dadgar, Behnam Kamkar and  
Jaime A. Teixeira da Silva  
**Evaluation of Genotoxic and Inhibitory Effects of Invasive Weed Wild Poinsettia (*Euphorbia heterophylla* Linn.) in Sunflower — 31**

Sattar Tahmasebi Enferadi, Zohreh Rabiei and Gian Paolo Vannozzi  
**Sunflower Heat-Shock Protein Synthesis Study under Water Deficit Condition — 53**

Claudio Ferfua, Maurizio Turi and Gian Paolo Vannozzi  
**Variability of Seed Fatty Acid Composition to Growing Degree-Days in High Oleic Acid Sunflower Genotypes — 61**

Maria Duca  
**Historical Aspects of Sunflower Researches in the Republic of Moldova — 79**

J. Encheva and E. Penchev  
**Heterosis for Agronomically Important Traits in Sunflower Hybrid Rada, Developed with Mutant Restorer Line 12002 R — 93**

Vikrant Tyagi and S. K. Dhillon  
**Relationship between Crop Growth Parameters and Seed Yield in CMS Analogs in Sunflower — 109**

J. González, N. Mancuso, D. Alvarez, D. Cordes and A. Vázquez  
**Contribution of the Argentine Germplasm to the Improvement of Sunflower — 121**

## Brief-Report

M. V. Rosetti and L. F. Hernández

**Involucral Bracts Anatomy in the Capitulum of Primitive Strains  
and Modern Genotypes of Sunflower (*Helianthus annuus* L.) — 141**