

SPANISH JOURNAL OF AGRICULTURAL RESEARCH

Formerly known as «Investigación Agraria» merged from two series: «Producción y Protección Vegetales» and «Producción y Sanidad Animales» founded in 1985, the predecessor of which was «Anales del Instituto Nacional de Investigaciones Agronómicas», first published in 1952

EDITORIAL BOARD

Editors

Plant science. Fernando Ponz Ascaso. INIA, Madrid (Spain). fponz@inia.es
Animal science. Antonio Lopez Sebastian. INIA, Madrid (Spain). alopez@inia.es
Agricultural economics and engineering. Carmen de Blas Beorlegui. INIA, Madrid (Spain). cblas@inia.es

Managing Editors

Victoria Baonza Merino. INIA, Madrid (Spain). baonza@inia.es
Carmen de Blas Beorlegui. INIA, Madrid (Spain). cblas@inia.es

Technical Editor

Gemma Perez Rivera. INIA, Madrid (Spain). publinia@inia.es

AGRICULTURAL ECONOMICS

SECTION EDITOR: **Fernando Vidal** (UMH, Orihuela, Alicante, Spain) fvidal@umh.es

ASSOCIATE EDITORS: **Jesús Barreiro** (FAO, Roma, Italy), **Julio Berbel** (UCO, Córdoba, Spain), **Margarita Brugarolas** (UMH, Orihuela, Alicante, Spain), **Carlos Romero** (UPM, Madrid, Spain), **Baldomero Segura** (UPV, Valencia, Spain)

AGRICULTURAL ENGINEERING

SECTION EDITOR: **Francisco Rovira** (UPV, Valencia, Spain) frovira@dmta.upv.es

ANIMAL BREEDING, GENETICS AND REPRODUCTION

SECTION EDITOR: **Manuel Baselga** (UPV, Valencia, Spain) mbaselga@dca.upv.es

ASSOCIATE EDITORS: **Josep M. Folch** (CRAg, Campus UAB, Barcelona, Spain), **Eva Moce** (IVIA, Valencia, Spain), **Julian Santiago** (INIA, Madrid, Spain), **Luis Varona** (U Zaragoza, Spain)

ANIMAL HEALTH AND WELFARE

SECTION EDITOR: **Lorenzo Gonzalez** (VLA-Lasswade, Edinburgh, Scotland, UK) l.gonzalez@vla.defra.gsi.gov.uk

ASSOCIATE EDITORS: **Jose M. Blasco** (SIA, Zaragoza, Spain), **Mercedes Gomez** (UCM, Madrid, Spain), **Ramon A. Juste** (Neiker, Derio, Vizcaya, Spain), **Silvia Siso** (VLA, Edinburgh, Scotland, UK).

ANIMAL PRODUCTION

SECTION EDITOR: **Clemente Lopez-Bote** (UCM, Madrid, Spain) clemente@vet.ucm.es

ASSOCIATE EDITORS: **Agustin Brenes** (CSIC, Madrid, Spain), **Dolores Carro** (U León, León, Spain), **Argimiro Daza** (UPM, Madrid, Spain), **Maria Angeles Latorre** (U Zaragoza, Zaragoza, Spain).

ENVIRONMENT AND ECOLOGY

SECTION EDITOR: **Ismael Aranda** (INIA, Madrid, Spain) aranda@inia.es

ASSOCIATE EDITORS: **Alvaro Alonso Fernandez** (UAH, Alcalá de Henares, Spain), **Eustaquio Gil-Pelegrin** (CITA, Zaragoza, Spain)

PLANT BREEDING, GENETICS AND GENETIC RESOURCES

SECTION EDITOR: **Amando Ordas** (CSIC, Pontevedra, Spain) aordas@mbg.csic.es

Journal Editorial Office

Emilia Redondo. Servicio de Publicaciones-INIA. Autopista A-6, km 7.5. 28040 Madrid (Spain). E-mail: sjar@inia.es. Phone: +34 91 347 39 15. Fax: +34 91 357 22 93

AIM AND SCOPE

The Spanish Journal of Agricultural Research publishes research articles, reviews and short communications. Research articles and short communications must report original work not previously published in any language, nor under consideration for publication elsewhere.

After peer review and approval by the editorial board, SJAR publishes papers reporting research findings dealing with twelve topics: agricultural economics; agricultural engineering; animal breeding, genetics and reproduction; animal health and welfare; animal production; environment and ecology; plant breeding, genetics and genetic resources; plant physiology; plant production; plant protection; soil science; and water management.

SJAR is indexed in **Science Citation Index Expanded** and **Scopus**. Additionally, in **Agricola**, **Agris**, **Biosis**, **CAB Abstracts**, **CABI full text databases**, **Current Contents Connect** (Agriculture/Agronomy), **Dialnet**, **FSTA** (Food Science and Technology Abstracts), **Georef**, **Global Health**, **ICyT**, **Pascal**.

SJAR is published quarterly (March, June, September and December) by the Spanish National Institute for Agricultural and Food Research and Technology (INIA). Autopista A-6, km 7.5. 28040 Madrid (Spain).

ALERT SERVICE

If you wish to receive via e-mail, whenever a new issue of SJAR appears, the table of contents with direct links to the respective abstracts, take advantage of our free Alert Service. To register, simply send an e-mail with the message «Subscribe SJAR» to publinia@inia.es.

OPEN ACCESS JOURNAL

Full contents available online at www.inia.es/SJAR