



2023 Volume 51 Issue 1

NOTULAE BOTANICAE HORTI AGROBOTANICI CLUJ-NAPOCA





NOTULAE BOTANICAE HORTI AGROBOTANICI CLUJ-NAPOCA

2023 Volume 51, Issue 1

*A journal of the University of Agricultural Sciences and Veterinary Medicine,
Cluj-Napoca, Romania*

Published by AcademicPres on behalf of
University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca
Romanian Academy of Agricultural and Forestry Sciences
Horticulture and Forestry Society from Transylvania

Abstracted and/or indexed:

- Clarivate, [Master Journal List](http://mjl.clarivate.com/) - SCIE, JCR, <http://mjl.clarivate.com/> (IF 2021=1.249)
- Scopus - Elsevier, <https://www.scopus.com/sourceid/17700156420> (CiteScore 2021=1.9)
- ProQuest, <http://www.proquest.com/>
- Centre for Agriculture and Biosciences International (CABI), <https://www.cabdirect.org/>
- Chemical Abstracts Service (CAS), <https://www.cas.org/>
- Bielefeld Academic Search Engine (BASE), <http://www.base-search.net>
- Google Scholar, <http://scholar.google.com>
- British Library Direct (BLD), <http://explore.bl.uk/>
- Mendeley, <https://www.mendeley.com>
- The European Library, <http://www.theeuropeanlibrary.org>
- Harvard Library, <http://hollis.harvard.edu>
- Scilit, <https://www.scilit.net/>
- Open Archives Initiative Protocol for Metadata Harvesting (OAIster), <http://www.oaister.org>
- Ulrich's Periodicals Directory, <http://www.ulrichsweb.com>
- Elton B Stephens Company (EBSCO), <http://www.ebscohost.com>
- Information Matrix for the Analysis of Journals (MIAR), <http://miar.ub.edu/>

First published 1965
Print ISSN 0255-965X, Electronic ISSN 1842-4309
www.notulaebotanicae.ro

EDITORIAL BOARD

Editor-in-Chief

- [Radu E. SESTRAS](#), University of Agricultural Sciences and Veterinary Medicine (UASVM), 3-5 Manastur St., 400372, Cluj-Napoca, Romania

Advisory Editors

- [Cornel CĂTOI](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Doru C. PAMFIL](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Viorel MITRE](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

Associate Editors

- [Sorana D. BOLBOACĂ](#), 'Tuliu Hatieganu' University of Medicine and Pharmacy, Cluj-Napoca, Romania
- [Monica BOSCAIU](#), Universitat Politècnica de València, Spain
- [Claudiu I. BUNEA](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Liviu HOLONEC](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Lorentz JANTSCHI](#), Technical University of Cluj-Napoca, Cluj-Napoca, Romania
- [Ioanna KAKABOUKI](#), Agricultural University of Athens, Iera Odos, 75, 11855, Athens, Greece
- [Kamil KUČA](#), University of Hradec Králové, Czech Republic
- [Felicia LOGHIN](#), 'Tuliu Hatieganu' University of Medicine and Pharmacy, Cluj-Napoca, Romania
- [Leon MUNTEAN](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Ioan NEGRUTIU](#), Ecole Normale Supérieure, Lyon, France
- [Ioana Delia POP](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Agnieszka SEKARA](#), Agricultural University of Kraków, Kraków, Poland
- [Adriana F. SESTRAS](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Dan C. VODNAR](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania

Editorial Board - Scientific Members & Editors

- [Ioan Vasile ABRUDAN](#), Transilvania University, Brasov, Romania
- [Douglas D. ARCHBOLD](#), University of Kentucky, Lexington, United States
- [Valerian BALAN](#), State Agrarian University of Moldova, Chişinău, Moldova
- [Dimitrios J. BILALIS](#), Agricultural University of Athens, Athens, Greece
- [Maria Yordanova BOROVIKOVA](#), Institute of Agriculture, Kyustendil, Bulgaria
- [Anca Dana BUZOIANU](#), 'Tuliu Hatieganu' University of Medicine and Pharmacy, Cluj-Napoca, Romania
- [Dănuț CHIRA](#), National Institute for Research and Development in Forestry, Romania
- [Sorin Mihai CÎMPEANU](#), Univ. Agronomic Sciences and Veterinary Medicine, Bucharest, Romania
- [Gheorghe CIMPOIEȘ](#), State Agrarian University of Moldova, Chişinău, Moldova
- [Kamal CHOWDHURY](#), Claflin University, Orangeburg, United States
- [Valeriu V. COTEA](#), University of Agricultural Sciences and Veterinary Medicine, Iași, Romania
- [Lucian A. CURTU](#), Transilvania University, Brasov, Romania
- [Sezai ERCISLI](#), Ataturk University, Erzurum, Turkey
- [Marek GAJEWSKI](#), Warsaw University of Life Sciences, Warszawa, Poland
- [Imre HOLB](#), Univ. Agricultural Sciences of Debrecen, Debrecen, Hungary
- [Maurizio LAMBARDI](#), National Research Council (CNR), IBE, Sesto Fiorentino, Firenze, Italy
- [Andrea LUVISI](#), University of Salento, DiSTeBA, Lecce, Italy
- [Amarendra Narayan MISRA](#), Fakir Mohan University, Vyasa Vihar, Balasore, India
- [Vlad MUREȘAN](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Jaime PROHENS](#), Universitat Politècnica de València, Spain
- [Albert REIF](#), University of Freiburg, Freiburg, Germany
- [Adrián RODRÍGUEZ-BURRUEZO](#), Universitat Politècnica de València, Spain
- [Klaus SCHALLER](#), Hochschule Geisenheim University, Geisenheim, Germany
- [Velibor SPALEVIC](#), University of Montenegro, Niksic, Montenegro
- [Silvia STRAJERU](#), Genetic Resources Bank of Suceava, Suceava, Romania
- [Ioan TĂUT](#), University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania
- [Oscar VICENTE](#), COMAV, Universitat Politècnica de València, Valencia, Spain
- [Vasile VÎNTU](#), University of Agricultural Sciences and Veterinary Medicine, Iași, Romania
- [Qiang-Sheng WU](#), Yangtze University, Jingzhou, China

Technical and Administrative Editors

- [Adriana D. BACIU](#), UASVM, Cluj-Napoca, Romania
- [Cătălina DAN](#), UASVM, Cluj-Napoca, Romania
- [Mihail KANTOR](#), USDA, ARS, Beltsville, United States
- [Laura Ioana MACAVEI](#), Università degli Studi di Modena e Reggio Emilia, Modena, Italy
- [Lucica MIHALTE](#), UASVM, Cluj-Napoca, Romania
- [Irina M. MORAR](#), UASVM, Cluj-Napoca, Romania
- [Andreea D. ONA](#), UASVM, Cluj-Napoca, Romania
- [Corina F. SERBAN](#), Washington State University, IAREC, Prosser, United States
- [Alina M. TRUȚĂ](#), UASVM, Cluj-Napoca, Romania

Editorial Office

- Roxana L. STOIAN, UASVM, Cluj-Napoca, Romania
- Silviu L. MIC, UASVM, Cluj-Napoca, Romania

Linguistic Editors

- Mihaela RUSU, UASVM, Cluj-Napoca, Romania
- Rodica STAN, UASVM, Cluj-Napoca, Romania

Technical Support

- Ligia CRĂCIUN, UASVM, Cluj-Napoca, Romania
- Diana-Maria MIRCEA, UASVM, Cluj-Napoca, Romania
- Diana Alexandra POP, UASVM, Cluj-Napoca, Romania
- Paula STAN (GAVRIS), UASVM, Cluj-Napoca, Romania

Notice

The Editorial Board of *Notulae Botanicae Horti Agrobotanici Cluj-Napoca* is not responsible for statements and opinions published; they represent the views of the authors or persons to whom they are credited. Publication of research information does not constitute a recommendation or endorsement of products involved.

Material Disclaimer

The authors are fully responsible for their work and they hold sole responsibility for the articles published in the journal. The editors, editorial board and publisher do not assume any responsibility for the article's contents and for the authors' views expressed in their contributions.

Indexation, relevance, metrics

You can find information about journal score and metrics here: [impact and relevance](#).

Aims and scope

[Notulae Botanicae Horti Agrobotanici Cluj-Napoca](#) is a peer-reviewed quarterly (beginning in 2019) journal aimed at disseminating significant research and original papers on plant breeding, genetics, diversity and development of new methodologies that can be of interest to a wide audience of plant scientists in all areas of plant biology, agriculture, horticulture, and forestry. The journal encourages authors to frame their research questions and discuss their results in terms of the major questions of plant biology and agriculture, thereby maximizing the impact, spreading and value of their research. The papers must be of potential interest to a significant number of scientists and, if specific to a local situation, must be relevant to a wide body of knowledge in biology and agronomy. Articles should make a significant contribution to the advancement of knowledge or toward a better understanding of existing biological and agricultural concepts. An international Editorial Board advises the journal. There are no publishing fee and no pay for submission. The total content of the journal may be used for educational, non-profit purposes without regard to copyright. The distribution of the material is encouraged with the condition that the authors and the source (**Notulae Botanicae Horti Agrobotanici Cluj-Napoca** or **Not Bot Horti Agrobo**) are mentioned.

Submission

The journal offers to authors a fully web-enabled online manuscript submission, instructions for authors and review system available at <https://www.notulaebotanicae.ro>. Papers are published in English (British spelling) and the authors are fully responsible for the originality of their papers and for the correctness of their subject-matter, language and formal attributes. A language reviewer revises English, but authors are strongly urged to have the papers reviewed linguistically prior to submission. Manuscripts submitted must be edited, for clarity and conformity purposes according to Authors guidelines, and must not have been previously published or simultaneously submitted elsewhere. The papers can be submitted online by the corresponding author (or the person who takes responsibility for the integrity of the work as a whole, from submission to the published article). The submission process is described on the web site. An Author Statement, available on the website, should be enclosed by corresponding author declaring that the paper has not been published anywhere else, permission to reproduce the material, authorship credit, contributors and creditors for the integrity of the work as a whole, to avoid the conflicts of interest and scientist fraud, and respecting the ethical principles of publishing, research and scientific rights.

Publication Frequency

Quarterly (four issues per volume/year). Beginning in 2019, the journal appears quarterly, with the next coverage over the four annual numbers (combined months):

Issue 1: January-March

Issue 2: April-June

Issue 3: July-September

Issue 4: October-December

Publication Ethics and Publication Malpractice Policy

The journal respects the publication ethics norms, based on internationally accepted best practice guidelines for journal editors, notably the Committee on Publication Ethics ([COPE](#)), the World Association of Medical Editors ([WAME](#)), the International Committee of Medical Journal Editors ([ICMJE](#)), Consolidated Standards of Reporting Trials ([Consort](#)).

Prof. dr. h.c. Radu E. SESTRAS

Editor-in-Chief

[Notulae Botanicae Horti Agrobotanici Cluj-Napoca](#) ©

AcademicPres

University of Agricultural Sciences and Veterinary Medicine

3-5 Mănăştur, 400372 Cluj-Napoca, Romania

Phone: +40 264-596 384; Fax +40 364-819 343

rsestras@notulaebotanicae.ro

Vol 51, No 1 (2023)

Table of Contents

Editorial	
Introduction pages NBHA-CN 51(1), 2023	13142
Radu E. SESTRAS	PDF
Review Articles	
Climate change, its impact on crop production, challenges, and possible solutions	13020
Majed ALOTAIBI	PDF
Research progress of the Elongator complex in plant	13058
Ji XIANGZHUO, Zhuang ZELONG, Wang YINXIA, Zhang YUNFANG, Peng YUNLING	PDF
Natural compounds: an effective and eco-friendly strategies for controlling and combating plant pathogens	12991
Alin DIN, Ion MITREA, Rodi MITREA	PDF
The use of phytotherapy in hepatocellular carcinoma – a systematic review	13084
Cristina P. URSU, Emil I. MOIȘ, Luminița E. FURCEA, Rodica S. POP, Ștefan URSU, Diana SCHLANGER, Andra CIOCAN, Florin V. ZAHARIE, Aida PUIA, Nadim AL HAJJAR, Florin GRAUR	PDF
Research Articles	
Anticancer effects of <i>Rhinacanthus nasutus</i> and <i>Acanthus ebracteatus</i> extracts against human cervical cancer cells	13035
Worachot SAENGHA, Thipphiya KARIRAT, Benjaporn BURANRAT, Teeraporn KATISART, Panida LOUTCHANWOOT, Abdulhadi Ali ALBASER, Vijitra LUANG-IN	PDF
Bioactive principles, antibacterial and anticancer properties of <i>Artemisia arborescens</i> L.	13008
Shahnaz SULTANA, Hafiz A. MAKEEN, Hassan A. ALHAZMI, Syam MOHAN, Mohammed AL BRATTY, Asim NAJMI, Husham E. HOMEIDA, Gulrana KHUWAJA, Shehla N.M.N. ULLAH, Aameeduzzafar ZAFAR, Sivakumar S. MONI	PDF
In vitro regeneration from adult node explants of <i>Juniperus oxycedrus</i>	13062
Konstantinos BERTSOUKLIS, Angeliki T. PARASKEVOPOULOU, Evdoxia PETRAKI	PDF
In vitro germination and regeneration of <i>Senna artemisioides</i>, a valuable leguminous ornamental shrub	12992
Konstantinos BERTSOUKLIS, Kostandin NAKSI, Paraskevi-Evangelia ARETAKI	PDF
Somatic embryogenesis in two cassava (<i>Manihot esculenta</i> Crantz) genotypes	13039
Fitri YELLI, Agustin TITIN, Setyo Dwi UTOMO, Ashutosh PATHAK	PDF
Pollen morphology and anatomy of <i>Rubus</i> L. (Rosaceae) in Thailand	13070
Kasan HANCHANA, Surapon SAENSOUK, Piyaporn SAENSOUK	PDF

- [Heat treatment effect on tocopherols, total phenolics and fatty acids in table olives \(*Olea europaea* L.\)](#) 13029
 Dragana MIHAJLOVIĆ, Slavica ČOLIĆ, Jovana MARKOVIĆ, Dejana PERIŠIĆ, Jasmina RAJIĆ, Tamara PREMOVIĆ, BILJANA RABRENOVIĆ [PDF](#)
- [Variations in seed oil and chemical composition among the safflower genotypes \(*Carthamus tinctorius* L.\)](#) 13045
 Muhammet TONGUÇ, Sercan ÖNDER, Sabri ERBAŞ [PDF](#)
- [Aqueous extract of coconut shell biochar as a pre-germination treatment increases seed germination and early seedling growth in chiltepín pepper \(*Capsicum annuum* var. *glabriusculum*\)](#) 13097
 Mari C. LÓPEZ-PÉREZ, Antonio JUÁREZ-MALDONADO, Adalberto BENAVIDES-MENDOZA, Susana GONZÁLEZ-MORALES, Fabián PÉREZ-LABRADA [PDF](#)
- [Citron melon peel flours: drying kinetics and physicochemical evaluation](#) 12833
 Daniela D. de Farias LEITE, Rossana M. Feitosa de FIGUEIRÊDO, Alexandre J. de Melo QUEIROZ, Leiliane S.L. LIMA, Yaroslávia F. PAIVA, Dyego da Costa SANTOS, Semirames do N. SILVA, Rosenildo dos Santos SILVA, Cacia C. COSTA [PDF](#)
- [Characterization of palm date varieties \(*Phoenix dactylifera* L.\) growing in Saudi Arabia: Phenotypic diversity estimated by fruit and seed traits](#) 12996
 Abdullah H.M. ALRASHIDI, Arshad JAMAL, Mohammad J. ALAM, Lassaad GZARA, Najla HADDAJI, Mnaouer KACHOUT, Abdelmuhsin ABDELGADIR, Riadh BADRAOUI, Salem ELKAHOUI [PDF](#)
- [Lycium species and variety recognition technology based on electrochemical sensing of leaf signals](#) 13054
 Xin SHI, Junjie MAN, Weiting YE, Jiangwei ZHU, Li FU, Yuhong ZHENG, Yue YIN, Yan NIU, Xiaojing WANG [PDF](#)
- [Characterization of 'Wonderful' pomegranate in the state of Chihuahua, México](#) 12955
 Nubia G. TORRES-BELTRÁN, Juan M. SOTO-PARRA, Linda C. NOPERI-MOSQUEDA, Esteban SÁNCHEZ [PDF](#)
- [Phylogeographic pattern of the high-alpine plant species *Eritrichium nanum* \(Boraginaceae\) within the Carpathians](#) 12971
 Dana ŞUTEU, Ioan BĂCILĂ, Adrian-Ilie STOICA, Zoltan R. BALÁZS, Mihai PUŞCAŞ, Gheorghe COLDEA [PDF](#)
- [UV-C treatments extend the postharvest quality of '0900 Ziraat' sweet cherries by protecting the physical and biochemical features of the fruits during the storage](#) 13037
 Sevil UNAL, Ferhan K. SABIR [PDF](#)
- [Morphological, quality characteristics, and antioxidant activity of grapes from heritage germplasm grown in Central Anatolia, Turkey](#) 12635
 Mustafa OZDEN, Yasin DEVECİ [PDF](#)

- [Iodine application in *Vitis vinifera* L. cv. 'Cabernet Sauvignon' improve bioactive compounds and enzymatic activity in berries](#) 13074
 Valeria B. RAMÍREZ-GOTTFRIED, Manuel FORTIS-HERNÁNDEZ,
 Ramiro GONZÁLEZ-AVALOS, Pablo PRECIADO-RANGEL [PDF](#)
- [Effect of foliar treatment with chitosan on phenolic composition of 'Fetească neagră' grapes and wines](#) 12920
 Victoria ARTEM, Arina O. ANTOCE, Elisabeta I. GEANA, Aurora RANCA [PDF](#)
- [Biodiversity of microbial populations as the indicator of biogenicity of soil under ashes and agricultural soil](#) 13115
 Tatjana SEKULIĆ, Vladanka STUPAR, Aleksandar STEVANOVIĆ, Zlata ŽIVKOVIĆ,
 Markola SAULIĆ, Milica BLAŽIĆ, Vera POPOVIĆ [PDF](#)
- [Arbuscular mycorrhizal fungi promote photosynthesis in *Antirrhinum majus* L. under low-temperature and weak-light conditions](#) 13012
 Wei LI, Yan-Lin ZHAI, Hong-Shuang XING, Li-Jun XING, Shao-Xia GUO [PDF](#)
- [Effects of arbuscular mycorrhizal fungi on the growth and metabolism of perennial ryegrass \(*Lolium perenne*\) under salt stress](#) 12649
 Wei LI, Yan-Lin ZHAI, Xue-Yi HU, Shao-Xia GUO [PDF](#)
- [Mycorrhization and root excision effects on morphological and biomass production of carob \(*Ceratonia siliqua* L.\)](#) 12835
 Faten KANFOUD, Awatef SLAMA, Issam TOUHAMI, Abdelaziz AYARI, Ines HAJLAOUI,
 Mohamed L. KOUJA, Mohamed T. ELAIEB [PDF](#)
- [Plant growth promoting characterization of indigenous phosphate solubilizing rhizobacteria and effects on germination of some crops in Vietnam](#) 12869
 Hieu Q. NGUYEN, My NGUYEN, Nhu N. NGUYEN [PDF](#)
- [Investigating the metagenomics of the bacterial communities in the rhizosphere of the desert plant *Senna italica* and their role as plant growth promoting factors](#) 13053
 Asrar M. ALSWAT, Rewaa S. JALAL, Ashwag Y. SHAMI, Mazen A. MAJEED,
 Zohoor S. ALSAEDI, Lina BAZ, Mohammed Y. REFAI, Mohammed N. BAESHEN,
 Noor M. BATAWEEL, Ahmed AL-HEJIN, Ruba A. ASHY [PDF](#)
- [Effects of post-harvest natural drying on seed quality and endogenous hormones of *Camellia oleifera*](#) 13051
 Xinran YU, Qiling SONG, Yingjia LIU, Yue ZHANG, Ke JI, Le CHEN, Han GONG,
 Wenfang GONG, Deyi YUAN [PDF](#)
- [Responses of *Colchicum speciosum* L. populations to conventional and nano-fertilizers of nitrogen through changes in morphological and biochemical attributes](#) 12827
 Masoud BABAIE NAEIJ, Maryam PEYVANDI, Hossein ABBASPOUR,
 Zahra NOORMOHAMMADI, Sedighe ARBABIAN [PDF](#)
- [A cotton leaf nitrogen monitoring model based on spectral-fluorescence data fusion](#) 13059
 Xiu LIN, Faduman HA, Lulu MA, Xiangyu CHEN, Yiru MA, Aiqun CHEN, Zhenan HOU,
 Ze ZHANG [PDF](#)

- [Cultivation experiment of *Origanum vulgare* L. in Northern Kazakhstan using nitrogen fertilizer](#) 13077
Svetlana KABANOVA, Pavel SHAKHMATOV, Valeriy BORTSOV, Matvey DANCHENKO, Sabina SCOTT, Andrey KABANOV, Yana KREKOVA, Igor KOCHEGAROV [PDF](#)
- [Efficacy of the application of boron nanofertilizer on biomass, yield, nitrogen assimilation and photosynthetic activity in green beans](#) 12795
Cristina L. FRANCO-LAGOS, Esteban SÁNCHEZ, Alejandro PALACIO-MÁRQUEZ, Sandra PÉREZ-ÁLVAREZ, Marina TERRAZAS-GÓMEZ, Octavio VILLALOBOS-CANO, Carlos A. RAMÍREZ-ESTRADA [PDF](#)
- [Determination by UHPLC – UV – MS of polyphenol content of *Amaranthus retroflexus*](#) 13102
Aida P. SĂRĂCIN, Andrei BIȚĂ, Ioan A. SĂRĂCIN, Monica D. BÎCĂ, Emilia CONSTANTINESCU, Larisa-Marina-Elisabeth CHIRIGIU, Ștefania E. TĂNASIE [PDF](#)
- [The effect of storage conditions on some tomato varieties, during the postharvest period](#) 13027
Daniela VERINGA, Ionel Lucian DUMITRESCU, Marian BOGOESCU [PDF](#)
- [Quality of alfalfa \(*Medicago sativa* L.\) and red clover \(*Trifolium pratense* L.\) mixture silages depending on the share in the mixture and additives](#) 12954
Đorđe LAZAREVIĆ, Vladeta STEVOVIĆ, Zoran LUGIĆ, Dalibor TOMIĆ, Jordan MARKOVIĆ, Vladimir ZORNIĆ, Mladen PRIJOVIĆ [PDF](#)
- [Impacts of heat shock on productivity and quality of *Triticum aestivum* L. at different growth stages](#) 13090
Rabia GOHER, Hiba M. ALKHARABSHEH, Mahmoud F. SELEIMAN, André A. DIATTA, Harun GITARI, Daniel O. WASONGA, Gul R. KHAN, Mohammad AKMAL [PDF](#)
- [Triterpenoid saponins in *Aralia elata* subjected to combined nutrient availability and light quality](#) 13036
Yuxiang SUN, Mingyang SUN, Huijia QIU, Long TAN, Shenglei GUO [PDF](#)
- [Biofortification with magnesium nanofertilizer on bioactive compounds and antioxidant capacity in green beans](#) 12830
Nubia I. AMAYA-OLIVAS, Esteban SÁNCHEZ, León HERNÁNDEZ-OCHOA, Damaris L. OJEDA-BARRIOS, Graciela D. ÁVILA-QUEZADA, María A. FLORES-CÓRDOVA, David CHÁVEZ-FLORES, Juan G. AYALA-SOTO, Alondra SALCIDO-MARTÍNEZ, Carlos A. RAMÍREZ-ESTRADA [PDF](#)
- [Seed oil content, oil yield and fatty acids composition of black mustard \[*Brassica nigra* \(L.\) Koch\] in response to fertilization and plant density](#) 13061
Stella KARYDOGIANNI, Ioannis ROUSSIS, Ioanna KAKABOUKI, Antonios MAVROEIDIS, Panteleimon STAVROPOULOS, Aspasia EFTHIMIADOU, Nikolaos KATSENIOS, Marianna GIANNOGLOU, George KATSAROS, Dimitrios BESLEMES, Vassilios TRIANTAFYLLIDIS, Dimitrios BILALIS [PDF](#)
- [Conservation of commercial quality and bioactive compounds of guava pieces by application of an alginate-accmannan coating](#) 13080
Edén A. LUNA-ZAPIÉN, Rafael MINJARES-FUENTES, Erick SIERRA-CAMPOS, Jolanta E. MARSZALEK, Sergio I. BARRAZA-GUERRERO, Jorge A. MEZA-VELÁZQUEZ [PDF](#)

- [Nutritional standards through Integrated Differential Diagnosis \(IDD\) in pomegranate \(*Punica granatum* L.\)](#) 12988
Nubia G. TORRES-BELTRÁN, Rosa M. YÁÑEZ-MUÑOZ, Juan M. SOTO-PARRA,
Linda C. NOPERI-MOSQUEDA [PDF](#)
- [Leaf disease caused by *Epicoccum thailandicum* on *Amomum villosum* in China](#) 13021
Shanqi WANG, Zixiang LI, Wenmin FENG, Yufan CHEN, Ying ZHANG [PDF](#)
- [Biocontrol of the root-knot nematode *Meloidogyne incognita* with *Purpureocillium lilacinum* and liquid bio-formulates in tomato \(*Solanum lycopersicum*\)](#) 13010
Diana M. NIÑO-ARTEAGA, Bertha C. MACÍAS-LÓPEZ, Jesús M. OLIVAS-GARCÍA,
Martín A. ALONSO-GÓMEZ, Esteban SÁNCHEZ, Ezequiel MUÑOZ-MÁRQUEZ [PDF](#)
- [Assessing the susceptibility levels of chestnut cultivars/genotypes to Asian chestnut gall wasp \(*Dryocosmus kuriphilus* Yasumatsu\)](#) 13056
Başak MÜFTÜOĞLU, Cevriye MERT, Nimet Sema GENÇER [PDF](#)
- [Application of *Trichoderma asperellum* in apple trees as a growth regulator and antagonist for the control of *Alternaria* sp.](#) 13108
Melissa MADRID-MOLINA, Sandra PÉREZ-ÁLVAREZ, César M. ESCOBEDO-BONILLA,
Crescencio URÍAS-GARCÍA [PDF](#)
-

Editorial office
[Notulae Botanicae Horti Agrobotanici Cluj-Napoca](#) ©
AcademicPres
University of Agricultural Sciences and Veterinary Medicine
3-5 Mănăştur, 400372 Cluj-Napoca, Romania
Phone: +40 264-596 384; Fax +40 364-819 343
rsestras@notulacbotanicae.ro



Electronic ISSN 1842-4309

University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca,
3-5 Manastur St., 400372 Cluj-Napoca, Romania
<http://www.notulaebotanicae.ro>