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Forests, Science and People



1.01.13 - ECOLOGY AND SILVICULTURE OF CHESTNUT

Coordinator: Stacy Clark

Deputies: Veronica Loewe, Maria Patricio and Enrico Marcolin

Nr. 6 / 2023 - October

Come and join us at: <https://www.iufro.org/science/divisions/division-1/10000/10100/10113/>

This is the newsletter from the IUFRO working party 1.01.13 '[Ecology and Silviculture of Chestnut](#)'. With this newsletter, we aim at sharing information, exchanging research ideas, and building a network among chestnut researchers. The newsletter will be published every 3 months (see here for previous numbers: <https://www.iufro.org/science/divisions/division-1/10000/10100/10113/publications/>).

If you have an item of interest to share, such as meetings, publications, research projects or job opportunities, please see the Newsletter contributions section below.

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Join us for the Technical Session 2.26 on SILVICULTURE FOR THE BIOECONOMY AND ECOSYSTEM SERVICES IN CASTANEA FORESTS

<https://iufro2024.com>

Abstract submissions are now **CLOSED**

The 2-hour technical session will feature 10 speakers and two Q&A periods. An associated poster session will showcase 12 presenters who will provide short oral presentations followed by a Q&A period

If you plan on attending the IUFRO World Congress and wish to moderate our session, please contact Stacy Clark at stacy.l.clark@usda.gov

Completed summary of the FORECO Special Issue on:



***** Ecology and Management of Chestnut *****

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Editorial:

Advances and perspectives on the ecology and management of Castanea species.

Marcolin, E., Clark, S. L., Patricio, M. S., & Loewe-Muñoz, V.

15 August 2023 - <https://doi.org/10.1016/j.foreco.2023.121119>

Preferential allocation of carbohydrate reserves belowground supports disturbance-based management of American chestnut (Castanea dentata)

Madeline S. Montague, Simon M. Landhäusser, Gordon G. McNickle, Douglass F. Jacobs

1 April 2022 - <https://doi.org/10.1016/j.foreco.2022.120078>

Preferences of avian seed-hoarders in advance of potential American chestnut reintroduction

James R. Wright, Stephen N. Matthews, Cornelia C. Pinchot, Christopher M. Tonra

1 May 2022 - <https://doi.org/10.1016/j.foreco.2022.120133>

Phenology, cold injury and growth of American chestnut in a Range-Wide provenance test

Paul G. Schaberg, Paula F. Murakami, Kendra M. Collins, Christopher F. Hansen, Gary J. Hawley

1 June 2022 - <https://doi.org/10.1016/j.foreco.2022.120178>

Mixed-effects generalized height-diameter model: A tool for forestry management of young sweet chestnut stands

Maria Sameiro Patricio, Cremildo R.G. Dias, Luís Nunes

15 June 2022 - <https://doi.org/10.1016/j.foreco.2022.120209>

Deer browse susceptibility limits chestnut restoration success in northern hardwood forests

Cornelia C. Pinchot, Alejandro A. Royo, John S. Stanovick, Scott E. Schlarbaum, ... Sandra L. Anagnostakis

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120481>

Temperate coppice forests in north-western Italy are resilient to wild ungulate browsing in the short to medium term

Alessandra Bottero, Fabio Meloni, Matteo Garbarino, Renzo Motta

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120484>

Optimizing quality wood production in chestnut (Castanea sativa Mill.) coppices

Maria Chiara Manetti, Marco Conedera, Francesco Pelleri, Piergiuseppe Montini, ... Enrico Marcolin

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120490>

Restoring a keystone tree species for the future: American chestnut assisted migration plantings in an adaptive silviculture experiment

Peter W. Clark, Alissa J. Freeman, Anthony W. D'Amato, Paul G. Schaberg, ... Christopher W. Woodall

1 November 2022 - <https://doi.org/10.1016/j.foreco.2022.120505>

Effectiveness of chemical and physical methods for stump sprout control in Castanea sativa Mill

Pau Vericat, Jaime Coello, Mario Beltrán, Míriam Piqué

1 December 2022 - <https://doi.org/10.1016/j.foreco.2022.120537>

Comparisons of interspecies field performance of Fagaceae (Castanea and Quercus) planted in the southeastern United States with attention to soil fungal impacts on plant performance

Shawn P. Brown, Stacy L. Clark, Emerald Ford, Ari Jumpponen, ... Richard Baird

1 December 2022 - <https://doi.org/10.1016/j.foreco.2022.120569>

Effects of growth Medium, temperature and mycelium age on CHV-1 accumulation and transmission

Pedro Romon-Ochoa, Alex Lewis, Caroline Gorton, Sietse van der Linde, Ana Pérez-Sierra

1 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120705>

Impacts of spatial scale and resolution on species distribution models of American chestnut (Castanea dentata) in Pennsylvania, USA

Alec F. Henderson, Jennifer A. Santoro, Peleg Kremer

1 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120741>

Mixed Castanea sativa plantations including arboreal companion species enhance chestnut growth and high-quality timber production

Verónica Loewe-Muñoz, Claudia Delard, Rodrigo del Río, Luis Barrales, Mónica Balzarini

1 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120742>

Development of tools to estimate the contribution of young sweet chestnut plantations to climate-change mitigation

M. Menéndez-Miguélez, P. Álvarez-Álvarez, M. Pardos, G. Madrigal, ... R. Calam

15 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120761>

Effect of thinning on growth and shape of Castanea sativa adult tree plantations for timber production in Chile

Susana Benedetti-Ruiz, Verónica Loewe-Muñoz, Rodrigo Del Río, Claudia Delard, ... Mónica Balzarini

15 February 2023 - <https://doi.org/10.1016/j.foreco.2022.120762>

Convergent shifts in soil fungal communities associated with Fagaceae reforestation in the Southern Appalachian Mountains

Shawn P. Brown, Stacy L. Clark, Emerald Ford, Nahreen Mirza, ... Richard Baird

1 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120805>

*Eight-year field performance of backcross American chestnut (*Castanea dentata*) seedlings planted in the southern Appalachians, USA*

Stacy L. Clark, Scott E. Schlarbaum, Arnold M. Saxton, Steven N. Jeffers, Richard E. Baird
15 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120820>

*The role of ectomycorrhization with *Scleroderma* sp. in promoting substrate nutrients mobilization under phosphorus-enriched compost amendment: A case study with *Castanea henryi* seedlings*

Wangzun Chen, Libing He, Shiyi Tian, Deyi Yuan, ... Feng Zou
15 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120823>

*Age, size and neighbors influence the survival and growth of understory trees in a naturally reproducing population of American chestnut, *Castanea dentata**

Harmony J Dagleish, Lindsey Monteith, Erica Collins
15 March 2023 - <https://doi.org/10.1016/j.foreco.2023.120824>

Sweet chestnut forests under black locust invasion threat and different management: An assessment of stand structure and biodiversity

Thomas Campagnaro, Giovanni Trentanovi, Simone Iacopino, Andrea Squartini, ... Tommaso Sitzia
1 June 2023 - <https://doi.org/10.1016/j.foreco.2023.120907>

Comparative growth and physiological performance of American Chestnuts, Oaks, Hickories, and sugar maple across a silvicultural gradient in overstory retention

Garrett R. Evans, Julia I. Burton, William A. Powell, John E. Drake
15 May 2023 - <https://doi.org/10.1016/j.foreco.2023.120908>

*A silvicultural synthesis of sweet (*Castanea sativa*) and American (*C. dentata*) chestnuts*

Stacy L. Clark, Enrico Marcolin, Maria Sameiro Patrício, Verónica Loewe-Muñoz
1 July 2023 - <https://doi.org/10.1016/j.foreco.2023.121041>

Direct link to the Special Issue:

<https://www.sciencedirect.com/journal/forest-ecology-and-management/special-issue/10RX05B62LH>

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News from the working party

Our working party was officially formed in May 2021. We have held several virtual meetings to discuss future projects and opportunities for collaboration. In addition to this newsletter, our first project was to develop a **special issue** on chestnut ecology and silviculture (see above), including a synthesis paper on *Castanea sativa* and *C. dentata*.

We are also planning a **special session** (Technical session T2.26 - *Silviculture for the Bioeconomy and Ecosystem Services in Castanea Forests*) into the **IUFRO World Congress** to be held in Stockholm in 2024 (see <https://iufro2024.com/> for more information).

News from the chestnut world

- **VII International Chestnut Symposium Lugo**, Spain: June 26-29, 2023

<https://www.chestnutsymposium.com/>

The VII International Chestnut Symposium took place in Lugo, Galicia, from June 26th to 29th. The event saw a significant turnout of researchers who engaged in discussions on key issues pertaining to chestnut products. Various relevant topics were covered, offering insights into the future of chestnut cultivation, including discussions on Pests and Diseases, Chestnut and Climate Change, Chestnut Genomics, Chestnut Breeding, Chestnut Propagation, Population Genetics and Landscape Conservation, Biodiversity and Conservation, as well as Management and Physiology.

The symposium concluded with a pleasant visit to the "Route to the Giant Chestnut Trees," which included traditional chestnut orchards in the Courel region.



- **2023 European Chestnut Days**, Austria: September 13-15, 2023

<http://www.eurocastanea.org/european-chestnut-days.html>

Look here for a detailed report on the event: cesefor.com [XIII Encuentro Europeo de la Castaña](#)

- **Chestnut Chat Series**,

- Rescue and Restoration of the American Chestnut.
- The Transgenic Darling 58 American Chestnut Tree

All Chestnut Chats are LIVE via Zoom, so you can attend from anywhere!

[Chat series registration web-page](#)

Call for Papers

Take a look to the Special issue "**Forests and Food: Challenges and Opportunities**" of the journal, 'Trees, Forests and People (TFP)'.

Journal of Trees, Forests and People belongs to SCI indexed journal list 2022 with the impact factor 2.7.

<https://www.sciencedirect.com/journal/trees-forests-and-people/about/call-for-papers>

Submission open date: 1 March 2023

Submission deadline: 30 November 2023

Guest Editor:

Prof. Mi Sun Park (Seoul National University, Republic of Korea) and Prof. Terry Sunderland (University of British Columbia, Canada)

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Featured Newly Published Papers and Books

We ask for your cooperation in case you want to report news (see the section Newsletter contributions).

Beridze, B., Sękiewicz, K., Walas, Ł., Thomas, P. A., Danelia, I., Fazaliyev, V., ... & Dering, M. (2023). **Biodiversity protection against anthropogenic climate change: Conservation prioritization of *Castanea sativa* in the South Caucasus based on genetic and ecological metrics.** *Ecology and Evolution*, 13(5), e10068.

Brandano, A., Serra, S., Hardy, G. E. S. J., & Scanu, B. (2023). **Potassium Phosphonate Induces Resistance in Sweet Chestnut against Ink Disease Caused by *Phytophthora* Species.** *Pathogens*, 12(3), 365.

Braga, M., Araújo, S. D. S., Sales, H., Pontes, R., & Nunes, J. (2023). **Portuguese *Castanea sativa* Genetic Resources: Characterization, Productive Challenges and Breeding Efforts.** *Agriculture*, 13(8), 1629.

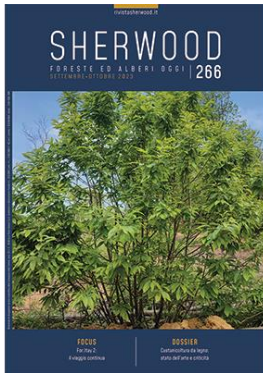
Brister, E., & Newhouse, A. E. (2023). Wishful Thinking vs. Hopeful Action: **Response to Diehm on American Chestnut Restoration.** *Ethics, Policy & Environment*, 1-5.

Çakar, D., Özer, G., Akıllı Şimşek, S., & Maden, S. (2023). **Determination of vc and mating types of *Cryphonectria parasitica* isolates by multiplex PCR and their genetic diversity in 13 chestnut-growing provinces of Turkey.** *Forest Pathology*, e12813.

Calandrelli, M. M., Nunziata, A., & De Masi, L. (2023). **Pilot Study on the Geographical Mapping of Genetic Diversity among European Chestnut (*Castanea sativa* Mill.) Cultivars in Southern Italy.** *Plants*, 12(4), 917.

- Carneiro-Carvalho, A. M., Pinto, T., Laranjo, J., & Anjos, R. **Biochemical study on the impact of SiK® fertilization in *Castanea sativa* Mill. seedling tolerance against water stress.** *Frontiers in Plant Science*, 14, 1120226.
- Coelho, V., Nunes, L., Moura, L., & Gouveia, E. (2023). **Characterization of chestnut bark fungal communities in healthy trees and blight recovered through natural or introduced hypovirulence.** *Journal of Plant Pathology*, 1-13.
- Colavolpe, M. B., Vaz Dias, F., Serrazina, S., Malhó, R., & Lourenço Costa, R. (2023). ***Castanea crenata* Ginkbilobin-2-like Recombinant Protein Reveals Potential as an Antimicrobial against *Phytophthora cinnamomi*, the Causal Agent of Ink Disease in European Chestnut.** *Forests*, 14(4), 785.
- Conn, C. E., Howie, N., Lynch, M., Lee, S., Young, E., Westbrook, J., ... & Cipollini, M. L. (2023). **Validation of an Alternative Small Stem Assay for Blight Resistance in Chestnut Seedlings and Recommendations for Broader Use.** *Plant Disease*, 107(5), 1576-1583.
- Diehm, C. (2023). **American Chestnut Restoration: Accommodating Others or Scaling Up?** *Ethics, Policy & Environment*, 26(1), 69-85.
- Dobry, E., Rutter, M., & Campbell, M. (2023). **The fungal pathogen *Gnomoniopsis castaneae* induces damaging cankers in multiple domestic Fagaceae species.** *Phytopathology(ja)*.
- Fornasaro, S., Ciani, F., Nannoni, A., Morelli, G., Rimondi, V., Lattanzi, P., ... & Costagliola, P. (2023). **Tree Rings Record of Long-Term Atmospheric Hg Pollution in the Monte Amiata Mining District (Central Italy): Lessons from the Past for a Better Future.** *Minerals*, 13(5), 688.
- Geçioğlu Erincik, B., & Erincik, Ö. (2023). **Potential of *Cryphonectria hypovirus 1* (CHV1) for horizontal transmission in the *Cryphonectria parasitica* population in Aydın Province/Türkiye.** *Australasian Plant Pathology*, 1-9.
- Iacopetti, G., Selvi, F., Bussotti, F., Pollastrini, M., Jucker, T., & Bouriaud, O. (2023). **Tree diversity and identity modulate the growth response of thermophilous deciduous forests to climate warming.** *Oikos*, 2023(3), e08875.
- Jacobs, D. F., Dumroese, R. K., Brennan, A. N., Campbell, F. T., Conrad, A. O., Delborne, J. A., ... Greenwood, L. (2023). **Reintroduction of at-risk forest tree species using biotechnology depends on regulatory policy, informed by science and with public support.** *New Forests*, 1-18.
- Lema, F., Baptista, P., Oliveira, C., & Ramalhosa, E. (2023). **Brown Rot Caused by *Gnomoniopsis smithogilvyi* (syn. *Gnomoniopsis castaneae*) at the Level of the Chestnut Tree (*Castanea sativa* Mill.).** *Applied Sciences*, 13(6), 3969.
- Luchese, L., Nunes, L., & Patrício, M. S. (2023). **Estimation of carbon stock in young sweet chestnut forest and agroforest plantations.** In VII International Chestnut Symposium ISHS.
- Marcolin, E., Clark, S. L., Patrício, M. S., & Loewe-Muñoz, V. (2023). **Advances and perspectives on the ecology and management of *Castanea* species.** *Forest Ecology and Management*, 542, 121119.
- Mouneimne, A. H., Atallah, T., Halwani, J., & Darwish, T. (2023). **Impact of treated wastewater on the performance of young plants of stone pine (*Pinus pinea* L.) and sweet chestnut (*Castanea sativa* Mill.) under semi-controlled Mediterranean conditions.** *Euro-Mediterranean Journal for Environmental Integration*, 8(1), 143-151.

- Nie, X., Zhao, S., Hao, Y., Gu, S., Zhang, Y., Qi, B., . . . Qin, L. (2023). **Transcriptome analysis reveals key genes involved in the resistance to *Cryphonectria parasitica* during early disease development in Chinese chestnut.** *BMC plant biology*, 23(1), 1-15.
- Patrício, M. S., & Tomé, M. (2023). **Stem volume ratio equations to variable merchantable limits for sweet chestnut in Portugal.** In VII International Chestnut Symposium, ISHS.
- Pereira-Obaya, D., Castedo-Dorado, F., Sanz-Ablanedo, E., Mejía-Correal, K. B., & Rodríguez-Pérez, J. R. (2023). **Leaf Trait Hyperspectral Characterization of *Castanea sativa* Miller Affected by *Dryocosmus kuriphilus* Yasumatsu.** *Agronomy*, 13(3), 923.
- Perulli, G. D., Boini, A., Morandi, B., Grappadelli, L. C., & Manfrini, L. (2023). **The effects of chestnut orchard microclimate on burr development.** *Scientia Horticulturae*, 319, 112183.
- Poljak, I., Tumpa, K., Vidaković, A., Ćurković-Perica, M., Ježić, M., Šatović, Z., ... & Idžojtić, M. (2023). **Conservation and management of sweet chestnut genetic resources.** *Šumarski list*, 147(3-4), 137-146.
- Popović, M., Nuskern, L., Peranić, K., Vuković, R., Katanić, Z., Krstin, L., ... & Idžojtić, M. **Physiological variations in hypovirus-infected wild and model longterm laboratory strains of *Cryphonectria parasitica*.** *Frontiers in Microbiology*, 14, 1853.
- Possamai, G., Dallemole-Giaretta, R., Gomes-Laranjo, J., Sampaio, A., & Rodrigues, P. (2023). **Chestnut Brown Rot and *Gnomoniopsis smithogilvyi*: Characterization of the Causal Agent in Portugal.** *Journal of Fungi*, 9(4), 401.
- Prospero, S., Heinz, M., Augustiny, E., Chen, Y. Y., Engelbrecht, J., Fonti, M., ... & Fonti, P. (2023). **Distribution, causal agents, and infection dynamic of emerging ink disease of sweet chestnut in Southern Switzerland.** *Environmental Microbiology*, 1-16.
- Rich, F. J., & Pirkle, F. L. (2023). **The Neogene-Quaternary palynological record of *Castanea* in the American southeast.** *Palynology*, 2209621.
- Rodríguez-Molina, M. d. C., García-García, M. B., Osuna, M. D., Gouveia, E., & Serrano-Pérez, P. (2023). **Various Population Structures of *Cryphonectria parasitica* in Cáceres (Spain) Determine the Feasibility of the Biological Control of Chestnut Blight with Hypovirulent Strains.** *Agronomy*, 13(5), 1208.
- Romon-Ochoa, P., Smith, O., Lewis, A., Kupper, Q., Shamsi, W., Rigling, D., . . . Ward, L. (2023). **Temperature Effects on the *Cryphonectria hypovirus 1* Accumulation and Recovery within Its Fungal Host, the Chestnut Blight Pathogen *Cryphonectria parasitica*.** *Viruses*, 15(6), 1260.
- Sandercock, A. M., Westbrook, J. W., Zhang, Q., & Holliday, J. A. (2023). **The road to restoration: Identifying and conserving the adaptive legacy of American chestnut.** *bioRxiv*, 2023-05.
- Saulino L., Rita A., Stinca, A., Liuzzi, G., Silvestro, R., Rossi, S., & Saracino A (2023) **Wildfire promotes the invasion of *Robinia pseudoacacia* in the unmanaged Mediterranean *Castanea sativa* coppice forests.** *Front. For. Glob. Change* 6:1177551. doi: 10.3389/ffgc.2023.1177551
- Varas, E.; Valladares, S.; Vielba, J.; Vidal, N.; Sánchez, C. **Expression of CsSCL1 and Rooting Response in Chestnut Leaves Are Dependent on the Auxin Polar Transport and the Ontogenetic Origin of the Tissues.** *Plants* 2023, 12, 2657.
- Xofis, P., Buckley, P. G., Kefalas, G., Chalaris, M., & Mitchley, J. (2023). **Mid-Term Effects of Fire on Soil Properties of North-East Mediterranean Ecosystems.** *Fire*, 6(9), 337.

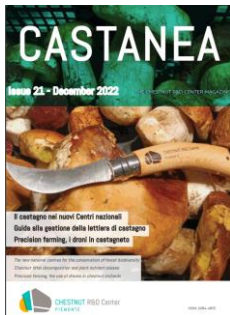


DOSSIER - Castanicoltura da legno: stato dell'arte e criticità (Chestnut cultivation for timber production: state of the art and critical points).

Sherwood nr. 266

An Italian journal of forestry (in Italian) presenting a special issue on chestnut silviculture & techniques for timber production.

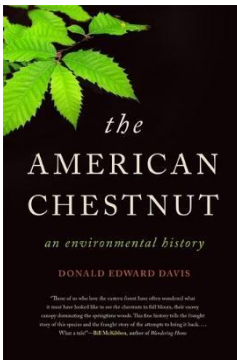
<https://www.rivistasherwood.it/t/publicazioni/dossier-castagno.html>



THE CHESTNUT R&D CENTER MAGAZINE

News about R&D concerning Castanea sativa (in Italian and English)

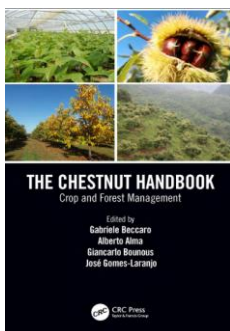
<https://centrocastanicoltura.org/magazine/>



The American Chestnut: An Environmental History. 2021, University of Georgia Press. Athens, Georgia, USA. ISBN: 9-780-8203-6045-4.

Davis, D. E

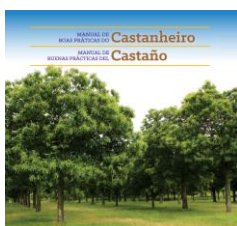
<https://ugapress.org/book/9780820360454/the-american-chestnut/>



The Chestnut Handbook. 2020, CRC Press.

Beccaro, G., Alma, A., Bounous, G., Gomes-Laranjo, J. (Eds.).

<https://doi.org/10.1201/9780429445606>



Manual de Boas Práticas do Castanheiro.

Manual de Buenas Prácticas del Castaño.

Bento, A. and Ribeiro, A. C. (Eds.).

<http://esa.ipb.pt/pdf/ManualBoasPraticasCastanheiro.pdf>



Le selve castanili della Svizzera italiana. Aspetti storici, paesaggistici, ecologici e gestionali. Memorie della Società ticinese di scienze naturali, 13, 249 p.

Moretti M., Moretti G. & Conedera M. (eds.).

Multimedia

11

- A traditional song dedicated to the chestnut leaf with a new twist. “The chestnut leaf of the Botanica Album by Abe Rábade”: <http://www.youtube.com/watch?v=Adwf90oNiGQ>
- A video on the Introduction of the American chestnut details the history of the species in North America, its ecological and cultural significance, and its eventual demise as a functioning ecological species: <https://youtu.be/6lQyqrlgg3k?si=yOoiFyUBOLBp-X5W>

YouTube Search

RESTORATION RESEARCH OF THE
AMERICAN CHESTNUT
PART I - INTRODUCTION

USDA FOREST SERVICE

0:02 / 9:44

Restoration Research of the American Chestnut (Part 1 Intro)

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Newsletter contributions

Do you have news for us? Newsletter contributions are welcome (i.e. upcoming Seminars, Scholarships, Workshops, Conferences, Blogs, Websites...).

If you would like to contribute to the newsletter, please contact Stacy Clark (stacy.l.clark@usda.gov), Veronica Loewe (vloewe@infor.cl), Maria Patricio (sampat@ipb.pt) or Enrico Marcolin (enrico.marcolin@unipd.it).