

# NEWSLETTER OBSERVATORY OF HIGH-STAKE SPECIES FOR HUMAN HEALTH



OBSERVATOIRE DES ESPECES  
A ENJEUX  
POUR LA SANTE HUMAINE

## In this issue

## Science

### OPHRAELLA COMMUNA - INTEGRATING SPECIES ATTRIBUTES TO PREDICT SPATIALLY EXPLICIT IMPACT

“Let’s talk about **Ambrosia!**” are regular short online conferences organised by the International Ragweed Society that aim to share knowledge about all aspects of vital ragweed functions, its impact and means of control.

This third session was presented by Pr **Yan Sun** from the Huazhong agricultural university, Wuhan (China). The subject of her communication was "Beyond distribution modeling of *Ophraella communa*: integrating species attributes to predict spatially explicit impact".

She presented an integrated approach to assess the potential impact of biological control agents (BCAs) on invasive alien species (IAS), specifically focusing on the leaf beetle *Ophraella communa* as a biocontrol candidate for the allergenic plant *Ambrosia artemisiifolia* (common ragweed) in Europe.

She first showed how her team constructed species distribution models for *A. artemisiifolia* and its biocontrol agents *O. communa*, assessing climatic and geographic range overlaps. Then, how they extended a species distribution model by incorporating climate-dependent vital rates to predict the population build-up of *O. communa* across Europe. Through field and laboratory experiments, **they identified temperature and relative humidity as critical factors influencing the beetle's lifecycle** and egg hatching success.

The research predicts the **highest population densities in northern Italy and parts of western Russia and Georgia**, with observed field impacts corroborating these findings. Furthermore, they quantified the public health impact of *A. artemisiifolia* in Europe and the potential benefits of implementing *O. communa* as a biocontrol. It reports that prior to

*O. communa*'s establishment, **Ambrosia-induced allergies affected around 13.5 million people, incurring costs of €7.4 billion annually**<sup>1</sup>.

Projected benefits of biocontrol include a substantial reduction in both the number of patients and healthcare costs.

Together, these studies advocate for a multifaceted approach in biocontrol programs, considering ecological, climatic, and socio-economic factors. They propose that integrating species distribution models with climate-dependent vital rates, a biogeographic perspective on candidate selection, and an understanding of the public health impacts can lead to more effective and targeted management strategies.

Her presentation can be seen online on :  
<https://youtu.be/dXavFWVxZAs>

LET'S TALK ABOUT  
**Ambrosia!**

*Ophraella communa*  
Beyond distribution modeling:  
integrating species attributes to  
predict spatially explicit impact

Short conferences online organised by the  
**International Ragweed Society**  
[www.internationalragweedsociety.org](http://www.internationalragweedsociety.org)

华中农业大学  
HUAZHONG AGRICULTURAL UNIVERSITY

yan.sun@mail.hzau.edu.cn

International Ragweed Society

**You can be a speaker too!** If you would like to present your ragweed-related work or project to the community, please contact: [irs.ragweed@gmail.com](mailto:irs.ragweed@gmail.com) with a short summary of your presentation proposal.

N°10 FEBRUARY 2024

*Ophraella communa*  
- Integrating species  
attributes to predict  
spatially explicit impact

IRS grants for World  
Aerobiology 2024

Meet us at the 60th  
edition of the Paris  
International Agricultural  
Show (SIA)

## IRS GRANTS FOR WORLD AEROBIOLOGY 2024

The World Aerobiology 2024 will be held in Vilnius, Lithuania, from July 1-5, 2024. This joint meeting will feature three major events, including the 8th European Symposium on Aerobiology (8th ESA), the 12th International Congress on Aerobiology (12th ICA), and the 5th International Ragweed Conference (5th IRC). Participants will have the opportunity to share their research, knowledge, and innovations in the study of airborne particles such as pollen, spores, and other bioaerosols. The international event will cover a wide range of topics and interactive sessions, workshops, and presentations will encourage lively discussions and exploration of new research directions.



**WORLD  
AEROBIOLOGY  
2024 • Vilnius**

**The International Ragweed Society is announcing five grants of 600 euros each** to promote the participation of researchers in the conference ! When applying for the grant, priority is given for Early Career Researchers who are individual members of the IRS and come from low-income countries. Applicants must be present at the conference, and present a talk or a poster, thus submitting an abstract. Grants will be awarded immediately after the conference. Applicants have to submit a grant application with the following complementary documents:

1. Cover letter (not exceeding one page),
2. Abstract of your oral or poster presentation,
3. Short CV (not exceeding one page),
4. Support letter (not exceeding half a page) from an IRS member (having paid the 2023-2024 IRS membership fee).

### Application procedures:

All the documents must be sent by 16th of February to the IRS President László Makra (makralaszlo@szte.hu), using the email Subject: World Aerobiology 2024 Application\_last name.

For more info : <https://internationalragweedsociety.org/irs-grants-for-world-aerobiology-2024/>

## MEET US AT THE 60TH EDITION OF THE PARIS INTERNATIONAL AGRICULTURAL SHOW (SIA)

The Observatory of high-stake species for human health will be from Saturday 24 February to Sunday 3 March 2024 at the Parc des Expositions, Porte de Versailles for the international agriculture show. Our stand (FREDON France) will be at Pavilion 2.2 (Crops and plant sectors), Allée E n°025.

Aware that the health of plants, people and the environment are closely linked, FREDON France network has been acting since the end of the 19th century to take good care of plants, protect them from pests and promote good environmental practices and protect ourselves against species impacting human health. With more than 600 employees, our daily actions fit perfectly into the One Health concept.

A varied program awaits visitors on the FREDON France stand during SIA. Every weekday, a sector will be highlighted by our experts, in order to promote sustainable and efficient solutions and systems.

Ragweed and others invasive species will be presented during week-ends (24-25 february and 2-3 march).

### SOURCES

1. **Schaffner et al. (2020)** - [Biological weed control to relieve millions from Ambrosia allergies in Europe. Nature communication 11, 1745](#)

### REDACTION:

Marilou MOTTET  
Alice SAMAMA  
Tristan GRAUSI



### CONTACT:

[especies-risque-sante@fredon-france.fr](mailto:especies-risque-sante@fredon-france.fr)

Tel : +33 (0)1 53 83 71 76

Follow all the Observatory actions on social medias:



[Former Ragweed Observatory letters can be consulted here](#)

### SHORT NOTICE

- Early processions : due to the particularly warm autumn of 2023 (the hottest since 1900), the public was able to observe numerous early processions of pine processionary caterpillars in France.