ISSUE 2 · JULY 2025

# ASIFF

Newsletter
Academic Society of Insects as Food and Feed

## Welcome to the 2nd edition of the ASIFF newsletter!

We are thrilled to bring you another round of updates from the Academic Society of Insects as Food and Feed.

In this issue, you will find exciting research highlights, community news, and a look back at recent events shaping the future of insects in food and feed. Thanks for being part of our growing global network. Together, we are advancing the field one insect at a time!


Photo credit: Mr. Joerg Sarbach

Panel discussion Future of Alternative Proteins Cultivation and Processing during Insects Plus conference in Cloppenburg on May 12-14, 2025

Read an interview with Assoc. Prof. Kashif Ur Rehman on pages 2-5

## This issue:

# Insects Plus 2025 International Congress

On May 12-14, 2025, Insects Plus 2025 congress took place in Cloppenburg, Germany.

Assoc. Prof. Kashif ur Rehman, one of the organizers of the congress, shared highlights and key insights with ASIFF newsletter.

Photo credit: Mr. Joerg Sarbach

More than 350 guests from over 30 countries across 6 continents, the first-ever Insects Plus Congress showcased cutting-edge research and bold visions for mainstreaming insects in food systems.

## What inspired you to organize the first Insects Plus International Congress?

The Insects Plus International Congress is a logical and strategic continuation of our longstanding commitment to biomass conversion and sustainable protein production. Since 2018, we have been actively operating our insect farm based on the black soldier fly (*Hermetia illucens*), while simultaneously engaging in intensive research and development in the broader field of bio-based resource utilization. Over the years, we have witnessed a rapidly growing global interest in alternative proteins from insects and microorganisms to algae and other emerging sources, which has further affirmed the relevance and urgency of this field.

Recognizing the critical importance of interdisciplinary collaboration in advancing these innovative approaches, we decided to establish a dedicated platform that brings together key stakeholders from science, industry, and practice. Therefore, Insects Plus Congress is being organized in partnership with the Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), with whom we have maintained a productive and valued collaboration, particularly with Professor Schlüter's research group. Their scientific expertise has significantly enriched our work and reinforced our shared vision for a sustainable, knowledge-driven bioeconomy.


Photo credit: Mr. Joerg Sarbach

## In your view, what sets Insects Plus apart from other conferences?

Insects Plus stands out by uniquely bridging academic research and industrial practice within the alternative biomass sector. Unlike many conferences, it takes a holistic approach, covering the entire value chain from cultivation to processing and sustainability, across diverse biomass sources such as insects, plants, lab-grown, marine, and unicellular organisms. Moreover, it offers not only traditional specialist presentations but also interactive formats, panel discussions, a dedicated start-up session, an innovation corner, an accompanying exhibition, and concrete application examples covering the entire value chain of alternative biomass, covering topics from biomass conversion and AI-supported production to regulatory and social considerations creating a distinctive and comprehensive content profile. This makes Insects Plus a platform for genuine exchange, new collaborations, and forward-looking innovations.

## What was the biggest challenge you encountered in organizing the event?

The biggest challenge in organizing the Insects Plus 2025 International Congress was coordinating the logistical and infrastructural demands of a multi-day international event in a semi-urban setting. Securing suitable venues, ensuring access to advanced technical equipment, and accommodating over 350 international guests required extensive planning and strong regional collaboration. We found reliable support from the Cloppenburg Town Hall and district authorities, and we were able to utilize multiple locations, including the district building, for special sessions, such as the Young Forum and the Startup Innovation Corner, and the VEC halls in the district of Vechta for the congress dinner. While local accommodation options were quickly stretched to capacity, the high demand reflected the significant global interest in the congress. Our close cooperation with the economic development agencies of Cloppenburg, Vechta, and Osnabrück was essential, enabling us to activate regional networks early on and develop effective, pragmatic solutions. This experience demonstrated that, with coordinated local support, international events of this scale can be successfully hosted even outside major urban centers.

Photo credit: Mr. Joerg Sarbach

## Who was the intended audience for the conference?

The intended audience for the Insects Plus 2025 International Congress includes academic researchers, industry professionals, technology providers, start-ups, investors, and decision-makers involved in the cultivation, processing, and application of alternative proteins. The event aims to connect the scientific and industrial communities working across the entire alternative biomass value chain, including insect, plant-based, lab-grown, unicellular, and marine sources.

INSECTS PLUS INTERNATIONAL CONGRESS

## Why was Cloppenburg selected as the host city for the inaugural event?

Cloppenburg was chosen as the host city for the inaugural Insects Plus 2025 International Congress due to its strategic location within one of Germany's most dynamic agricultural regions, Oldenburg Münsterland. This region is widely recognized for its strong agricultural and food industry presence and its role as a center of innovation in sustainable farming practices. Cloppenburg's proximity to numerous leading companies and institutions in these sectors provides an ideal setting for fostering meaningful dialogue and collaboration between academia and industry. As agriculture in the region undergoes a significant transition toward sustainability, Cloppenburg offers a highly relevant and practical context for discussing the cultivation and processing of alternative proteins and biomass. The location thus supports the congress's mission to bridge research and industry through a holistic approach to food system transformation.

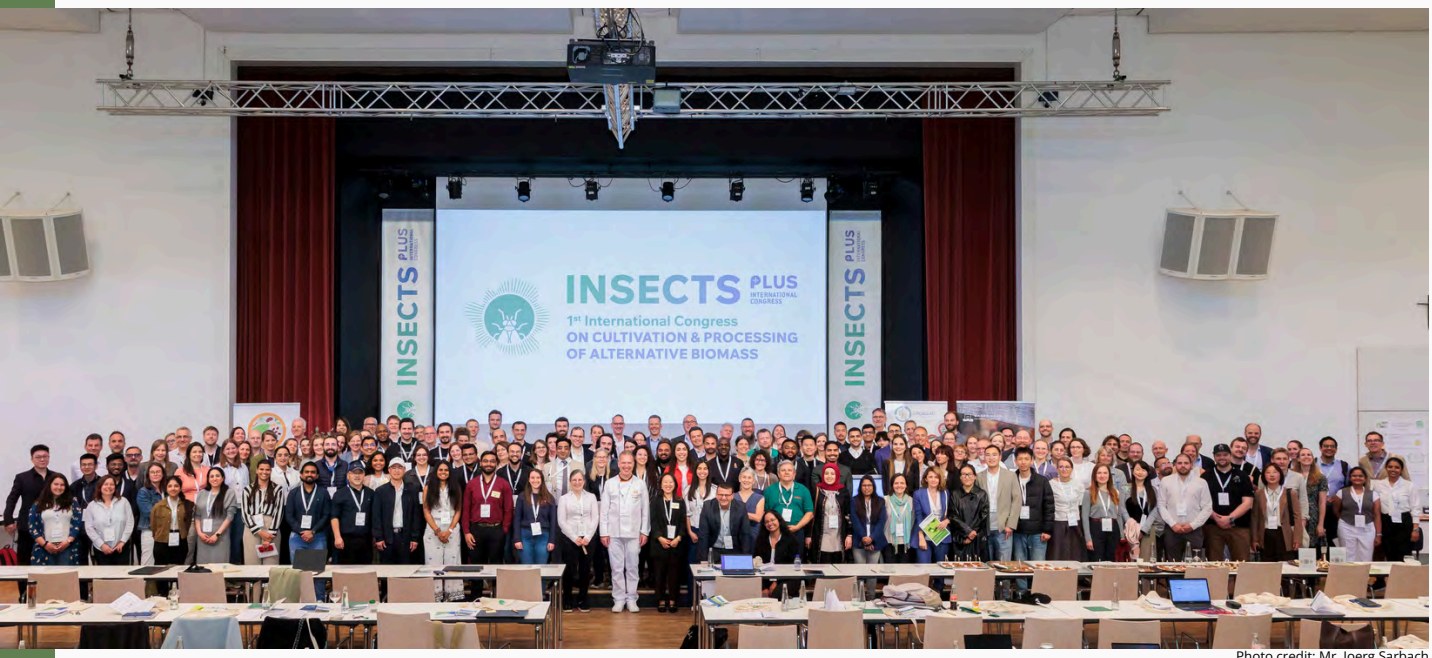


Photo credit: Mr. Joerg Sarbach

## How do you envision the future of insect-based and alternative proteins in Europe?

Insect-based and alternative proteins hold strong potential to support Europe's transition to a more sustainable and resilient food system. Nutrient-rich, resource-efficient, and climate-friendly, these proteins align with EU environmental goals and respond to global challenges such as food security and climate change. Recent regulatory approvals have created legal certainty, opening new markets for food, feed, and specialized applications. However, broader consumer acceptance, particularly of insect-based products, requires overcoming cultural barriers. Key to this will be clear labelling, appealing product design, competitive pricing, and targeted education. With support from industry, policymakers, and the media, insect consumption can become mainstream. Events like Insects Plus 2025 are crucial in connecting research and industry, accelerating innovation, and shaping a unified approach to alternative protein development. With coordinated action, Europe can lead in advancing sustainable protein solutions for the future.

## What are your hopes or plans for the next edition?

Building on the successful launch of Insects Plus 2025, our hopes for the next edition are to further strengthen and expand the congress's role as the premier global platform for alternative biomass innovation. We aim to deepen interdisciplinary collaboration by attracting an even broader spectrum of stakeholders, including researchers, industry leaders, start-ups, investors, and policymakers, from diverse regions and sectors. We envision increased interactive formats and practical demonstrations to bridge science and industry more effectively. Additionally, rotating the event to new locations, as planned for 2027 under the leadership of the Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB) in the German capital region, will promote wider international engagement and regional synergies. We also hope to build on the multidisciplinary content profile by integrating emerging topics such as AI-driven production, circular bioeconomy models, and evolving regulatory frameworks. Ultimately, the next edition should continue to foster meaningful dialogue, accelerate innovation, and support Europe's leadership in sustainable alternative protein systems, while making the congress more accessible and impactful for all participants worldwide.

Photo credit: Mr. Joerg Sarbach

## Were there any key highlights, statistics, or milestones from this year's event that you'd like to share with our readers?

Yes, Insects Plus 2025 marked a significant milestone in advancing the global dialogue around the cultivation and processing of alternative biomass for food, feed, and specialised applications. As the inaugural edition of the International Congress, the event welcomed over 350 participants from more than 30 countries across six continents, featuring its truly global reach and relevance. A standout feature of the congress was the rich and diverse scientific program, featuring over 60 presentations, start-up innovation pitches, and workshops, and its effective integration of science and practice, exemplified by over 25 exhibitors and excursions to industrial facilities, offering participants firsthand insights into cutting-edge applications and technologies. This blend of academic depth and industry relevance underscored the congress's role as a pivotal meeting point for research institutions, innovative start-ups, global producers, and technology providers. Additionally, more than 70 academic and research institutions participated, providing strong contributions that bridged the gap between cutting-edge scientific research and real world industrial applications. Building on this successful launch, the Insects Plus congress will continue as a biennial event, rotating locations to promote broader international collaboration. The next edition is scheduled for 2027, to be held under the leadership of the ATB in Germany's capital region.

Editorial

# Working out the bugs:

## Navigating challenges and unlocking opportunities in the insect industry

Insects as food and feed have, over the past decade, been highlighted as a promising and sustainable solution for feeding a growing population. Yet, despite a decade of innovation, the insect industry has not grown or established itself as expected.


## Meet the authors

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Wageningen University and Research, the Netherland


In this Editorial, the authors highlight the sector's potential, while also acknowledging and addressing its current limitations and key challenges. These include integrating circular production systems within existing regulatory frameworks in the Global North, ensuring product safety in circular systems, assessing allergen risks in insect-based products, mitigating biosecurity risks from non-native species, evaluating the environmental safety of insect by-products, and promoting animal welfare in insect production.

Or, put differently, we aim to “Workout the bugs” of the industry.

## “... insects hold great promise”

The evidence presented in the editorial confirms that insects hold great promise — not only for food and feed, but also for waste management. We suggest that the struggles faced by the insect industry may not be entirely intrinsic to the technology itself, but could also reflect the broader difficulties of running circular businesses a predominantly linear economic system.

To unlock the full potential of the insect sector, we believe that stakeholders — researchers, regulators, producers, and consumers — must continue to collaborate transparently, adapt to emerging knowledge, and collectively push for policies that enable a genuinely sustainable shift from linear to circular food systems.


Open access and available in Journal of Insects as Food and Feed

Editorial

# The Belgian paradox

## Leading in insect research, lagging in production

Belgium has a strong reputation in insect research, yet this contrasts sharply with its relatively limited commercial insect production. This disparity underscores both the country's promising capabilities and the hurdles it faces.

Despite a solid base established by researchers and pilot projects, scaling up to industrial insect farming is still constrained by financial, regulatory, and market challenges. In the following, this situation will be explored further and potential future developments and strategies to bridge the gap between research and commercial application will be discussed.


### Meet the author

**Thomas Spranghers**
VIVES University of Applied Sciences, Belgium


# Course

## Black Soldier Fly: Boosting a Sustainable Future

| | |
|---|---|
| Date | 23-27 March 2026 |
| Location | Wageningen Campus |
| Course leader | Arnold van Huis, Emeritus professor Wageningen University & Research |

How can one insect reshape the global food system? The Black Soldier Fly (BSF) is rapidly gaining attention for its unique ability to transform organic waste into high-value protein, oils, and fertilizer. As the demand for sustainable solutions in food, feed, and farming grows, BSF offers a scalable and impactful answer. This course empowers professionals to understand and apply the full BSF value chain. From rearing and waste conversion to legislation, processing and product application. This programme equips you with knowledge, skills, and connections to lead in circular food systems.

# Member Research Highlights

## What is your research about?

I study how black soldier fly (BSF) larvae respond to changes in their diet, specifically, how increasing dietary iron affects their growth and nutritional content.

## Why focus on BSF and iron?

BSF larvae are a sustainable protein source with great potential for food and feed. They are naturally rich in iron, and fortifying them further through diet could help address widespread iron deficiency in humans and livestock.

Washed and sieved iron fortified larvae

Photo credit: Tomer First

Tomer First is PhD candidate at Food Quality and Design Group, Wageningen University

## What did you find?

We showed that BSF larvae can triple their iron levels when reared on iron-rich feed, without compromising growth or survival. Interestingly, their calcium content also rose by over 20%, and we observed stress-linked cuticle changes at very high iron levels. These findings show that BSF larvae are highly efficient at mineral accumulation.

## Why does it matter?

These results position BSF larvae as a potent, sustainable source of both iron and calcium. With dietary manipulation, they can help enrich food and feed with essential micronutrients.

## What's next?

We are now exploring how BSF larvae manage to accumulate such high iron levels and evaluating the nutritional quality and bioavailability of that iron for human and animal use.

BSF larvae gut stained the iron stain Prussian blue

Photo credit: Tomer First

# Member Research Highlights

Marième Dallaire-Lamontagne is a PhD student at Université Laval.

## What is your research about?

My doctoral research aims to optimize the valorization of livestock residues using black soldier fly larvae, in combination with fermentation-based pre-treatment. I focus on controlling potential risks, improving the efficiency of bioconversion, and evaluating whether the process is technically and economically feasible.

## What was your case study?

Among the various livestock residues available in Quebec, our work targeted the valorization of hatchery residues. These include discarded chicks, embryos, eggs, and eggshells. Such residues are produced in large volumes and are rich in protein. However, their management is challenging due to their variable composition, shell content, strong odors, and the presence of pathogens.

## What did you find?

Fermentation effectively reduced coliform counts to below 1.7 log CFU/g and limited the production of odor-causing volatile compounds. Bioconversion trials then showed that black soldier fly larvae can grow on hatchery residues, but fermentation negatively affects larval performance. It alters substrate texture, leading to liquefaction and high larval mortality (>90%). To address this, the addition of structuring co-products is recommended. Finally, a large-scale centralized production model was found to be the most profitable. However, decentralized models treating at least 15 tonnes of residues per week and located at hatcheries remain relevant for reducing disposal costs compared to conventional rendering services, even without direct profit.

# Member Research Highlights

## Why does it matter?

In Canada, thermal rendering is a conventional method for managing animal waste, including hatchery residues. Despite its efficiency in converting animal residues into feed, this method is associated with significant energy costs and greenhouse gas emissions. Beyond environmental concerns, producers also face frustrations due to high fees for this service. Therefore, there is strong interest in on-farm residue management solutions that allow producers to autonomously manage their residues. This project aims to address that need by proposing a viable solution applicable in the Quebec context.

Grinding of hatchery residues into a homogeneous paste in preparation for experimental trials

## What's next?

The next step of the project could involve testing the process with other types of residues available in larger volumes than hatchery residues, such as slaughterhouse sludge. Additionally, we are investigating different cleaning methods to remove residual animal proteins (e.g., poultry proteins) that may remain in the larvae, ensuring compliance with current Canadian regulations for using insects as animal feed.

Colony counts of indicator microorganisms to assess the microbiological quality of hatchery residue-based substrates

pH measurement during the monitoring of hatchery residue fermentation

Want to share your research? Email us at info@asiff.org

# ASIFF council news

We are pleased to announce the first official Annual Meeting of the Academic Society of Insects as Food and Feed. The event will take place online, and invitations will be sent to all ASIFF members. Mark your calendars—we look forward to your participation!

**SAVE THE DATE**
**September 10, 2025, 14:30 CET**
**First official Annual ASIFF Meeting**

## What to expect from the event?

The Academic Society of Insects as Food and Feed (ASIFF) was established on June 5, 2024. Board members have been appointed and may be officially elected by the membership for fixed terms during the 2025 annual meeting. The by-laws of ASIFF are to be ratified by the members.

The annual report detailing ASIFF's activities will be presented, along with the financial report and the proposed membership fee for 2026, which will be subject to approval.

Various sections—working groups—will be introduced, and the latest updates regarding the Insects to Feed the World 2026 conference will be presented by the local organizers.

Following the conclusion of the general assembly, attendees are invited to participate in breakout sessions focused on the sections—working groups — of interest, providing an opportunity to gather information and discuss their structure and objectives.

# New ASIFF working groups

## Consumer Perception of Insects as Food

New ASIFF Working Group focused on Consumer Perception of Insects as Food is forming. The group will explore cultural, psychological, and generational attitudes toward edible insects, and how these perceptions influence policy, marketing, and adoption of insect-based foods. If you're interested in sustainable protein alternatives, food innovation, or consumer behavior, we welcome your expertise and ideas.

For more information or to express your interest, please contact Dr. Diana Bogueva diana.bogueva@curtin.edu.au

Photo credit: Hans Smid

Photo credit: Maryia Mishyna

## Insects Food Ingredients and Foods

Insect Ingredients and Foods working group will aim to advance edible insect processing through the development of innovative methodologies and interdisciplinary research. The group will focus on conceptualization of insect processing techniques, designining and prototyping novel food concepts, and exploring new processing strategies and technologies. The goal is to broaden the understanding and practical applications of insect-derived food ingredients across a wide range of food products, supporting sustainable, nutritious, and consumer-acceptable solutions in science, technology, and gastronomy.

For more information or to express your interest, please contact Dr. Maryia Mishyna, maryia.mishyna@wur.nl

## Harmonisation of LCA methodological choices to improve study comparability

LCAs involve many methodological choices, which can make it hard to compare the impacts of inputs, process, energy mixes, geographical differences and boundary conditions. By improving transparency of methodology, assumptions, allocation approaches and conversion factors used, and other choices made in variable factors, it is hoped that the comparability and usefulness of all studies can be improved. The working group aim is to help facilitate this process in the insect sector.

For more information or to express your interest, please contact Assoc. Prof. David Allan (adj), djallan7@gmail.com

Photo credit: Joerg Sarbach

# New ASIFF working groups

## Insect Technology Innovations for Sustainable Food Systems

Insect Technology Innovations for Sustainable Food Systems working group is dedicated to advancing technological innovations that optimise insect farming from breeding through bioconversion to processing for key insect species (black soldier fly, mealworms, crickets and others). This group will focus on developing and refining insect breeding techniques, integrating microbial systems for efficient bioconversion, applying automation and smart farming tools, and exploring advanced processing technologies for insect biomass and frass. By developing interdisciplinary collaboration among researchers, technologists, and industry stakeholders, the group aims to accelerate scalable, sustainable, and efficient farm-to-fork insect production systems that contribute to global food security and the circular bioeconomy.

If you are interested in sustainable insect farming technologies, microbial-assisted insect bioconversion, advanced processing, and automation in insect production, we welcome your expertise and ideas. For more information or to express your interest, please contact Dr. Kashif ur Rehman, k.rehman@dil-ev.de

Photo credit: Teun Veldkamp

## Insects Welfare

The AISFF Insect Welfare Working Group exists to foster collaborative research projects on insect welfare in industry contexts. Such projects may include identifying stress vectors, identifying downstream effects of those vectors, and investigating possible practices that could alleviate these issues.

For more information or to express your interest, please contact Dr. Meghan Barrett, meghbarr@iu.edu

## Insect Farming Sustainability

The AISFF Insect Farming Sustainability Working Group aims to explore this topic from a systemic and multidimensional perspective – integrating the social, environmental and economic aspects, with special attention to ecosystem services, One Health, and territorial approaches.

For more information or to express your interest, please contact Dr. Karol Barragán-Fonseca, kbbarraganf@unal.edu.co

**Interested to develop working group in other topic?**
**Explore ASIFF Working Groups page**

# Research projects highlights

## Safe Insects 2.0: Insects as intermediate step to safely feed former foodstuffs and animal by-products to livestock, aquaculture and pets (2025-2028)

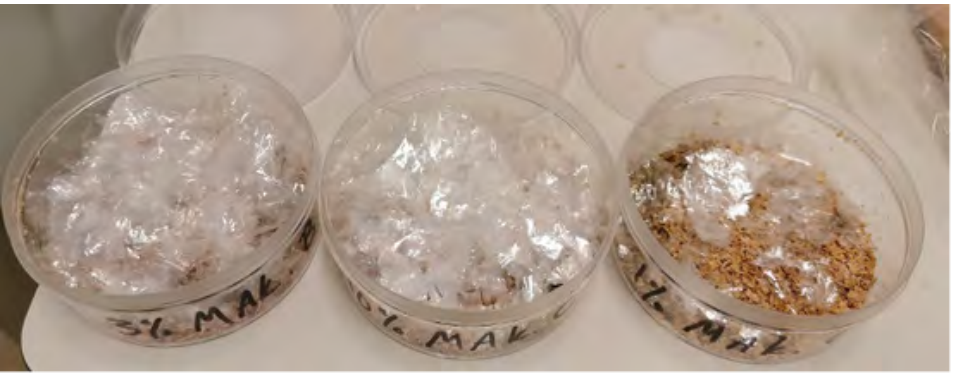
Black soldier fly larvae (BSFL) are promising insects for sustainable food and feed production, capable of being reared on residual streams unsuitable for conventional livestock. However, legal and economic barriers in the EU and UK restrict the use of certain rearing substrates. To enable regulatory change, scientific evidence on the safety of alternative substrates is required, particularly regarding microbiological, chemical, and prion-related risks. This project aims to fill data gaps by assessing the impact of biomass processing on safety across the production chain. Focus areas include former foodstuffs with meat/fish and category 2/3 animal byproducts from poultry farming.

Involved partners: Protix B.V., Nijsen Company B.V., Symrise, PreZero, Hermetia Baruth GmbH, Insect Bioconversion Association Ltd ("INBIA"), Innovafeed, Meatco. B.V., Venik, International Platform of Insects for Food and Feed (IPIFF), Top Sector Alliance for Knowledge and Innovation (TKI).

Contact:
Elise Hoek, elise.hoek@wur.nl

## Safety of packaging material in insect feed (2024-2027)

Former foodstuffs are a suitable feed material, also for farmed insects. According to EU legislation, feed may not contain particles from packaging materials, but it is hypothesized that this is less of an issue for insects than for conventional livestock. This project aims to collect more data regarding the safety of rearing selected insect species on substrates containing packaging materials, including biodegradable plastic materials. Possible hazards arising can be of both a physical (microplastics) and chemical (contaminants) nature. The potential transfer of particles from substrate to insect biomass will be investigated using microscopic methods. The transfer or bioaccumulation of chemical hazards present in packaging materials will also be studied. Finally, the effects of these materials on the tested insects (e.g. yield and survival) will be monitored, as well as the possible (bio)degradation of packaging material by the insects.



Involved partners: Ynsect SAS, Protix B.V., Nederlandse Vereniging Diervoederindustrie NEVEDI, Futerro SA, International Platform of Insects for Food and Feed (IPIFF), Top Sector Alliance for Knowledge and Innovation (TKI).

Contact: Nathan Meijer, Nathan.meijer@wur.nl

# Postcard from the Field

Learn more about this research by visiting their website: REFIPRO.

Want to share your field, lab, or other research photo? Email us with a short caption!

POSTCARD

Greetings from Kyaka 2 refugee settlement in Western Uganda! We're hard at work in the kitchen cooking up a special porridge enriched with yellow mealworms for school children. We're excited to find out how this porridge might help improve the growth, gut health, and micronutrient levels of kids aged 6 to 9 years as part of the REFIPRO study. At the heart of it, we're looking for nutritious, and sustainable and culturally accepted ways to make school meals better, especially in low-income communities.

**FROM:**

**TELE CHEPKOROS BOIT**

UNIVERSITY OF COPENHAGEN

DEPARTMENT OF NUTRITION, EXERCISE AND SPORTS

# “Nuoc Cham” Crickets

## Southern Vietnamese Tradition

### Ingredients (Two Servings)

- 1 cup of washed and degutted crickets (e.g., two-spotted field cricket), 2 cups cabbage, 16 prawn crackers, ½ cup mint leaves, ½ cup peanuts
- Nuoc Cham sauce: 3 tbsp fish sauce, 3 tbsp lime juice, 2 tbsp sugar, 3 tbsp warm water, 1 garlic clove (finely minced), 1-2 fresh chili (finely chopped)

### Preparation

- Deep-fry, drain, and set aside the crickets.
- Next, for the sauce, mix the fish sauce, lime juice, sugar, water, minced garlic, and chili.
- Return the crickets to the frying pan, add the sauce and cook briefly on medium-high heat until the liquid has reduced sufficiently.
- Finally, place the crickets on a bed of finely chopped cabbage, arrange with mint leaves and chili, sprinkle with peanuts.

**Recipe provided by Dr. Timothy Seekings**

timothyseekings@gmail.com

Postdoctoral fellow, Research Institute for the Humanities and Social Sciences, National Science and Technology Council, Taiwan

Follow the project on facebook.com/c.canteen.tw

Tips: Getting the sauce right is key and might take some practice. The taste should be a balance of salty, sour, sweet, and spicy. Lime juice can be substituted with tamarind paste or vinegar. Proportions should be adjusted to taste.

## Would like to be featured in next ASIFF newsletter?

Interested to participate in ASIFF communication activities (newsletter, website, etc)?

Contact us by sending email to info@asiff.org

Editors of ASIFF newsletter, issue 2: Maryia Mishyna, Cassandra Maya