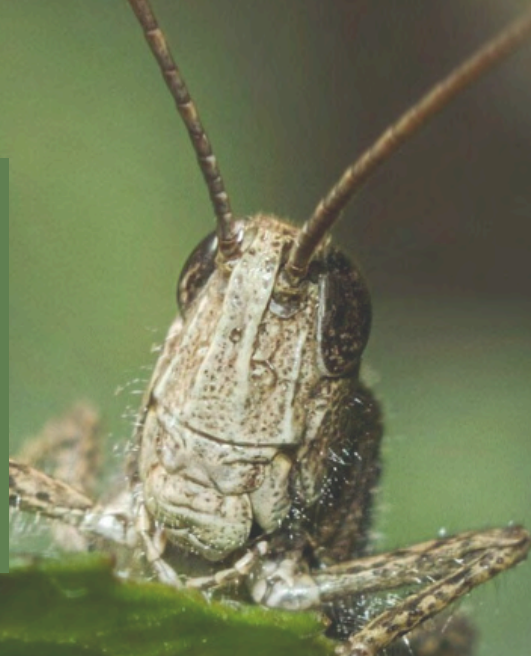


ISSUE 3 · OCTOBER 2025

ASIFF

Newsletter

Academic Society of Insects as Food and Feed



Welcome to the 3rd edition of the ASIFF newsletter!

Explore the latest from ASIFF! In this issue, we highlight project updates, the insect tasting event in Wrocław, the Insects as Feed and Food summer school in Italy, recent publications, and more.

Let the achievements of ASIFF members inspire you, and do not forget to share your research for our next issue!



Demonstration of cooking pasta with insect powder in ALMA-La Scuola Scuola Internazionale di Cucina Italiana, Italy

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Insect tasting event
in Wrocław

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➔ Read about summer school Insects as Feed and Food 2025 on pages 08-11

Not only for the brave!

Tasting insects in Wrocław

In September, Wrocław University of Economics and Business, Poland hosted edible insects tasting event. Visitors could see insects in many different forms. For the less adventurous, insect powders were hidden in familiar products such as chips, crackers, fruit, chocolate, nut bars, and cookies, which were baked especially for this event. For the more adventurous, there were whole insects: mealworms, house crickets, and migratory locusts, served with spices and in sweet versions – coated in different types of chocolate.

The event was organized by dr hab. inż. Agnieszka Orkusz, prof. UEW. *“I have been working on edible insects for over 7 years”, says Agnieszka Orkusz, “exploring them as innovative and sustainable food ingredients”.*

Research of Agnieszka Orkusz covers both product formulation and consumer acceptance. She incorporates insect powders (mainly *Acheta domesticus*, *Tenebrio molitor*, and *Gryllus bimaculatus*) into cereal-based products such as bread, pasta, and gluten-free blends, and evaluate their technological functionality, sensory quality, and nutritional value.



During the tasting event



dr hab. inż. Agnieszka Orkusz,
prof. UEW

“I also analyze the stability of insect-derived lipids during storage (temperature and light effects) and develop practical storage guidelines. In parallel, I investigate cultural and psychological factors—especially food neophobia—that shape the acceptance of insect-based foods, and design outreach activities to increase willingness to try processed, familiar products such as bread or pasta”, explains Agnieszka Orkusz. She also adds “My research is complemented by nutritional comparisons of insects and meat, supporting product design and public health communication.”

For more and less adventurous visitors

Festival participants showed great interest and curiosity, eagerly tasting the insects – especially the locusts. They asked about production details, the reasons for promoting insects as food, and where such products could be purchased.



Migratory locust



Bars with the addition of cricket

Many participants emphasized that this was a unique opportunity to see, touch, and taste insects – and that this direct experience made it easier for them to treat insects as a genuine food ingredient.

“As a Professor at Wrocław University of Economics and Business and Deputy Environmental Coordinator of the Lower Silesian Science Festival, I had the pleasure of independently preparing and running an event dedicated to edible insects during the 28th edition of the Festival, held in September 2025 in Wrocław, Poland.” - says Agnieszka Orkus



Cookies with cricket, and cricket powder



Chips with cricket

This enthusiasm demonstrates how education and direct contact can break barriers, and it reflects the growing momentum of discussions on edible insects – not only in Poland but also worldwide – a topic we actively explore within ASIFF (Academic Society for Insects as Food and Feed).

Written by Agnieszka Orkus

Insect holobionts

as a valuable tool for the valorisation of waste biomass rich in recalcitrant polymers

The use of insects as bioconversion agents is gaining increasing attention as a sustainable strategy for managing organic waste in the framework of a circular economy. However, the presence of recalcitrant polymers like plastics and lignocellulose in this matrix reduce the efficiency of the bioconversion process. While conventional pretreatments such as chemical or thermal methods are effective in degrading these polymers, they are costly, carbon-intensive, and compromise downstream valorization. An effective and environmentally sustainable solution may derive from the insects themselves. In fact, insect holobionts (i.e., the insect host and associated gut microbiota) reared on recalcitrant polymers may represent a source of microbial strains and enzymes capable to degrade these polymers.

Meet the authors

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The gut microbiota of certain insects (e.g., the black soldier fly *Hermetia illucens*, mealworms, waxworms, and termites) harbors microorganisms able to produce plastic- or lignocellulose-degrading enzymes. Rearing these insects on substrates enriched with recalcitrant polymers can select for specific biodegradation capacities, thereby allowing the identification of unique microbial strains and enzymes capable of biodegrading these polymers. These microbial strains and enzymes can then be optimized using advanced biotechnological approaches and synthetic biology and employed for targeted pretreatments prior to insect-mediated bioconversion.

“... new and challenging frontier in the field of insect-mediated bioconversion”

This area of research represents a new and challenging frontier in the field of insect-mediated bioconversion that should be further explored to move forward, as studies to date have mainly focused on documenting insect growth performance on substrates containing or contaminated by recalcitrant polymers, as well as on biomass composition and microbial community profiling. Therefore, future efforts should focus on: (i) mining and validating plastic- and lignocellulose-degrading enzymes; (ii) building public, robust, and reliable microbial collections and genomes databases; (iii) integrating targeted pretreatments with insect-mediated conversion; and (iv) assessing economic and environmental feasibility of these applications.

Although complete plastic elimination remains challenging, insect holobionts offer unique, underexplored ecosystems with high potential to develop cost-effective, scalable, and sustainable solutions for polymer-rich waste bioconversion.

[Open access and available in the Journal of Insects as Food and Feed](#)



Written by the authors of the Editorial

Gastronomy Spotlight:

Exploring Edible Insects Through Taste



Food is more than nourishment—it's a story of innovation, culture, and curiosity. This curated list, brought together by Prof. Arnold van Huis, highlights recent gastronomy articles that bring edible insects to the table through creativity and science.

1. Sustainable food alternative in gastronomy: edible insects (entomophagy). ([Dogan & Cekal, *International Journal of Agriculture, Environment and Food Sciences*, 2022](#)).
2. Edible Insects – Exotic food or gastronomic innovation? Study involving 14 countries. ([Guiné et al., *Journal of Culinary Science & Technology*, 2024](#)).
3. Potential distribution of two insects with gastronomic value in Mexico. ([Hernández-Atilano et al., *Tropical and Subtropical Agroecosystems*, 2025](#)).
4. Edible Insects and gastronomy. ([Jacob et al., *In: Edible Insects: Nutritional Benefits, Culinary Innovations and Sustainability*, 2025](#)).
5. Mineral profile of cricket powders, some edible insect species and their implication for gastronomy. ([Kosečková et al., *Journal of Food Composition and Analysis*, 2021](#)).
6. Ethical dining navigating cultural traditions and modern sustainability in global gastronomy. ([Kumar, *In: Global Sustainable Practices in Gastronomic Tourism*, 2025](#)).
7. Insects in contemporary Mexican gastronomy. ([Molina-Castillo et al., *International Journal of Gastronomy and Food Science*, 2025](#)).
8. Taxonomic, economic and gastronomic analysis of some edible insects of the Order Hemiptera from Mexico. ([Moreno et al., *Journal of Insects as Food and Feed*, 2022](#)).
9. Entomogastronomy, a step beyond just eating insects. ([Pérez-Lloréns, *In: Insects as Food and Food Ingredients*, 2024](#)).
10. The gastronomic art of edible insects: Cooking methods and food innovation. ([Zhang et al., *Sustainable Food Technology*, 2025](#)).



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



SUSINCHAIN Comes Full Circle

A couple of years of European collaboration have transformed how we grow, process, and accept insects as sustainable food and feed.

The project

After years of pioneering research and partnership, the SUSINCHAIN (Sustainable Insect Chain) project officially concluded in 2023, leaving a lasting legacy in the development and acceptance of insects as food and feed across Europe. Funded by the [EU Horizon 2020 programme](#) (2019–2023), SUSINCHAIN united 35 partners spanning research, industry, and policy under one shared mission: to accelerate the uptake of insect proteins and strengthen every link in the sustainable protein chain ([Veldkamp & van der Fels-Klerx, 2025](#)).

From optimizing rearing and processing to enhancing product safety and consumer trust, the consortium's efforts have shaped a new foundation for insect-based innovation. Pilot demonstrations proved that insect proteins can be produced efficiently and safely, while consumer trials across several European countries revealed how factors like familiarity, taste, and visibility influence willingness to adopt insect foods.

The project generated numerous open-access publications and deliverables that will continue to guide the field toward a circular, resilient protein system. Beyond its technical milestones, SUSINCHAIN fostered a vibrant community of people committed to reshaping Europe's food systems. Its work continues to inspire new projects and networks (many partners are part of ASIFF!), which now carry forward the project's collaborative spirit. More information and resources can be found on the project website.



“Insect production chain.” Figure from [Veldkamp et al. \(2022\)](#).

Key Highlights and Featured Publications

- 1. Ensuring chemical safety:** Detailed review of chemical contaminants, transfer mechanisms, and recommendations for insects reared for food and feed ([Meyer et al., *Journal of Insects as Food and Feed*, 2021](#)).
- 2. Digestibility of insect meals for aquafeeds:** Demonstrates that defatted insect meals from mealworm and BSF are highly digestible for rainbow trout and support feed substitution potential ([Gasco et al., *Journal of Insects as Food and Feed*, 2022](#)).
- 3. Safe upcycling of waste streams for BSF larvae:** Demonstrating that mild heat treatment ensures microbiological safety without impairing larval growth ([Van Looveren et al., *Waste Management*, 2023](#)).
- 4. Developing insect-based dinner products for meat substitution:** Establishing quality criteria and experimental products for family consumer interventions in Denmark and Portugal ([Maya et al., *Journal of Insects as Food and Feed*, 2025](#)).
- 5. Upscaling Europe's insect value chain:** Overview of the SUSINCHAIN project and its technical, regulatory, and consumer outcomes across 35 partners ([Veldkamp & van der Fels-Klerx, *Journal of Insects as Food and Feed*, 2025](#)).

Written by Cassandra Maya

Projects highlights

Composting and mycoremediation of low-value residual streams for safe insect rearing (COMYSECT) (2022-2025)

This project supports the Dutch Ministry of Agriculture's urgent push toward circular agriculture by developing safe, nutritious substrates for insect rearing using low-value organic residual streams. Techniques such as composting, fermentation, and mycoremediation will be applied to transform biomass into clean substrates. Building on mushroom cultivation knowledge, the project leverages fungi's ability to break down or absorb harmful substances. The aim is to reduce food and feed safety risks while enhancing insect growth, contributing to sustainable insect production. This effort aligns with the Ministry's broader goals to utilize residual streams and foster a robust, sustainable circular economy in the Netherlands.

Involved partners: Insect Engineers BV, Ynsect, Protix BV, CNC Grondstoffen BV, Waterschap Aa en Maas, Waterschap de Dommel, Stichting Toegepast Onderzoek Waterbeheer (STOWA), Energiehout BV, Top Sector Alliance for Knowledge and Innovation (TKI).

Contact: Erik de Lange, erik.delange@wur.nl



Insect products as health promoter in poultry and pig feed (2021-2025)

By 2050, food production must nearly double to feed a growing population of 9 billion, despite limited farmland, overfished oceans, and climate-related challenges. Insects offer a sustainable solution for animal feed, particularly in poultry, pigs, and fish farming, due to their high nutritional value and efficient production on organic waste. This project explores the bioactive benefits of insect-based feed components—like chitin, lauric acid, and antimicrobial peptides—that may improve animal health and reduce antibiotic use.

The goal is to develop innovative feed concepts using insect-derived proteins and oils to promote animal health and welfare, sustainability, and circular, climate-neutral agriculture.

Involved partners: Protix BV, ABZ Diervoeding, Cargill Animal Nutrition, Nutrition Sciences NV, Top Sector Alliance for Knowledge and Innovation (TKI).

Contact: Teun Veldkamp, teun.veldkamp@wur.nl

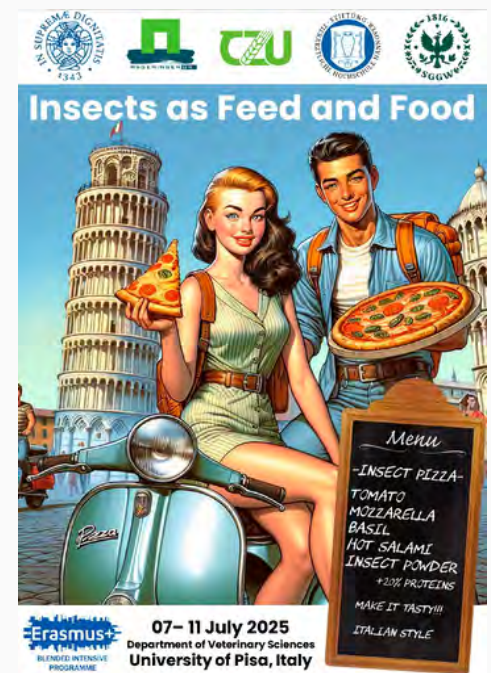


Summer school Insects as Feed and Food

From lectures to cooking with insects

On July 7–11, 2025, students and teachers from several European partner universities gathered in the sunny city of Pisa, Italy for the in-person part of the Erasmus+ BIP “Insects as Feed and Food.”

The event took place at the Department of Veterinary Sciences, University of Pisa (UNIPi), and was organized in collaboration with the University of Veterinary Medicine Hannover (TiHo, Germany), Wageningen University and Research (WUR, the Netherlands), Czech University of Life Sciences Prague (CZU, Czech Republic) and the Warsaw University of Life Sciences (SGGW, Poland).



What is Blended Intensive Program (BIP)?

BIP is a short, intensive study opportunity as a part of Erasmus+ programme for higher education students and staff that combines a short-term physical mobility abroad with a compulsory online component, fostering international collaboration and innovative teaching methods.

The BIP was coordinated by Dr. Simone Mancini, Associate Professor at UNIPi who led the organization of this event. The total number of students reached the maximum number of the mobilities with 21 participants, 5 from TiHo, WUR, SGGW and 6 from CZU. The BIP was also supported by six Staff mobility for Teaching (STA).

Edible insect research at the University of Pisa

“Since 2016, the Department of Veterinary Sciences has been working on the use of insects as food and feed”, says Dr. Simone Mancini. “Our main research focuses on improving rearing techniques and exploring the use of different substrates. The goal is to meet market demands and to test insects in real production settings, both as animal feed and as food for human consumption. In our laboratory, students and researchers take a multidisciplinary approach to the insect sector, following the entire process ‘from farm to fork.’”



Dr. Simone Mancini

Summer School Highlights: Exploring the World of Edible Insects

During the online session held on July 3, students received an introduction to the BIP course and to the insect sector, presented by Simone Mancini (UNIFI). The International Platform of Insects for Food and Feed (IPIFF) was introduced by its Secretary-General, Steven Barbosa, who described the insect market, outlining future prospects and the producers' perspective. Ermolaos Ververis from the European Food Safety Authority (EFSA) detailed the fundamental principles of novel food safety assessment, emphasizing the importance of the EU regulatory framework. The sustainability of the insect sector was also discussed, with Roberta Moruzzo (UNIFI) highlighting its potential contribution to achieving the United Nations Sustainable Development Goals (SDGs) and the European Green Deal. Finally, Malgorzata Nowacka (SGGW) concluded the session with a presentation on consumer acceptance of edible insects.

The first day of the summer school kicked off with lectures on insect rearing, featuring black soldier flies (Simone Mancini, UNIFI), mealworms (Emma Copelotti, UNIFI), crickets and grasshoppers (Martin Kulma, CZU), and a session on insect welfare (Asia Zanzot, UNIFI).



Participants of the summer school *Insects as Feed and Food*

On the second day, participants dived into the nutritional and processing aspects of edible insects. Martin Kulma (CZU) discussed the nutritional value of edible insects, followed by Lenka Kourimska (CZU) on non-protein nitrogen compounds and saccharides in insects. Maryia Mishyna (WUR) presented the general principles of insect processing, while Malgorzata Nowacka (SGGW) discussed how treatment and drying affect insect properties. The day concluded with Nils Grabowski (TiHo) sharing insights on novel food regulations.

The third day focused on applications and innovations in insect-based foods. Maryia Mishyna (WUR) spoke on the design of insect-based foods, and Nils Grabowski (TiHo) discussed sensorial patterns in insect products. Lenka Kourimska (CZU) covered the use of frass from insects, Gabriele Spatola (UNIFI) presented on NGS and food fraud in insect products, Tomer First (WUR) addressed dietary iron in edible insects, and Nils Grabowski (TiHo) rounded off the day with a session on pet food applications.

Working on group project

At the beginning of the BIP, students, one from each partner university, were divided into groups with the aim of developing a project to be presented on the final day of the course. Each group was free to choose its own topic, with the only requirement being that it related to the use of insects as food or feed. The main goal of the group work was to bring together students from different universities and to encourage the exchange of fresh, creative ideas without limiting their imagination.

Summer school Insects as Feed and Food

“Bigoli aglio, olio e peperoncino”

During the BIP, students visited ALMA – Scuola Internazionale di Cucina Italiana in Colorno (Parma), Italy, for an inspiring culinary experience. Guided by professional Italian chefs, the students learned the art of using insect ingredients in traditional Italian recipes of pasta and cookies.

Students and teachers together took part in the preparation of “Bigoli aglio, olio e peperoncino”, a traditional fresh egg pasta served with a sauce made of garlic, in our version “aglione di Valdichiana”, extra virgin olive oil, and fresh red chili pepper. The dish was finished with “colatura di alici di Cetara”, a typical Italian fish sauce made from anchovies. For this recipe, mealworm powder was incorporated into the pasta dough at a concentration of 10%.



Preparing “Bigoli aglio, olio e peperoncino”

“Baci di dama”

The second recipe was “Baci di dama”, two hazelnut biscuits joined together by a chocolate filling, symbolizing the “kiss” in their name. In this case, cricket powder was used at 15% in the cookie dough. After the cooking session, the whole class happily tasted the results!



Preparing “Baci di dama”



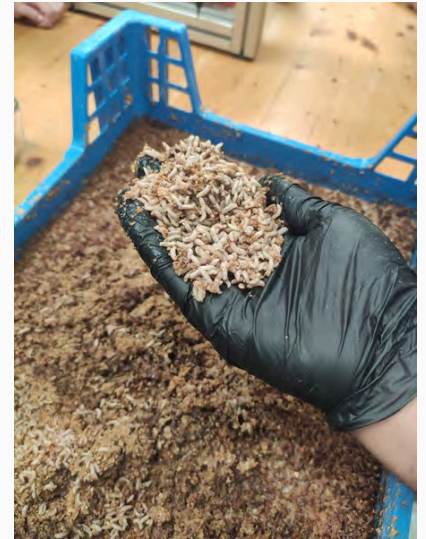
Summer school students and teachers in the kitchen of ALMA

On black soldier fly farm

Kinsect is a startup based in Reggio Emilia, founded in 2022. The company brings together a team of experienced researchers and entrepreneurs who have been rearing the black soldier fly since 2016. Kinsect focuses primarily on automated rearing systems designed to reduce reliance on manual labour and enable continuous, round-the-clock production. Its modular and scalable designs allow flexible adaptation to growing demand without compromising efficiency. Moreover, Kinsect integrates cutting-edge AI technologies to monitor environmental conditions, optimize processes, and enhance overall productivity.



During the visit at Kinsect, Italy



Black soldier fly larvae

Summer school: more than just an education

This year's summer school once again demonstrated that education extends far beyond the classroom. In addition to the lectures, group projects, and study visits, students and teachers had a chance to explore the city of Pisa, enjoy authentic Italian cuisine, and immerse themselves in the Tuscany's rich culture and traditions.

"Our goal has been to blend historical culture with new perspectives, an approach that reflects our belief that culture is never static, but a dynamic and continuously evolving system"

Dr. Simone Mancini said.

The next BIP summer school will be held in September 2026 at the University of Veterinary Medicine Hannover, under coordination of Juliane Hirnet and Nils Grabowski. It will continue the tradition of learning and collaboration in the field of edible insects.



Social event during the summer school

Written by Maryia Mishyna and Simone Mancini

ASIFF council news

First Annual meeting

On September 10, 2025, the first Annual ASIFF Meeting took place, a milestone event advancing research, collaboration, and innovation in the field of edible insects. 36 ASIFF members participated in shaping the society's future.

Key highlights of the meeting:

- Opening by Past President Prof. Emeritus Arnold van Huis
 - Election of Council Officers (4 Alternating, 4 Continuity, and Past President)
 - Establishment of the Nomination Committee and Tellers Committee
 - Adoption of the ASIFF by-laws
 - Presentation of the Annual Report (activities, finances, communication)
 - Introduction of sections/working groups by their leaders
 - Announcement of Insects to Feed the World (IFW) 2026 conference
 - Adoption of a 10% discount for IFW 2026 (Torino, Italy) for ASIFF members
- Following the general meeting, sections/working groups held dedicated meetings.

AFFIA conference

18-20 June, Kuala Lumpur

Nearly 100 people attended this conference, held at the Universiti Malaya. Highlights were the diversity and quality of presentations, workshops on Asian industry directions & needs, networking opportunities and the super field visits (Bioloop & UM labs). Full program is [here](#).



For more details contact David Allan at [djallan7 @ gmail.com](mailto:djallan7@gmail.com), or coordinator@affia.org



Vacancy

The Journal of Economic Entomology is looking for a Subject Editor on edible insects. JEE, published by the Entomological Society of America, has seen a significant increase in submissions of manuscripts on edible insects. Subject editors who typically handle two manuscripts at a time, identify reviewers and make editorial decisions. If you are interested, please contact Lisa Nevin, Editor in Chief, lisagneven@gmail.com and Goggy Davidowitz, Beneficial Insects Subject Editor, goggy@arizona.edu.



Ongoing / upcoming exhibitions of I N S C T S

- YEAST, 25 Sept – 9 Nov 2025 (Matino, IT)
- PHotoESPAÑA, Premio ENAIRE, 26 Jun 2025 – 28 Jan 2026
- Centro de Arte Naves de Gamazo (Santander, ESP)
- Encontros da Imagem, 18 Sep – 2 Nov 2025 (Braga, POR)
- PX3 Prix de la Photographie Paris, 9 Nov – TBC 2025 (FRA)

Course

Black Soldier Fly: Boosting a Sustainable Future

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.

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

Get the Bug podcast

New episodes by Umberto Diecinove

Get The Bug is a podcast by Umberto Diecinove exploring how insects can transform food systems and sustainability.

Two new episodes are available online with Hidayah Taufek, senior lecturer in animal nutrition and feed technology at the University of Malaya, and Cameron Richards, former AFFIA: Asian Food & Feed Insect Association president and Veolia Senior Manager.



[From Waste to Flavor: How Insects Can Improve Fish Farming](#)



[Insect Farming in Asia: Challenges, Growth, and Opportunities](#)

INSCTS is an ongoing project by Umberto Diecinove that explores the global rise of insect farming and its contribution to a transformation that embraces the inherent circularity of nature. Since 2019, he has mapped insect farming and research across key sites worldwide — from Wageningen University in the Netherlands to the CEIF Texas A&M University, and from rural communities in post-conflict Colombia to mega-urban centers in China.



Postcard from the Field

Learn more about our research on edible insects in Oaxaca from the links below:

[The Cultural Importance of Edible Insects in Oaxaca, Mexico](#)

[Chicatanas: The Seasonal Delicacy of Oaxaca](#)



Greetings from Oaxaca, Mexico!
Every summer, just after the first rains, communities across Oaxaca gather for the harvest of chicatanas (*Atta mexicana*), the winged leafcutter ants that take flight for only a day or two. This brief season becomes a celebration of culture, food, and community. Families rise at dawn to collect the ants, which are later toasted on a comal into a tasty snack and the key ingredient in salsa de chicatanas, a smoky, rich delicacy deeply rooted in Mixtec and Zapotec traditions. Our fieldwork documents how this seasonal practice connects ecology, culture, and food security. Chicatanas provide an important source of protein and income for rural families while showcasing how traditional knowledge supports sustainable and climate-resilient food systems.



FROM:
CHANGQI LIU AND TEAM
SAN DIEGO STATE UNIVERSITY,
USA
& COLLABORATORS IN OAXACA,
MEXICO

Tsukudani Crickets

Inspired by Japanese Washoku

Ingredients (2 Servings)

- 1 cup washed crickets (e.g., two-spotted field cricket)
- 2 cups of water
- ¼ cup sugar
- ¼ cup mirin rice wine
- 1 tablespoon soy sauce
- a pinch of salt

For a freshly prepared side-dish

1. Add all ingredients in a saucepan and bring to a boil.
2. Simmer over medium heat, while occasionally stirring, letting the liquid thicken to a syrup-like consistency.
3. Remove excess liquid using a strainer.

Optional steps to make a delicious dehydrated snack

1. Continue by spreading the cooked crickets on a baking tray lined with parchment paper.
2. Sprinkle with cooked sesame seeds
3. Oven dry at 60 °C for up to 24 hours.



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

Tip from the chef: Replace the mirin rice wine and soy sauce with ¼ cup of freshly grated ginger and 4 tbsp lemon juice, and sprinkle with coconut flakes. Be creative! Try pairing instant coffee, Coca Cola, and other flavors with toppings such as brown rice flour, oat flakes, cinnamon, etc.



Would you like to be featured in the next ASIFF newsletter?

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

Contact us by sending an email to info@asiff.org



Editors of ASIFF newsletter, Issue 3: Maryia Mishyna and Cassandra Maya