

IPIFF INFO SHEETS

FOOD PRODUCTS MADE WITH INGREDIENTS FROM INSECTS: A HEALTHY & SUSTAINABLE CHOICE!

FOOD MADE WITH INSECT INGREDIENTS IS A SMART CHOICE

We are thrilled to introduce you to a revolutionary trend in sustainable and nutritious food options - food made with ingredients from insects. As we strive to fight climate change and address the growing global food demand, we are delighted to bring you an exciting range of culinary delights that harness the incredible nutritional benefits of insects. Embrace a world of flavours with a diverse range of food products made with ingredients or enriched with nutrients from insects. From delectable cricket-based protein bars to savory mealworm-based snacks and even cricket powder-based pasta, these products combine great taste with exceptional nutritional value. Step outside your comfort zone and discover a whole new world of gastronomic adventures!

FIND OUT WHY AND HOW

THIS SERIES OF FOUR INFO SHEETS EXPLAINS WHY AND HOW EATING FOOD PRODUCTS MADE WITH INSECT INGREDIENTS CAN CONTRIBUTE TO A HEALTHIER DIET WITH A REDUCED ENVIRONMENTAL FOOTPRINT. THE INFO SHEETS ARE:

- I- **NUTRITIONAL VALUE: IMPROVE YOUR HEALTH**
- II- **VERSATILITY: TRADITIONAL FOOD MADE MORE NUTRITIOUS**
- III- **ENVIRONMENTAL SUSTAINABILITY: REDUCE YOUR ECO FOOTPRINT**
- IV- **CONSUMPTION: ALREADY THE CHOICE OF 2 BILLION WORLDWIDE & GROWING**



INFO SHEET

NUTRITIONAL VALUE: IMPROVE YOUR HEALTH

Food products made with ingredients from edible insects are garnering increasing attention for their exceptional nutritional value. While the idea of consuming insects may seem unconventional to some, these tiny creatures are nutritional powerhouses that offer a range of benefits for human health. It's worth noting that different insect species may vary in their nutrient profiles. However, overall, food products made with insect ingredients offer a wide array of nutrients that can contribute to a balanced and healthy diet. As the world seeks innovative solutions to global food challenges, food products made with ingredients from insects emerge as a natural nutrient-dense option. Embracing these products opens up new culinary possibilities that promote improved overall health and well-being.

Here, we give you a closer look at the nutritional value of food products made with ingredients from edible insects:



VERY HIGH PROTEIN CONTENT

Insects are an excellent source of high-quality protein. For example, crickets have a protein content ranging from 60% to 70% of their dry weight, which is comparable to traditional animal protein sources such as beef or chicken.



RICH OMEGA 6 AND 3

Many insect species are rich in beneficial fats. For instance, mealworms and crickets contain healthy polyunsaturated fatty acids, including omega-3 and omega-6 fatty acids. These fats play a crucial role in maintaining heart health, reducing inflammation, and supporting brain function.



RICH IN FIBER

Insects, particularly edible larvae and grubs, are often high in dietary fiber. Fiber aids digestion functions, promotes satiety, and supports a healthy gut microbiome. Including food made with ingredients from insects in your diet can contribute to meeting your daily fiber requirements.



PACKED WITH MICRONUTRIENTS

Insects are packed with essential vitamins and minerals. They are a good source of iron, which is crucial for oxygen transportation and preventing anemia. Food made with ingredients from insects also provides calcium for bone health, zinc for immune function and wound healing, and B vitamins (such as B12) for energy production and nervous system health.



COMPLETE AMINO ACID PROFILE

Insect protein offers a complete amino acid profile, including essential amino acids that the body cannot produce on its own. This is crucial for optimal muscle repair, synthesis, and overall body function.



EXCELLENT BIOAVAILABILITY

Edible Insect nutrients often exhibit excellent bioavailability, meaning the body can efficiently absorb and utilise them. This high bioavailability ensures that your body can effectively access and benefit from the essential amino acids, vitamins, and minerals found in insect protein sources. Compared to some plant-based proteins, which may contain anti-nutrients or have lower bioavailability, insect nutrients can be a more efficient option for meeting nutrient requirements as part of a varied and healthy diet.



LESS FAT AND IMPROVED CHOLESTEROL LEVELS

Studies show that consuming an insect protein-rich diet shows lipid-lowering effects and, thus, might be useful for hyperlipidaemic individuals. Therefore, consuming food made with ingredients from insects could help to reduce cholesterol levels in individuals who suffer from metabolic syndrome conditions such as obesity and diabetes.¹



IMPROVED ATHLETIC PERFORMANCE

By considering all the above, insects' dense nutritional content is a great addition to any athlete's diet:

- ✓ High-quality protein for the maintenance of muscle and tissue health
- ✓ Complete amino-acid profile to optimise muscle repair and synthesis
- ✓ Zinc that contributes to wound healing;
- ✓ B12 vitamin needed to produce energy;
- ✓ Fiber to promote satiety and gastrointestinal health;
- ✓ Excellent bioavailability, ensuring efficient nutrient uptake by the body

¹ 2018, Justus-Liebig-University Giessen, Giessen, Germany

INFO SHEET

VERSATILITY: TRADITIONAL FOOD MADE MORE NUTRITIOUS

Insect versatility offers a world of opportunities for a more nutritious and healthy diet. Edible insects are incredibly versatile and offer exciting possibilities for their integration into traditional food products, enhancing their nutritional value and providing a sustainable protein source. From snacks and sauces to burgers and beverages, insects provide a nutritious ingredient that adds value to our culinary experiences. By exploring these possibilities, we can create innovative and delicious food products that embrace the nutritional benefits of ingredients from insects while maintaining a connection with familiar flavours and dishes.

Here we list some of the many possibilities that edible insects' versatility offers:



PROTEIN-RICH BREAD, PASTA, PIZZA, PASTRY

Insects' high-quality protein can be incorporated into your traditional food products. For example, protein powders, such as cricket flour, can be used to bake bread, pasta, granola, and other baked goods such as pizza dough or pastry. Therefore, boosting significantly their protein content. This protein enrichment not only enhances the nutritional value of these foods but also provides an opportunity to diversify protein sources and meet dietary requirements



NUTRITIOUS SNACKS AND APPETIZERS

Insects are often incorporated into snacks and appetisers, offering a unique twist to traditional recipes. Crispy fried crickets, mealworms, or grasshoppers can be added to trail mixes, roasted as standalone snacks, or used as toppings for salads. By integrating insect ingredients into snacks, we introduce a new dimension of texture, flavour, and nutritional value to your favourite bites.



PROTEIN BARS & ENERGY BALLS

By using, for example, cricket flour, you also can bake at home protein-rich bars and energy balls. By combining insect protein with nuts, seeds, dried fruits, and natural sweeteners, you can create healthy and ready-to-go food, rich in protein, fiber, and essential nutrients.



BURGERS AND MEAT ALTERNATIVES

Insect protein can be used as an ingredient in burgers and meat alternatives, providing a sustainable and nutritious alternative to traditional meat products. By combining insect ingredients with plant-based ingredients, we can create patties that are rich in protein and have a lower environmental impact. Insect burgers offer a unique and flavourful twist to the classic burger experience.



SAUCES, SEASONINGS & CONDIMENTS

Edible insects can be transformed into flavourful sauces, seasonings, and condiments. For example, ground crickets or mealworms can be used to make protein-rich pesto or added to spice blends for a unique umami flavour. Sauces and condiments made with ingredients from insects can be used to enhance the taste and nutritional profile of various dishes, from pasta and stir-fries to marinades and dips.



BEVERAGES

Insects can be integrated into beverage production. Cricket protein powder or mealworm powder can be used as an ingredient in smoothies, shakes, and protein drinks, providing an extra boost of protein, vitamins, and minerals. Beverages enriched with insect nutrients offer a convenient and delicious way to incorporate insects into our daily routine and diversify our nutrient intake.



SPORTS SUPPLEMENTS

Insects' dense nutritional value can improve sports performance, muscle growth, and a faster recovery, making them a great ingredient for sports supplements. Insect protein is already used to produce protein bars and other sports enhancement supplements. Besides that, as described above, insect protein powders can be used by athletes and muscle builders to make their homemade shakes and other types of protein-rich drinks.

- ➔ FOR SUGGESTIONS OF RECIPES USING INSECT INGREDIENTS OR TO READ MORE ABOUT FOOD MADE WITH INSECT INGREDIENTS:
- ✓ [Ynsect: Entomophagy for beginners: insect recipes for the Western palate](#)
- ✓ [Jiminis: Recipes](#)
- ✓ [Essento: Eating insects? Absolutely! There are good reasons for it!](#)
- ✓ [Divaks: High-quality insect protein for premium food products](#)

INFO SHEET

ENVIRONMENTAL SUSTAINABILITY: REDUCE YOUR ECO FOOTPRINT

Eating food products made with ingredients from insects offers numerous benefits in terms of environmental sustainability. As the global population continues to grow, traditional livestock production faces challenges related to responsible use of natural resources like land use, water consumption, greenhouse gas emissions, and feed production. In this context, food products made with ingredients from insects or enriched with nutrients from insects can contribute to more sustainable food systems and present a promising solution.

Here we present some of their environmental advantages:



REDUCED LAND USE

Insects require significantly less land compared to traditional livestock farming. For example, crickets can be raised vertically in compact spaces, requiring a fraction of the land needed for cattle or poultry. By embracing food products made with ingredients from edible insects, we can mitigate deforestation, preserve natural habitats, and protect biodiversity.



LOWER WATER FOOTPRINT

Insect farming is incredibly efficient when it comes to water usage. While traditional livestock requires substantial amounts of water for drinking, irrigation, and feed production, insect farming generally demands minimal water resources. This reduction in water consumption can help alleviate water scarcity issues and promote a more sustainable water management.



LOWER GREENHOUSE GAS EMISSIONS

Insects have a much smaller ecological footprint compared to traditional livestock. They produce considerably fewer greenhouse gas emissions, such as methane and nitrous oxide, which are major contributors to climate change. By incorporating food products made with ingredients from insects into our diets, we can contribute to mitigating climate change and reducing our carbon footprint on the planet.



DECREASED FEED REQUIREMENTS

Insects are highly efficient converters of feed into usable protein. They require considerably less feed compared to traditional livestock, which often relies on large quantities of crops and grains. Insects can be raised also on organic waste materials, such as vegetable scraps or agricultural byproducts, enabling circular economies and reducing the demand for resource-intensive animal feed production and the associated environmental impact.



SUSTAINABLE REPRODUCTION

Insects reproduce rapidly and have short life cycles, enabling faster and more efficient production. This characteristic allows for a continuous and sustainable supply of food products made with ingredients from insects without depleting natural resources. Insects can be farmed using vertical farming techniques or in controlled environments, further minimising their ecological impact.



CIRCULAR ECONOMY

Insect farming aligns with the principles of a circular economy by utilising organic waste streams as feed sources. Insects can transform organic materials that would otherwise end up in landfills into valuable protein sources. This circular approach reduces waste, promotes resource efficiency, and enhances the sustainability of our food system.





INFO SHEET

WORLDWIDE CONSUMPTION: ALREADY THE CHOICE OF 2 BILLION & GROWING

Food made with ingredients from insects is already widely consumed, with its level of consumption varying across different regions of the world: while some areas embrace them as traditional food, others are now beginning to explore its potential. The prospects for the growing demand for food made with ingredients from insects in the Western Hemisphere are promising. Factors such as increasing interest in sustainable food sources, rising awareness of the environmental impact of traditional livestock farming, and the need for alternative protein sources are driving this trend. As consumers become more open to exploring novel food options, the market for food made with ingredients from insects or enriched with nutrients from insects is expected to expand. To support this growth, efforts are being made to address regulatory frameworks, promote education and clear and responsible consumer information, and invest in research and development. Collaborations between academia, industry, and governmental bodies are playing a vital role in advancing the food made with ingredients from insects' industry in the Western Hemisphere



ASIA

In many Asian countries, insect consumption has a long-standing cultural history. Food products made with ingredients from insects are commonly consumed in countries such as Thailand, Cambodia, Vietnam, and Laos. Insects like crickets, mealworms, and silkworm larvae ingredients are often incorporated into traditional dishes, street food, and snacks. The acceptance and demand for food made with ingredients from insects in Asia are deeply rooted in cultural practices and their established nutritional benefits.



AFRICA

In several African nations, insects have been an integral part of traditional diets for centuries. Over 2,000 different insect species are consumed across the continent, including caterpillars, termites, and grasshoppers. Insects provide a valuable source of protein, particularly in regions where access to traditional livestock is limited. Efforts are being made to scale up insect farming and develop food made with ingredients from insects as a means of improving food security and nutrition in Africa.



LATIN AMERICA

In certain countries, such as Mexico and Colombia, insect consumption has been a part of indigenous cultures for centuries. In Mexico, for example, insects have been consumed since pre-Hispanic times. Traditional foods made with ingredients from insects still have some cultural significance and are consumed in certain regions. In recent years, there has been an increase in awareness and interest in food made with ingredients from insects across Latin America. This can be attributed to various factors, including the recognition of their nutritional value, their potential as a more sustainable protein source compared to traditional livestock, and the promotion of insect farming as a viable industry.



NORTH AMERICA

In North America, the consumption of food made with ingredients from insects is gradually gaining interest. While it may still be considered unconventional by some, there is a growing awareness of the environmental and nutritional benefits offered by insects. Start-ups and entrepreneurs are actively exploring insect farming and the development of food made with ingredients from insects. Insect protein powders, cricket protein bars, and snacks are increasingly available in specialty stores and online platforms. The market is still in its early stages but has significant growth potential.



EUROPE

In Europe, the consumption of food made with ingredients from insects is still relatively niche but gaining momentum. The European Food Safety Authority (EFSA) approved the use of certain insect species for human consumption in 2015, providing a regulatory framework for food products made with ingredients from insects. Several European countries, including the Netherlands, Belgium, and France, have taken the lead in insect farming and the production of food made with ingredients from insects. Start-ups and established companies are introducing innovative food products made with ingredients or enriched with nutrients from insects in the European market, such as protein bars, snacks, and flour. 'Currently, there are 6 novel food authorizations for the commercialization of food products based on 4 insect species in the European Union.

To find out more about the commercialisation of food products made of insects in the EU:

- [INFO SHEET ON THE COMMERCIALISATION OF EDIBLE INSECTS IN THE EU](#)
- [INFO SHEET ON THE INSECT FOOD PRODUCTS APPLICABLE EU LEGISLATION](#)
- [THE IPIFF WEBSITE](#)
- [THE IPIFF LINKEDIN PAGE-POSTS RELATED TO FOOD PRODUCT](#)