

Insects Innovation in Gastronomy

COURSE SUPPORT



Module 1 Unit 3:

Benefits of Eating Insects

•
Disclaimer:

This project is co-funded with the support of the European Union.

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.



Course Support
Module 1 Unit 3: Benefits of Eating Insects

Table of Contents

Key Insights & Takeaways:

Benefits and Advantages of Consuming Insect-Based

Ingredients.....1

Final Thought.....3

Course Support

Module 1 Unit 3: Benefits of Eating Insects

Module 1: Introduction to Edible Insects in Gastronomy

Unit 3: Benefits of Eating Insects

Benefits and Advantages of Consuming Insect-Based Ingredients

In this section, we will introduce the general benefits and advantages of edible insect consumption. We will explore these aspects through different perspectives: **nutrition and health, sustainability, waste reduction, food safety, economic impact, and cultural significance.**

Nutrition and Health Benefits

According to the study *Edible Insect Consumption for Human and Planetary Health: A Systematic Review*, published in the *International Journal of Environmental Research and Public Health*, edible insects are an excellent source of **proteins, minerals, fiber, and antioxidants**, as well as **probiotics that support gut health.**

For example, **insect flour contains approximately 60% protein.** Additionally, insects have **low levels of saturated fats** and are **rich in polyunsaturated fats like Omega-3**, making them nutritionally comparable to **fish and nuts.**

The study also suggests that consuming edible insects can **improve gut health, reduce systemic inflammation, and significantly increase blood amino acid concentrations.**

Sustainability

Let's examine some key sustainability comparisons between insect farming and conventional livestock production.

Land Use Efficiency

The study estimates that producing **1 kg of edible insects requires only 17.68 m²** of space, compared to **201 m² for cattle farming.** Traditional livestock requires **horizontal pasture land**, while insect farming can be **vertically structured**, using stacked containers to optimize space.

Water Consumption

Water consumption is another major advantage of insect farming. While **raising insects requires only 23 m³ of water**, **cattle farming consumes a staggering 112 m³.** Given the growing global water scarcity crisis, insect farming presents a significantly **more water-efficient** alternative.

Feed Efficiency

To produce **1 kg of edible insects**, only **2 kg of feed** is required, whereas **cattle require approximately 8 kg of feed** per kilogram of body weight. This **high feed efficiency** makes insect farming a **resource-friendly** alternative to conventional livestock.

Course Support

Module 1 Unit 3: Benefits of Eating Insects

Waste Reduction and Management

Insect farming offers **significant advantages in waste reduction** compared to traditional livestock farming:

- **Insects can be fed agricultural byproducts and organic waste**, transforming them into **high-quality protein**.
- Their excretions, known as **frass**, can be used as **nutrient-rich fertilizer**, supporting **sustainable agricultural cycles**.
- In contrast, **conventional livestock produces significantly more methane and greenhouse gases**, as well as **waste that requires complex treatment processes**.

This **efficient production cycle** and **eco-friendly waste management** make insect farming an increasingly **attractive solution for sustainable food production**.

Economic Impact for Producers and Consumers

The **economic advantages** of insect farming are notable for both **producers and consumers**, particularly when compared to traditional livestock farming.

Lower Production Costs

- **Insects require fewer resources**, resulting in **significantly lower production costs**.
- They need **less feed, water, and space**, reducing infrastructure and maintenance expenses.
- Insect farms can be **built vertically**, minimizing real estate costs and optimizing **land usage**.

Potential for Lower Consumer Prices

Currently, insect-based products may be **slightly more expensive** due to their novelty and **the need for larger-scale production**. However, as **demand increases and supply chains improve**, prices are expected to **decrease**.

In contrast, **conventional meat prices** are susceptible to fluctuations due to **feed costs and climate change impacts**. This could make **insect-based protein a more stable and affordable option** in the long run.

Future Food Security

According to a **FAO (Food and Agriculture Organization) report**, **global protein demand is expected to double by 2050**. To meet this challenge, **edible insects may become essential in supplementing traditional protein sources**, ensuring **food security** for a growing population.

Course Support

Module 1 Unit 3: Benefits of Eating Insects

Food Safety

The **safety of consuming insects** is **scientifically validated** by the **European Food Safety Authority (EFSA)**. Before approval, EFSA evaluates:

- **Potential allergens**
- **Microbiological risks**
- **Processing safety standards**

These assessments ensure that **edible insects meet the same rigorous food safety standards as other animal-based foods**.

Moreover, **insects for human consumption are raised under strict conditions**, minimizing health risks. The **EU regulations require full traceability** in production, ensuring **high-quality and safe food products**.

Cultural Perspectives on Edible Insects

One fascinating example of how **edible insects are integrated into everyday life** comes from **Japan**, where **vending machines selling edible insects** are common in **subway stations and on city streets**. This demonstrates how insects have become a **widely accepted part of the local food culture**.

Conclusion

We hope this unit has given you a **better understanding of the world of entomophagy** and its **benefits for nutrition, sustainability, and the economy**. We invite you to continue exploring this topic in the next units, as we dive deeper into how **insect-based ingredients can contribute to a more sustainable food future**.