

# PROTECTION OF CONSUMER RIGHTS THROUGH REGULATION ON INSECTS AS FOOD - SWISS AND BELGIUM EXPERIENCE FOR VIETNAM

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## Abstract

*The potential risks associated with consuming insects make consumers hesitant about their viability as a food source. Therefore, it is imperative to research and develop a comprehensive legal framework for consumer protection regarding the use of insects as food. This article focuses on analyzing three key issues: (i) theoretical aspects related to insects as food; (ii) food management experiences under Swiss and Belgian laws; and (iii) current legislation on insects as food in Vietnam, along with some recommendations.*

**Keywords:** *Belgium, food safety, farmed insects, insects as food, protection of consumers' rights, Switzerland.*

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In recent years, the interest in insects as food has grown substantially.<sup>1</sup> Insects as food are consumed by human from all tropical continents and even North America to the American Southwest and Mexico, the Amazon basins in Ibero-America, Central and Southern Africa, Southeast Asia, and Native Australia.<sup>2</sup> Scientific research highlights the significant benefits of using insects as food, showing that edible insects are a rich source of nutrients and can help combat malnutrition,<sup>3</sup> such as iron deficiency among children below five years old and women of reproductive ages.<sup>4</sup> The use of insects as food also brings economic benefits such as creating livelihoods for households, small and medium-sized enterprises in insect breeding, and boosts economic potential in countries with traditions in insect consumption such as Thailand, Cambodia,

1 Zugravu, C. (2023), 'Knowledge: A factor for acceptance of insects as food', *Sustainability, Multidisciplinary Digital Publishing Institute*, Vol. 15, No. 6, p. 1.

2 Nghiep, H. T. H. (2017), *Research on forestry insects for food and propose solutions to conserve them in the Northwest, Vietnam*, Vietnam National University of Forestry, p. 5.

3 Yashung, P. et al. (2020), 'Benefits and risks of consuming edible insects', *Dera Natung Government College Research Journal*, Vol. 5, No. 1, p. 36.

4 Egonyu, J. P. et al. (2021), 'Advances in insects for food and feed', *International Journal of Tropical Insect Science*, Vol. 41, pp. 1903 – 1904.

Vietnam in the export of insect-based food products to foreign markets. In 2022, the top exporters of insects were China (3.23 million USD), Spain (1.1 million USD), Vietnam (727 thousand USD), Australia (600 thousand USD), and Indonesia (466 thousand USD).<sup>5</sup> In Thailand, the edible insect market has experienced significant growth in recent years, focusing on import of insect-based food products. Thailand is currently the world's 17<sup>th</sup> largest exporter of live insects. In the first five months of 2021, the export volume of live insects reached 575 tonnes, valued at 85,346 USD, up 29% compared with the same period of 2020.<sup>6</sup> The United States, Japan, and England are the primary countries to which these products are exported, with a value of over 200,000 USD in 2022.<sup>7</sup> With Regulation (EU) 2021/171 issued on 12 February 2021, the European Union (EU) has approved five countries, including Vietnam, Canada, Switzerland, South Korea, and Thailand, to export insects to the European Union (EU).

However, food safety concerns hinder the acceptance for insects as food.<sup>8</sup> From a nutritional perspective, edible insects can contain anti-nutrient components such as phytates and tannins, which can adversely affect human health.<sup>9</sup> Consuming insects at inappropriate developmental stages, applying incorrect culinary preparation, handling without protective equipment, or collecting insects from unsuitable areas can result in adverse reactions.<sup>10</sup> Additionally, consuming insects can lead to allergic reactions, which are frequently recorded in Asian and African countries where eating insects is a traditional practice.<sup>11</sup> In recent years, several cases of poisoning have been recorded in various localities nationwide in Vietnam due to the consumption of insects and larvae as food. A typical example is the poisoning incident caused by consuming fungus-infected cicada larvae in Ham Tan district, Binh Thuan province, Vietnam, in 2012, which resulted in 15 people being hospitalized.<sup>12</sup> In China, of the cases of anaphylactic shock caused by insects between 1980 and 2007, 27 were caused by locusts, 27 by grasshoppers, 5 by silkworm pupae, 1 by cicadas, 1 by bee pupae, 1 by bee larvae, and 1 by *clanis*

5 OEC, 'Insects'. Retrieved from: <https://oec.world/en/profile/hs/insects> [accessed 11 June 2024].

6 Arunmas, P., 'Export outlook bright for edible insects'. Retrieved from: <https://www.bangkokpost.com/business/general/2319518/export-outlook-bright-for-edible-insects> [accessed 11 June 2024].

7 Krongdang, S. et al. (2023), 'Edible insects in Thailand: An overview of status, properties, processing, and utilization in the food industry', *Foods*, Vol. 12, No. 11, p. 7.

8 Egonyu, J. P. et al. (2021), *supra* note 4, p. 1907.

9 Francis, F. and Luong, L. C. (2015–2016), *Comparative study of edible insect acceptance between Vietnam and Belgium and potentiality of cricket breeding in Southern Vietnam (Ho Chi Minh City)*, p. 10.

10 Mlcek, J. (2014), 'A comprehensive look at the possibilities of edible insects as food in Europe – A review', *Polish Journal of Food and Nutrition Sciences*, Vol. 64, No. 3, p. 152.

11 Marchi, L. D., Wangorsch, A., and Zoccatelli, G. (2021), 'Allergens from edible insects: Cross-reactivity and effects of processing', *Current Allergy and Asthma Reports*, Vol. 21, No. 35, p. 1.

12 Hung, L. Q. (2013), 'Cicada larvae are infected with a fungus that causes food poisoning'. Retrieved from: <https://vfa.gov.vn/tin-tuc/au-trung-ve-sau-nhiem-nam-gay-ngo-doc-thuc-pham.html> [accessed 25 June 2024].

*bilineata tsingtauca*.<sup>13</sup> In Thailand, on 24 July 2014, 28 teenagers had consumed fried snacks which included insects and suffered acute insecticide poisoning.<sup>14</sup> Therefore, a comprehensive legal framework is necessary, incorporating principles, standards, and regulations related to the guidance, supervision, assurance, and management of the production, storage, purchase, sale, and use of insects for human consumption.<sup>15</sup>

In this article, the authors analyze the legal frameworks governing insects as food in Belgium and Switzerland to propose solutions for Vietnam, considering the advanced regulatory environments of these countries. Belgium is an advanced country in the field of insects as food, legalizing the trade of 10 insect species in 2014.<sup>16</sup> The Agency for the Safety of the Food Chain (AFSCA) has made a safety assessment of using insects as food and issued a list of 10 insect species that are allowed to be traded on the Belgian market without having to start the licensing process for novel/new foods.<sup>17</sup> It can be said that the insect market in Belgium is more “open” than that of other EU countries. Meanwhile, Switzerland pioneered regulating farmed insects as food in Europe by permitting three species for consumption without prior authorization since 2017, given they meet certain conditions.<sup>18</sup> Thus, Vietnam can learn from Belgium’s advanced insect trade regulations and Switzerland’s pioneering approach to develop a comprehensive and efficient legal framework for insects as food.

## 1. Food Insect Legislation in Belgium and Switzerland

Currently, the majority of insects as food are mainly insects from nature,<sup>19</sup> making it even more difficult for insect risks to be controlled. In order to reduce and control the risks of using insects as food, farmed insects are considered a solution for the insect industry. The regulatory framework should address the entire production chain, starting from two different sources of primary production: wild harvest and farmed insects.<sup>20</sup>

13 Lin, X. et al. (2023), ‘A review on edible insects in China: Nutritional supply, environmental benefits, and potential applications’, *Current Research in Food Science*, Vol. 7, p. 4.

14 Chomchai, S. and Chomchai, C. (2018), ‘Histamine poisoning from insect consumption: an outbreak investigation from Thailand’, *Clinical Toxicology*, Vol. 56, No. 2, p. 126.

15 Amato, M. (2017), *Insects as food: A cross-cultural comparison of consumers’ intention and behaviour*, Università degli Studi di Napoli Federico II, p. 15.

16 Belluco, S., Halloran, A., and Ricci, A. (2017), ‘Novel protein sources and food legislation: the case of edible insects and EU law’, *Food Security*, Vol. 9, No. 14, p. 806.

17 Lotta, F. (2019), ‘Insects as food: The legal framework’, *Edible Insects in the Food Sector: Methods, Current Applications and Perspectives*, Springer Cham, p. 109.

18 Appendix DFI ordinance on new types of foodstuffs. See more at: Halloran, A. et al. (2015), ‘Regulating edible insects: the challenge of addressing food security, nature conservation, and the erosion of traditional food culture’, *Food Security*, 2015, Vol. 7, No. 3, p. 740.

19 Raheem, D. et al. (2018), ‘Traditional consumption of and rearing edible insects in Africa, Asia and Europe’, *Critical Reviews in Food Science and Nutrition*, Vol. 59, No. 14, p. 25.

20 Zuk-Golaszewska, K. et al. (2020), ‘Edible insect farming in the context of the EU regulations and marketing – An overview’, *Insects*, Vol. 13, No. 5, p. 5.

## 2.1. *Insects as novel food*

### 2.1.1. *Under Belgian and Swiss law*

Belgian and Swiss law both categorize edible insects as novel foods. Scientific advances have made it possible to produce foods from unconventional sources or through new techniques.<sup>21</sup> At the same time, globalization and integrated value chains have facilitated the movement of foods and food ingredients from regions where they have been in use for decades or longer, to other regions where they are unknown – and therefore perceived as “novel”.<sup>22</sup> The definition of a novel food may differ based on the specific regulatory purpose for which the food is being assessed. The term “novel food” under EU law arises from the fundamental approach to regulating the unknown consequences of new technologies and materials. This regulatory framework reflects society’s method of addressing the uncertainties associated with these innovations, a concept often referred to as “regulating the unknown”.<sup>23</sup>

According to the 2015 Novel Food Regulation (NFR) of the EU, the definition of novel food consists of two elements: (i) novel food is any food not used to a significant extent for the people of the EU prior to 15 May 1997; (ii) the scope of NFR includes only those novel foods that fall under one of the ten Novel Food Lists.<sup>24</sup> The novel food regulation aims at two objectives: first, to ensure the operation of the domestic market of the novel food; second, to protect consumers’ health against the risks that this novel food poses.<sup>25</sup> Most food legislation in the EU exists in the form of regulations, which are directly applicable to all organizations and individuals within the EU, as well as the competent authorities of the Member States.<sup>26</sup> This approach ensures the harmonization of laws among member states, thereby facilitating the flow of trade and avoiding unfair competition. Simultaneously, it also aims to ensure the safety of these novel foods.

As a Member State of the EU, Belgium implements these regulations, including the NFR, which has the highest legal force and is applied directly without the need for internalization at the national level.<sup>27</sup> According to the NFR Recital 8 of the Regulation (EU) 2015/2283: “[...] However, on the basis of scientific and technological developments that have occurred since 1997, it is appropriate to review, clarify and update the categories of food which constitute novel foods. Those categories should cover whole insects and their parts.” Article 3 of the 2015 NFR defines “novel food” as any food that was not used for

21 Vapnek, J., Purnhagen, K., and Hillel, B. (2021), ‘Regulatory and legislative framework for novel foods’, *Food Formulation: Novel Ingredients and Processing Techniques*, Wiley-Blackwell, p. 285.

22 Vapnek, J., Purnhagen, K., and Hillel, B. (2021), *supra* note 21, p. 285.

23 *Ibid.*, p. 287.

24 Scaffardi, L., Formici, G. (Ed.) (2022), ‘Novel foods: A necessary premise’, *Novel Foods and Edible Insects in the European Union: An Interdisciplinary Analysis*, Springer Cham, pp. 17 – 18.

25 Amato, M. (2017), *supra* note 15, p. 19.

26 Vapnek, J., Purnhagen, K., and Hillel, B. (2021), *supra* note 21, p. 289.

27 *Ibid.*, p. 286.

human consumption to a significant degree within the EU or the UK before 15 May 1997. This includes food isolated from or produced from animals or their parts, except for animals obtained through traditional breeding practices used for food production within the EU or the UK before 15 May 1997, and food from those animals that have a history of safe use within the EU or the UK.<sup>28</sup>

Similarly, in Switzerland, Article 15(1) of the Ordinance on Foodstuffs and Utility of 16 December 2016 (*Ordonnance sur les denrées alimentaires et les objets usuels du 16 décembre 2016*) provides that insects are novel food.<sup>29</sup> To shield Swiss consumers from the dangers that novel food may bring, the country enacted new food legislation, similar to the EU. At the same time, in the context of insects being identified as novel food under NFR 2015, RS 817.022.2 was issued in 2017 to determine the legal status of insects and food products derived from insects in Switzerland. This legislation has helped promote the trade of insects from Switzerland into the EU market. The fact that Switzerland is one of the five non-EU nations permitted to export insects to the EU market serves as evidence of this initiative's success. With the amended novel food law (RS 817.022.2 – came into force on 1 May 2017), it aims to provide at a higher level of protection for consumers' health, protect consumers from deception and minimise barriers to trade flows – especially with the EU.<sup>30</sup> By establishing stricter safety and labeling standards for novel foods, including insects, the law ensures that consumers are well-informed and protected. Additionally, harmonizing these regulations with EU standards facilitates smoother trade flows between Switzerland and EU countries, promoting economic cooperation and reducing regulatory discrepancies.

To some extent, the classification of insects as novel foods in Belgian and Swiss law appears to be a circular process. The determination of whether insects qualify as new food depends on factors such as geographical location, historical context, and socio-cultural traditions. In terms of natural conditions, Vietnam, with its tropical monsoon climate, provides favorable circumstances for insect growth and development. The country's rich diversity of edible insects attests to this fact. However, when it comes to socio-cultural traditions, Belgium and Switzerland have not historically embraced insects as food sources. In these countries, insects have not been perceived as contaminating food, rendering it inedible.<sup>31</sup> These countries classify whole insects and their parts as new food items, resulting in stringent requirements related to market access for insect-based foods. Specifically, food insects must obtain licenses

28 Regulation (EU) 2015/2283.

29 Montanari, F., Moura, A. P. D., and Cunha, L. M. (2021), 'Insects as food and feed: Analysis of regulatory experiences in selected Non-EU Countries', *Production and Commercialization of Insects as Food and Feed*, Springer, p. 35.

30 CMS Law-Now, 'Revision of novel foods regime in Switzerland'. Retrieved from: <https://cms-lawnow.com/en/ealerts/2017/05/revision-of-novel-food-regime-in-switzerland> [accessed 24 February 2024].

31 Amato, M. (2017), *supra* note 15, p. 16.

before being introduced to the market. In Belgium and Switzerland, only insects that have undergone safety assessments and received proper licensing are permitted for sale. Additionally, commercially traded insects used for food originate exclusively from livestock sources.

### 2.1.2. *Experience for Vietnam*

Vietnam currently lacks a “novel food” regulation, with no specific law governing the production, processing, and trading of insects as food. Chapter III of the 2010 Law on Food Safety (2010 Law on Food Safety) on conditions for ensuring food safety only stipulates conditions for ensuring safety for fresh food, processed food, food fortified with micronutrients, functional food, and genetically modified food without regulation of food from insects. However, Decree No. 15/2018/NĐ-CP recognizes the legal status of insects as food, while other agricultural and food products are managed by the Ministry of Agriculture and Rural Development (MARD). Therefore, Vietnamese law implicitly recognizes insects as part of the human diet and does not require separate regulations for them. Instead, producers of insects as food only need to comply with the standards applied to other common livestock species. Thus, regulating insects as novel food is impractical due to Vietnam’s historical, socio-cultural, and geographical context. Instead, developing safety standards for insects as food is more practical and crucial to protect consumers’ health.

## 2.2. *Regulation of insects used for food*

### 2.2.1. *Under Belgian and Swiss laws*

In Belgium, with the introduction of the 2015 NFR, insects were clearly regulated as novel food and required to be licensed before being placed on the market in the EU, unless there was evidence of a significant history of use in the EU before 15 May 1997. The Belgian Federal Public Service on 1 January 2018 published information on the sale and purchase of insects or insect products for human consumption on the Belgian market after 1 January 2018. From this date until the issuance of the license, only three insect species that Belgium has applied for a license before this date are allowed to be put on the market, including: the house cricket (*acheta domesticus*), the migratory locust (*locusta migratoria*), and the yellow mealworm (*tenebrio molitor*).<sup>32</sup> It is forbidden to introduce insect species and other insect products into the market for human consumption. Currently, only the following insects and insect products are allowed to enter the Belgian market:<sup>33</sup>

(1) Those which have been the subject of an authorisation at the European level under the 2015 NFR; and

32 Schiel, L. et al. (2020), ‘Legal framework for the marketing of food insects in the European Union’, *Ernährungs Umschau*, Vol. 67, No. 4, p. 82.

33 Health Belgium (2022), ‘Application of “novel food” regulation regarding insects for human consumption in Belgium’. Retrieved from: [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/2022\\_04\\_21\\_qna\\_novel\\_foods\\_insects\\_draft\\_en.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/2022_04_21_qna_novel_foods_insects_draft_en.pdf) [accessed 23 February 2024].

(2) Those benefiting from the transitional period provided for in Article 35 (2) of NFR 2015.

In Switzerland, according to RS 817.022.2, the following insects are used for food: yellow mealworm (*tenebrio molitor*) in the larval stage, house crickets (*acheta domesticus*) in the adult stage, and migratory locust (*locusta migratoria*) in the adult stage. It can be seen that there are similarities between Belgian and Swiss laws in regulating insects used as food, specifically: yellow mealworms, house crickets, and migratory locusts are insect species traded on the market in Belgium and Switzerland. These are three insect species that have been assessed as safe for human consumption and are licensed for sale on the market. This comes from determining the legal status of insects and insect-based food products – which are novel food and are considered unsafe for consumers without regulation.

A special point is that according to the RS 817.022.2, the aforementioned three insect species may be traded on the Swiss market without novel Food License as long as they adhere to certain specific requirements regarding the origin of insects used as food, processing requirements, and food product labeling. In principle, the same rules apply in Switzerland as in the EU, if they do not contradict Swiss law. These insects themselves have to go through a complex assessment process in the EU to be licensed, and having to go through a similar assessment process can cause huge cost losses for insect trader.

#### 2.2.2. Experience for Vietnam

Generally, in Vietnam, insects are considered common foods, generally safe to consume, and are regulated like other food items, only needing to comply with general food law provisions.<sup>34</sup> Studying Belgian and Swiss laws on insects as food reveals that their strict requirements, influenced by cautious food cultures, acting as trade barriers and limiting market opportunities for Vietnamese producers until their food safety assessments align with those of importing nations. To promote international trade, the MARD needs to issue a list of approved insect species, ensuring only those assessed as safe for human consumption are allowed on the market. Additionally, a clear list of approved insect species would boost consumer confidence, assuring them that these products have been vetted and deemed safe by regulatory authorities.

### 2.3. Food insects are insects from livestock farming

#### 2.3.1. Under Belgian and Swiss law

The consideration of food insects as livestock is a “core” issue in addressing the risks associated with insects as food. Currently, there are few official legal regulations governing the harvesting of insects for food.<sup>35</sup> In most countries,

34 Loi, T. D. and Thanh, L. B. (2017), ‘The diversity of edible insects in some Western Districts of Nghe An province’, *Vietnam Journal of Science and Technology*, Vol. 4, p. 120.

35 Halloran, A. et al. (Ed.) (2018), ‘The effects of regulation, legislation and policy on consumption of edible insects in the global south’, *Edible Insects in Sustainable Food Systems*, Springer Cham, p. 448.

hunting insects from the wild is the most common way of harvesting insects.<sup>36</sup> About 92% of insects as food are harvested from the wild and only a small fraction of insects are raised.<sup>37</sup> This raises a major concern for consumers, first of all, that the quality and safety of insects harvested from the wild cannot be controlled.

One major food safety concern for wild-harvested insects is biological risk, primarily from soil contamination, which can contain animal feces and pathogens. Additionally, insects consuming contaminated food can increase pathogenic microorganisms in their digestive systems.<sup>38</sup> Among the chemical contaminants found in insects from nature, pesticides are one of the major issues to be concerned about.<sup>39</sup> Moreover, excessive harvesting of wild insects can lead to species extinction and seasonal or geographical unavailability. For these reasons, “farmed insects” are considered crucial for the insect industry, as breeding can control and reduce risks in insects for human consumption.

Belgian and Swiss law both stipulate that insects as food are insects from livestock farming and not insects from nature. Specifically, in Belgium, according to the Circular concerning the breeding and marketing of insects and insect-based food for human consumption (Circular 2018), insects as food for human consumption imply insects from farmed animals, and more specifically, food-producing farmed animals. In Switzerland, according to RS 817.022.2, the requirement for the three aforementioned insects is that insects must be harvested from livestock farming. They must be bred in and must be placed under supervision for at least four of their life cycles. Therefore, the requirement for insects as food in Belgium and Switzerland is that insects must not be harvested from the wild, but must be harvested from human breeding. This can explain why, in Belgium and Switzerland, laws on insects as food were introduced to ensure food safety for consumers, the risks from insects from nature are more difficult to control than insects from livestock farming. Therefore, the requirements placed on insects as food come from animal husbandry.

### 2.3.2. Experience for Vietnam

In Vietnam, most food insects are sourced from nature. Collection methods vary by insect species. In western Nghe An province, locals use homemade racquets to catch insects and shake branches to collect cloth bugs.<sup>40</sup> This practice typically occurs in the early morning or during light drizzles. After collecting the bugs, they are placed in a basket or bucket of water to release yellow fluid.<sup>41</sup> Crickets, on the other hand, are caught using hoes or

36 Raheem, D. et al. (2018), *supra* note 19, p. 25.

37 Baiano, A. (2020), ‘Edible insects: An overview on nutritional characteristics, safety, farming, production, technologies, regulatory framework, and socio-economic and ethical implications’, *Trends in Food Science & Technology*, Vol. 100, p. 40.

38 Murefu, T. R. et al. (2019), ‘Safety of wild harvested and reared edible insects: A review’, *Food Control*, Vol. 101, p. 219.

39 Murefu, T. R. et al. (2019), *supra* note 38, p. 219.

40 Loi, T. D. and Thanh, L. B. (2017), *supra* note 34, p. 120.

41 *Ibid.*, p. 118.



spades to dig rows.<sup>42</sup> In Son La province, food insects are harvested from the wild and primarily sold in their fresh, unprocessed form.<sup>43</sup>

Thus, it can be seen that while Belgian and Swiss regulations mandate that food insects must come from livestock farming due to their classification as new and potentially unsafe foods, Vietnam's long history of using diverse insect species as food makes it challenging to impose specific requirements.<sup>44</sup> Additionally, farming activities are needed to balance the cultural significance of insect consumption with environmental and agricultural concerns in Vietnam. For example, while coconut worms are a popular delicacy in Vietnam, they threaten coconut trees, particularly those aged 2 to 5 years, by damaging growth peaks, causing young leaves to wither, and ultimately killing the trees.<sup>45</sup> To protect commercial coconut gardens, the Ben Tre Province Department of Crop Production and Plant Protection has strictly prohibited the breeding, spreading, and trading of coconut worms.<sup>46</sup> If farming practices are not carefully managed, the proliferation of these worms could exacerbate their impact on coconut tree populations, leading to broader ecological consequences and threatening agricultural sustainability.

In case farming requirements are imposed for other environmentally safe insects, it is important to ensure these regulations do not become disproportionately financial burden. In Belgium, Circular 2018 mandates that insect breeders register with the FASFC and follow SciCom 14-2014 and SHC No. 9160 guidelines for safety and hygiene. Swiss legislation similarly requires registration, licensing, hygiene, and pathogen elimination for insect food producers, as per RS 817.022. However, these detailed regulations, particularly the need for frequent cleaning and substrate replacement, may disproportionately burden smaller-scale operations. For Vietnam, while emphasizing the importance of cleanliness, disinfection, and pathogen reduction through heat treatment, the practical implementation and enforcement of these measures across different scales of production in Vietnam should be specify to avoid leading to varying levels of compliance and potential loopholes in food safety standards. Overall, even the laws provide a foundation for regulating insect-based food products, there remains a need for continuous evaluation and adaptation to foster innovation while maintaining rigorous food safety standards across the industry.

42 *Ibid.*, p. 118.

43 Chuyen, N. V. and Nghiep, H. T. H. (2018), 'The list of edible insects have been exploited and traded in Son La province', *Vietnam Journal of Science and Technology*, No. 4, p. 53.

44 Nghiep, H. T. H. (2017), *supra* note 2, p. 30.

45 Dong, N. T. (2019), 'Measures to prevent coconut worms'. Retrieved from: <https://snnptnt.travinh.gov.vn/phong-chong-dich-benh/bien-phap-phong-tru-duong-hai-cay-dua-593091> [accessed 12 June 2024].

46 Nhat Truong (2023), 'Việc nhân nuôi, phát tán, kinh doanh đường dừa sẽ bị xử phạt đến 12 triệu đồng' [Breeding, spreading and trading coconut worms will be fined up to 12 million VND]. Retrieved from: <https://vov.vn/kinh-te/thi-truong/viec-nhan-nuoi-phat-tan-kinh-doanh-duong-dua-se-bi-xu-phat-den-12-trieu-dong-post997182.vov> [accessed 12 June 2024].

## Conclusion

In Vietnam, with the slogan “transparent information – safe consumption”,<sup>47</sup> according to which, safe consumption is increasingly promoted to protect the interests of consumers in the use of food, especially in the context of insects as food, this issue is more “prominent” than ever. By studying the insect food laws in Belgium and Switzerland, Vietnam can adopt clear standards to meet international safety requirements, facilitating smoother trade and expanding its presence in the global market. ●

## References

- [1] Amato, M. (2017), *Insects as food: A cross-cultural comparison of consumers' intention and behaviour*, Università degli Studi di Napoli Federico II
- [2] Arunmas, P., ‘Export outlook bright for edible insects’. Retrieved from: <https://www.bangkokpost.com/business/general/2319518/export-outlook-bright-for-edible-insects> [accessed 11 June 2024]
- [3] Baiano, A. (2020), ‘Edible insects: An overview on nutritional characteristics, safety, farming, production, technologies, regulatory framework, and socio-economic and ethical implications’, *Trends in Food Science and Technology*, Vol. 100
- [4] Belluco, S., Halloran, A., and Ricci, A. (2017), ‘The effects of regulation, legislation and policy on consumption of edible insects in the global south’, *Food Security*, Vol. 9, No. 4
- [5] Chomchai, S. and Chomchai, C. (2018), ‘Histamine poisoning from insect consumption: an outbreak investigation from Thailand’, *Clinical Toxicology*, Vol. 56, No. 2
- [6] Chuyen, N. V. and Nghiep, H. T. H. (2018), ‘The list of edible insects have been exploited and traded in Son La province’, *Vietnam Journal of Science and Technology*, No. 4
- [7] CMS Law-Now, ‘Revision of novel foods regime in Switzerland’. Retrieved from: <https://cms-lawnow.com/en/ealerts/2017/05/revision-of-novel-food-regime-in-switzerland> [accessed 24 February 2024]
- [8] Dong, N. T. (2019), ‘Measures to prevent coconut worms’. Retrieved from: <https://snnptnt.travinh.gov.vn/phong-chong-dich-benh/bien-phap-phong-tru-duong-hai-cay-dua-593091> [accessed 12 June 2024]
- [9] Egonyu, J. P. et al. (2021), ‘Advances in insects for food and feed’, *International Journal of Tropical Insect Science*, Vol. 41
- [10] Francis, F. and Luong, L. C. (2015–2016), *Comparative study of edible insect acceptance between Vietnam and Belgium and potentiality of cricket breeding in Southern Vietnam (Ho Chi Minh City)*
- [11] Halloran, A. et al. (Ed.) (2018), ‘The effects of regulation, legislation and policy on consumption of edible insects in the global south’, *Edible Insects in Sustainable Food Systems*, Springer Cham
- [12] Halloran, A. et al. (2015), ‘Regulating edible insects: the challenge of addressing food security, nature conservation, and the erosion of traditional food culture’, *Food Security*, 2015, Vol. 7, No. 3
- [13] Health Belgium (2022), ‘Application of “novel food” regulation regarding insects for human consumption in Belgium’. Retrieved from: [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/2022\\_04\\_21\\_qna\\_novel\\_foods\\_insects\\_draft\\_en.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/2022_04_21_qna_novel_foods_insects_draft_en.pdf) [accessed 23 February 2024]
- [14] Hung, L. Q. (2013), ‘Cicada larvae are infected with a fungus that causes food poisoning’. Retrieved from: <https://vfa.gov.vn/tin-tuc/au-trung-ve-sau-nhiem-nam-gay-ngo-doc-thuc-pham.html> [accessed 25 June 2024]

47 Vietnam Consumer Rights Day 2023 theme. Retrieved from: <https://baochinhphu.vn/thong-tin-minh-bach-tieu-dung-an-toan-102240315153823626.htm> [accessed 18 April 2024].

- [15] Krongdang, S. et al. (2023), 'Edible insects in Thailand: An overview of status, properties, processing, and utilization in the food industry', *Foods*, Vol. 12, No. 11
- [16] Lin, X. et al. (2023), 'A review on edible insects in China: Nutritional supply, environmental benefits, and potential applications', *Current Research in Food Science*, Vol. 7
- [17] Loi, T. D. and Thanh, L. B. (2017), 'The diversity of edible insects in some Western Districts of Nghe An province', *Vietnam Journal of Science and Technology*, No. 4
- [18] Lotta, F. (2019), 'Insects as food: The legal framework', *Edible Insects in the Food Sector: Methods, Current Applications and Perspectives*, Springer Cham
- [19] Murefu, T. R. et al. (2019), 'Safety of wild harvested and reared edible insects: A review', *Food Control*, Vol. 101
- [20] Montanari, F., Moura, A. P. D., and Cunha, L. M. (2021), 'Insects as food and feed: Analysis of regulatory experiences in selected Non-EU Countries', *Production and Commercialization of Insects as Food and Feed*, Springer Cham
- [21] Marchi, L. D., Wangorsch, A., and Zoccatelli, G. (2021), 'Allergens from edible insects: Cross-reactivity and effects of processing', *Current Allergy and Asthma Reports*, Vol. 21, No. 35
- [22] Mlcek, J. (2014), 'A comprehensive look at the possibilities of edible insects as food in europe – A review', *Polish Journal of Food and Nutrition Sciences*, Vol. 64, No. 3
- [23] Nhat Truong (2023), 'Việc nhân nuôi, phát tán, kinh doanh đuông dừa sẽ bị xử phạt đến 12 triệu đồng' [Breeding, spreading and trading coconut worms will be fined up to 12 million VND]. Retrieved from: <https://vov.vn/kinh-te/thi-truong/viec-nhan-nuoi-phat-tan-kinh-doanh-duong-dua-se-bi-xu-phat-den-12-trieu-dong-post997182.vov> [accessed 12 June 2024]
- [24] Nghiep, H. T. H. (2017), 'Research on forestry insects for food and propose solutions to conserve them in the Northwest, Vietnam', *Vietnam National University of Forestry*
- [25] Raheem, D. et al. (2018), 'Traditional consumption of and rearing edible insects in Africa, Asia and Europe', *Critical Reviews in Food Science and Nutrition*, Vol. 59, No. 14
- [26] Scaffardi, L., Formici, G. (Ed.) (2022), 'Novel foods: A necessary premise', *Novel Foods and Edible Insects in the European Union: An Interdisciplinary Analysis*, Springer Cham
- [27] Schiel, L. et al. (2020), 'Legal framework for the marketing of food insects in the European Union', *Ernährungs Umschau*, Vol. 67, No. 4
- [28] Vapnek, J., Purnhagen, K., and Hillel, B. (2021), 'Regulatory and legislative framework for novel foods', *Food Formulation: Novel Ingredients and Processing Techniques*, Wiley-Blackwell
- [29] Yashung, P. et al. (2020), 'Benefits and risks of consuming edible insects', *Dera Natung Government College Research Journal*, Vol. 5, No. 1
- [30] Zugravu, C. (2023), 'Knowledge: A factor for acceptance of insects as food', *Sustainability*, Multidisciplinary Digital Publishing Institute, Vol. 15, No. 6
- [31] Zuk-Gołaszewska, K. et al. (2020), 'Edible insect farming in the context of the EU regulations and marketing – An overview', *Insects*, Vol. 13, No. 5

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### Author Contribution

All authors contributed to the study conception and design. All authors read and approved the final manuscript.

### Declarations

**Conflict of Interest:** The authors declare no competing interests.

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