

Barbara BIESIADA-DRZAZGA , Dorota BANASZEWSKA ,
Katarzyna ANDRASZEK , Urszula ZAREMBA , Sabina KAIM 

OPINIONS OF STUDENTS OF SELECTED AREAS OF STUDY ON FOOD SECURITY AND FOOD SAFETY

Institute of Bioengineering and Animal Breeding, Siedlce University of Natural Sciences and Humanities, Siedlce, Poland

Abstract. In every country and on every continent, food security is one of the most important and even fundamental human needs, and thus feeding people should be an overriding goal at the international, national, and even household level. Food security involves meeting three conditions – physical access to food, economic access to food, and production of healthy food ensuring a nutritionally optimal diet. The aim of the study was to assess basic knowledge of food security and safety among students of agriculture and medicine at the global and household level. The survey found a satisfactory level of knowledge on the subject of the research. Students indicate differences in the concepts of food security and safety as well as variation in economic access to food and the need to eliminate it. They indicate the causes of hunger and malnutrition, and particularly the need to ensure production of safe food. Most respondents regarded food security in their households as satisfactory and stated that an increase in income does not necessarily lead to an increase in expenditures on food. Irrespective of their area of study, the survey participants correctly identified the main causes of hunger and malnutrition in the world, as well as the regions and countries in which these phenomena occur. The main causes of hunger and malnutrition in the world were considered to be the increase in the population, authoritarian systems of government and associated armed conflicts, and unfair distribution of food.

Key words: food security, food, economic and physical access to food.

INTRODUCTION

The triad of a country's economic security consists of natural resource security, financial security, and food security (Księżopolski 2011). Food security is one of the most important and even fundamental human needs in every country and on every continent (Burkowska et al. 2001; Michalczyk 2012; Dobre et al. 2020). Therefore feeding people should be an overriding goal in international politics on a global scale and should be considered at the international, national, and even household level (Pawlak 2011; Michalczyk 2012; Kozłowska-Burdziak 2019; Wardhani and Haryanto 2020). The concept of food security was first formulated in the

Corresponding author: Barbara Biesiada-Drzazga, Institute of Bioengineering and Animal Breeding, Siedlce University of Natural Sciences and Humanities, Bolesława Prusa 14, 08-110 Siedlce, Poland, e-mail: barbara.biesiada-drzazga@uph.edu.pl.

1970s at the World Food Conference (FAO 2003), and was gradually modified in subsequent years (Mikuła 2012; Michalczyk 2019). According to FAO, food security is present when all people at all times have physical, social and economic access to an adequate amount of safe and nourishing food which satisfies their nutritional needs and food preferences, enabling an active and healthy lifestyle (Michalczyk 2012; Marks-Bielska et al. 2020). The document 'National Security Strategy of the Republic of Poland' (2020), approved in 2014, in point 1.2. 'National interests and strategic goals', states that strategic security goals include ensuring food security. This is an indication of the major role of food security in the country. It arises from the fact that the right to freedom from hunger is one of the fundamental human rights. According to Gulbicka (2009), the total amount of food produced in the world should be sufficient to properly feed every inhabitant of the globe. However, there is considerable variation in this regard, i.e. simultaneous food waste and food shortages. The main causes of hunger and poverty in many parts of the world are geographic location, authoritarian systems of government, and armed conflicts. It is currently particularly evident how armed conflicts (the war in Ukraine) or the health situation (COVID 19 pandemic) can cause disruptions in food distribution and disruption. Global food security will also be negatively affected by climate change, loss of biodiversity of agricultural varieties, new plant and animal diseases, rising energy and food prices, food losses and waste, competition with biofuel producers for arable land, industry, urbanization, and speculation in the food market. According to Górecki and Halicka (2013), who analysed the food situation around the world, the main cause of hunger and malnutrition is not the lack of suitable environmental conditions or agricultural advancement in many countries, especially in Africa, or the increase in the global population, but selfishness, hatred, xenophobia, and the efforts of some people to dominate over others. This has led to many years of tribal warfare, corruption, and plundering by narrow segments of the population in many countries. The authors base these conclusions on data indicating that among the ten countries with the highest proportions of malnourished and hungry people, nine are African countries. The results reported in 'The State of Food Security and Nutrition in the World' indicate that in recent years about 700 million people have suffered or are suffering from hunger, most of whom are inhabitants of Africa and Asia.

The basic tool used to determine global food security is the Global Food Security Index, developed in 2012 (Kraciuk 2015), which identifies elements affecting food security in a given country. Food security can be said to rely on the fulfilment of three conditions – physical access to food, economic access to food, and the production of healthy food (Małysz 2009). Therefore one element of food security is food safety. According to Leśkiewicz (2012), food safety, as an essential feature of every food product, consists of a minimum of requirements which the consumer can expect the producer to meet. According to the author, food security is essential for human life, but ensuring food safety should be treated as equally important. The opposite of food security is hunger, and thus the subject of the research is of both scientific and utilitarian importance.

The aim of the study was to assess basic knowledge of food security and food safety on a global and household scale among students of agriculture and medicine in Poland.

MATERIAL AND METHODS

The survey was conducted in April and May of 2022. A total of 245 female students from the last and penultimate semesters of their studies participated in the study. The students answered questions about food security, its scope and aspects, food safety, causes of hunger and poverty, and applicable legislation (14 questions). The study was carried out using a specially prepared questionnaire:

1. Is the concept of food security equivalent to the concept of food safety?
 - Yes
 - No
 - I do not know
2. What body in Poland is responsible for ensuring food security for citizens?
.....
3. Define the concept of food security
.....
4. Should food security solutions be:
 - In international scope
 - In national scope
 - Within the reach of households
 - All above

➤ Justify the answer you have chosen
.....
5. Is Poland a self-sufficient country in terms of producing and securing food?
 - Yes
 - No
 - I do not know

➤ Justify the answer you have chosen
.....
6. The measure of food security is:
 - Physical availability
 - Economic availability
 - Health quality
 - All above

➤ Justify the answer you have chosen
.....
7. List the causes of hunger in many parts of the world
.....
8. Does the topic of food safety or food security is discussed in your household:
 - Yes
 - No
 - I do not know
9. What the abbreviations mean:
 - WHO.....
 - FAO.....
10. List what actions the government can take to ensure food security for citizens
.....
11. List countries (continents) in particular where food security is not assured
.....
12. Identify the reasons for food insecurity in these countries
.....
13. Are you familiar with the term “sustainable food system”, if so what is it based on?
.....
14. Do you think that national legislation sufficiently ensures food security for its citizens?
 - Yes
 - No
 - I do not know

➤ What legislation in this area should be created
.....

Based on the obtained results, the percentage distribution of various responses to the posed question was determined. Due to the survey-type nature of the research, which included descriptive responses, no statistical calculations were performed. The data were analysed and compared with literature data.

RESULTS AND DISCUSSION

Food security and food safety

According to Michalczyk (2019), food security defined for Poland in the National Security Strategy describes a situation in which all households have access to the food needed for all of its members and are not at risk of losing this access. Food security is also defined as uninterrupted physical and economic access to safe, nutritious food that meets nutritional needs and is sufficient for all people to lead a healthy and active life (Gulbicka 2009; Żmija et al. 2018). This is the definition given by Szczepaniak (2018). Marks-Bielska et al. (2020) state that consumer rights include the right to the fulfilment of basic needs, including food needs, and according to Dąbrowska and Ozimek (2014), food security is necessary to guarantee this right.

In Poland, the basic legal act on food is the Act of 25 August 2006 on food and nutrition safety, promulgated in the Journal of Laws (2006) no. 171 item 1225. Article 3 of this document defines a food (or foodstuff) as any substance or product within the meaning of Art. 2 of Regulation No 178/2002, according to which a 'food' (or 'foodstuff') refers to any substance or product, partially processed or unprocessed, intended for human consumption or whose consumption by people can be expected. Food safety is defined in various ways and is regulated by European and national laws. According to Kozłowska-Burdziak (2019), food safety encompasses the quality of foodstuffs, their nutritional value, and compliance with trade and market standards. According to Michalczyk (2019), food safety refers to the agricultural sector, food processing, trade, plant breeding, and animal welfare, and is understood as the combined effect of health-promoting and nutritional components of the diet and anti-nutritional and toxic substances. European Union countries, through legal regulations, take the utmost care to ensure food safety. Organizations with a leading role in working to ensure food safety include the International Organization for Standardization (ISO), the World Health Organization (WHO), the European Committee for Standardization (CEN), the Global Food Safety Initiative (GFSI), and the European Food Safety Authority (EFSA). It is worth noting that the 'from farm to table' policy has been introduced in order to improve food policy in terms of food safety.

Most of the agriculture students surveyed (77%) indicated different meanings for the terms 'food security' and 'food safety'. However, they had difficulty specifying their precise definitions. Only 55% correctly defined food safety as a 'narrower' concept than food security. Students of dietetics and fields related to medicine more often indicated that the terms had the same meaning (61%), understanding them to refer to food safety.

With regard to food safety, 70% of agriculture students indicated that food produced in Poland is safe, while 5% believed it to deviate from standards, and 25% had no opinion. The corresponding percentages among other students were 60%, 12% and 28% (Fig. 1). In all questionnaires, the respondents stated that products of plant origin were safer (86%), while animal products were less safe (75%).

In Poland, the State Sanitary Inspectorate and Veterinary Inspectorate are the main bodies responsible for implementing provisions regarding food security and food safety. More than 95% of the students surveyed gave the correct answer to this question, including 100% of students of dietetics. Only 46% of all respondents indicated the role of the State Agricultural and Food Inspection Authority (mainly students of dietetics).

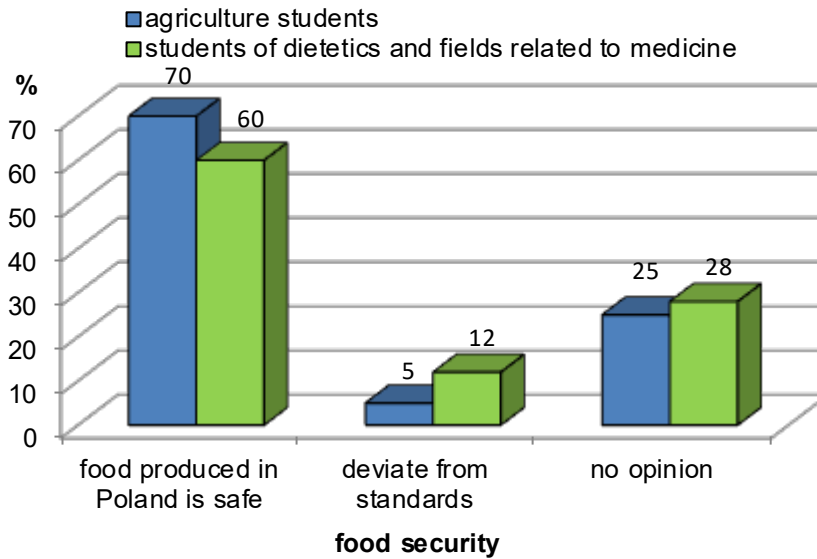


Fig. 1. Respondents' opinions on food security

The scale of food security and food self-sufficiency

Food security should be considered on an international, national and household scale (Małysz 2009; Kozłowska-Burdziak 2019). This was the opinion expressed by 75% of respondents, irrespective of their course of study. Students indicated an association between national security and household security (nearly 88%). It is difficult to draw a clear line between them. Physical access, i.e. primarily the level and structure of agricultural production in a given country, determines the conditions of food security in households, which depends on macroeconomic decisions and achievements (e.g. the gross domestic product and the level of income of the population), and thus is determined on the national level (Gulbicka 2009). This is in agreement with the opinions of other researchers (Szczepaniak 2018). The level of food production depends largely on state policy, including legal regulations, support for agricultural producers, the labour market, intervention in the food market, support for food banks, and regulation of food quality and safety (Żmija et al. 2018).

The basic tool used to determine global food security is the Global Food Security Index, developed in 2012 (Krasiuk 2015). It measures the food security of 113 countries, evaluating categories such as the affordability, accessibility, quality and safety of food, as well as natural resources and the resistance of food systems to climate change. The index uses 58 unique indicators of food security, including indicators related to earnings and inequalities associated with earnings, gender and access to natural resources. In 2021 Poland had a favourable ranking of 22.

According to many experts, Poland is a self-sufficient country in terms of food, and even produces a surplus of food (Mikuła 2012; Kozłowska-Burdziak 2019). The self-sufficiency analysis indicates that Poland is self-sufficient in production of cereals, meat, vegetables, fruit, and milk, and thus basic food products. According to many specialists and experts, physical access to food is not at risk in Poland (Szczepaniak 2018; Kozłowska-Burdziak 2019). This suggests high agricultural production, as well as a positive and continually growing balance of foreign trade in agricultural and food products, indicating surpluses. The quality and safety of this food is important as well. According to Poczta-Wajda (2018), the most serious problems with physical and economic access to food are found in developing countries, whereas in developed countries they concern only a very small group and are the result of low income or a poor diet, e.g. a diet causing overweight or obesity.

More than 77% of agriculture students, 65% of students of dietetics, and 58% of students of fields related to medicine indicated that Poland is a self-sufficient country in terms of food production. Among all respondents, 65% indicated that Poland is one of the leading European countries in plant production (fruits and cereals) and animal production (milk), and about 35% believe that belonging to the EU limits agricultural production in the country.

Aspects of food security

According to Małysz (2009), food security relies on the fulfilment of three conditions – physical access to food, economic access to food, and the production of healthy food. Michalczyk (2019) suggests an even more elaborate definition, according to which it must include adequate food availability, access to food, food utilization, and stability.

Szczepaniak (2018) identifies four related aspects of food security: physical availability of food, i.e. an adequate amount of food produced in the country, imported, or supplied under aid programmes; economic and physical access, i.e. the economic and physical possibility of acquiring it (affordable prices, access for all social groups); utilization of food, i.e. its health quality; and the stability of the food supply over time, irrespective of changing circumstances.

An adequate level of food security is a necessary but not sufficient condition of economic security. Physical access to food is usually determined at the global and national level.

Various opinions can be found in the literature on economic access to food. Marzęda-Młynarska (2014) defines economic access as the ability of all social groups, including the poorest, to acquire food. Economic access is determined by the income level of households, food prices, market functioning, and adequate infrastructure ensuring food distribution (Poczta-Wajda 2018). Kozłowska-Burdziak (2019) studied the conditions of food security in Poland and concluded that the condition of economic access is not met. According to the author, more than 7% of the population lives below the subsistence level, and more than 5% of households lack the financial resources to buy food, while at the same time food is wasted on a large scale. Economic access is usually measured at the household level. It takes into account the incomes of household members, their expenditures, and their ability to purchase food. According to Poczta-Wajda (2018), food quality as an aspect of food security is measured at the level of the individual, using one of the following methods:

- determination of the degree to which the need for calories of the inhabitants of a given region is satisfied (assessment of energy balance),
- determination of a household's expenditures on food via interview,
- measurement of individual consumption via 24-hour interview,
- anthropometry, involving assessment of parameters of the human body (height, weight, and body proportions),
- assessment of the scale of respondents' experience of food insecurity and perceptions of their own food situation.

In our survey, 96% of students of all areas of study indicated that the subject of food security, in terms of economic access to food and food quality, is discussed in their household. Food purchases account for 45% of total monthly expenditures in the households of 41% of respondents, for 35% in the case of 35% of students, and only 20% in the households of 24%. Among agriculture students, 45% pay attention to price while shopping for food, 24% to the producer, 21% to the use-by date, and 10% to chemical composition and nutritional value. Among students of dietetics and medical fields, the corresponding values were 41%, 11%, 28% and 20% (Fig. 2). Irrespective of the course of study, given a choice between ease and speed of food preparation, place of purchase, and quantity over quality, the respondents most often chose the first (about 57%). Most students (about 72% of agriculture students and 75% of students of dietetics and medical fields) stated that an increase in income does not necessarily lead to an increase in

expenditures on food. More than 68% of respondents regarded food security in their households as satisfactory.

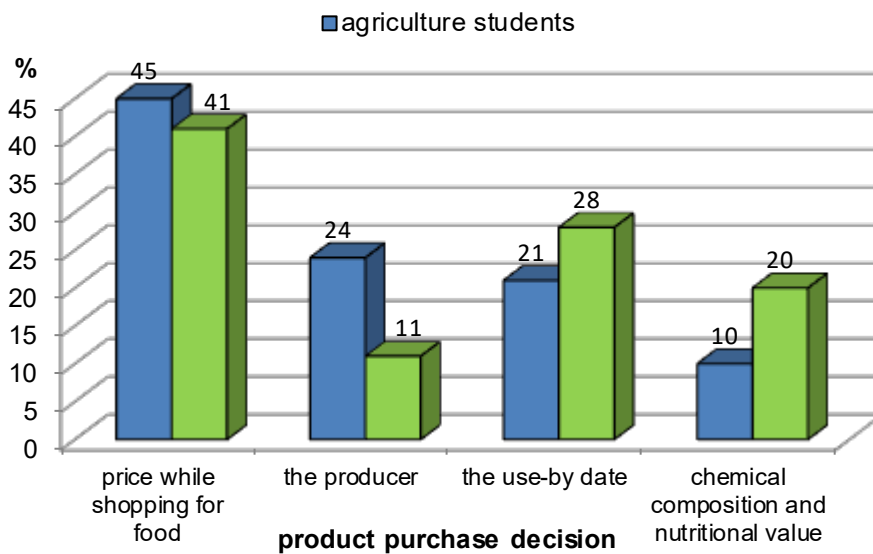


Fig. 2. Selection criteria when purchasing food products

European Union regulations concerning primary production (including of food), including the safety, hygiene, identity and composition of products, as well as care for the environment, plant and animal health, and animal welfare, are among the strictest in the world. They make it possible to track the origin of food from the producer to purchase by the consumer. The basic principles of food safety in the European Union are defined by Regulation (EC) no. 178/2002 of the European Parliament and of the Council of 28 January 2002 (European Parliament 2022) laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (Ozimek 2018), while in Poland the basic legal act is the Food and Nutrition Safety Act of 25 August 2006, amended by the Act of 8 January 2010. In subsequent years the regulations have been amended many times, and new regulations concerning food safety have been introduced in European Union countries (e.g. Regulation 852/2004 (European Parliament 2004); 1331/2008 (European Parliament 2008), 396/2005 (European Parliament, 2005) 1881/2006 (European Parliament 2006); 1332/2008 (European Parliament 2008) and 1333/2008 (European Parliament 2008). They have concerned issues such as principles governing the use of food additives, genetically modified food, or 'new food'. In considering the concept of safe food, the role of the Rapid Alert System for Food and Feed (RASFF), operating mainly in European Union countries, must be mentioned. The name and aims of this system were familiar to 68% of students of dietetics, 62% of agriculture students, and only 36% of students of fields related to medicine. They correctly indicated that this system is used for exchange of information regarding food products posing a potential threat to consumers and steps that have been taken in risk situations between national food quality control bodies.

Causes of hunger and malnutrition

The main causes of hunger and poverty in many parts of the world are as follows:

- geographic location (difficult conditions for crop cultivation, shortage of fresh water, desertification of soils),
- authoritarian systems of government, military coups,
- low level of agricultural development, including agrotechnology,

- ethnic conflicts, often leading to armed conflicts,
- high and unstable food prices in developed countries,
- little opportunity to export food, mainly due to lack of financial means,
- poor food distribution (Gulbicka 2009; Wardhani and Haryanto 2020; Zhou et al. 2020).

It is worth noting that many studies no longer identify the increase in population as the main cause of hunger and poverty in the world (Górecki and Halicka 2013). Despite the significant increase in agricultural production on a global scale, the food situation in the world is not improving significantly. Although the situation of EU countries, including Poland, is good, the existence of risks associated with food insecurity must be borne in mind (Mikuła 2012). Irrespective of their course of study, the survey participants correctly identified the main causes of hunger and malnutrition in the world (89%), as well as the regions and countries in which these phenomena are present (79.5%). More than 35% of students identified the increase in population as the main cause of malnutrition and hunger in the world, 33% indicated authoritarian systems of government and associated armed conflicts, and 32% indicated unfair distribution of food.

CONCLUSIONS

Food security occurs when each of its three aspects – physical access, economic access, and food quality – is fulfilled and stable. Their fulfilment can be disturbed by sudden natural, political or economic phenomena. This is confirmed by recent events in Europe and around the world (the war in Ukraine and the COVID 19 pandemic).

Most of the students surveyed indicated different meanings for the terms ‘food security’ and ‘food safety’ and identified Poland as a country which is self-sufficient in food production. They indicated a strong association between national and household security, including food security. They reported that the subject of food security, in terms of economic access to food and food quality, is discussed in their household, and they regard Polish food as safe. The main criteria applied in choosing food products for purchase were their price and ease of preparation. Most respondents regarded food security in their households as satisfactory and stated that an increase in income does not necessarily lead to an increase in expenditures on food. Irrespective of their area of study, the survey participants correctly identified the main causes of hunger and malnutrition in the world, as well as the regions and countries in which these phenomena occur. The main causes of hunger and malnutrition in the world were considered to be the increase in the population, authoritarian systems of government and associated armed conflicts, and unfair distribution of food.

REFERENCES

- Burkovska A., Shebanina O., Lunkina T., Burkovska A.** 2001. Ensuring food security in the context of the sustainable development of agriculture. *Manag. Theory Stud. Rural. Bus. Infrastruct. Dev.* 43(3), 337–345. DOI: 10.15544/mts.2021.30.
- Dąbrowska A., Ozimek I.** 2014. Bezpieczeństwo żywnościowe konsumentów w Polsce – wybrane aspekty [Food security of consumers in Poland – the selected aspects]. *Handel Wew.* 4, 55–69 [in Polish].
- Dobre I., Davidescu A.A., Apostu S.A.** 2020. Analysing food security at European level. *Econ. Comput. Econ. Cybern. Stud. Res.* 54, 173–185. DOI: 10.24818/18423264/54.4.20.11.
- European Parliament and Council Regulation (EC) No 178/2002** of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. *Off. J. Eur. Comm.*

- European Parliament and Council Regulation (EC) No 852/2004** of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs. Off. J. Eur. Comm.
- European Parliament and Council Regulation (EC) No 1331/2008** of the European Parliament and of the Council of 16 December 2008 establishing a common authorization procedure for food additives, food enzymes and food flavourings. Off. J. Eur. Comm.
- European Parliament and Council Regulation (EC) No 396/2005** of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive. Off. J. Eur. Comm.
- European Parliament and Council Regulation (EC) No 1881/2006** of the European Parliament and of the Council of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs. Off. J. Euro. Comm. L.
- European Parliament and Council Regulation (EC) No 1332/2008** of the European Parliament and of the Council of 16 December 2008 on food enzymes and amending Council Directive 83/417/EEC, Council Regulation (EC) No 1493/1999, Directive 2000/13/EC/.
- FAO.** 2003. Trade reforms and food security. Conceptualizing the linkages. Rome, FAO.
- Górecki J., Halicka E.** 2013. Globalne bezpieczeństwo żywnościowe świata w świetle prognozowanych trendów rozwoju rolnictwa w latach 2020–2050 [Global food security of the world in light forecast trends in the development of agriculture in the years 2020–2050]. Zesz. Nauk. SGGW Ekon. Org. Gosp. Żyw. 102, 5–13 [in Polish].
- Gulbicka B.** 2009. Bezpieczeństwo żywnościowe krajów rozwijających się [Food security of developing countries]. Roczn. Nauk Rol. 96(4), 50–58 [in Polish].
- Journal of Laws.** 2006. Act on safety of food and nutrition. No. 171 Pos. 1225, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC113724/>, access: 01.01 2023.
- Kozłowska-Burdziak M.** 2019. Warunki bezpieczeństwa żywnościowego Polski (ze szczególnym uwzględnieniem województwa podlaskiego) [Conditions of food security in Poland with particular emphasis on the Podlaskie Voivodeship]. Optimum Econ. Stud. 3(97), 33–48. DOI: 10.15290/oes.2019.03.97.03 [in Polish].
- Kraciuk J.** 2015. Bezpieczeństwo żywnościowe z perspektywy krajów słabo i wysoko rozwiniętych [Food security from the perspective of less and highly developed countries]. Roczn. Nauk. (17)3, 205–209 [in Polish].
- Księżopolski K.M.** 2011. Bezpieczeństwo ekonomiczne. Warszawa, Dom Wydawniczy Elipsa [in Polish].
- Leśkiewicz K.** 2012. Bezpieczeństwo żywnościowe i bezpieczeństwo żywności – aspekty prawne [Food security and food safety – legal aspects]. Prz. Prawa Rol. 1(10), 179–198 [in Polish].
- Małyś J.** 2009. Ekonomiczna interpretacja bezpieczeństwa żywnościowego, in: Bezpieczeństwo żywności w erze globalizacji. Ed. S. Kowalczyk. Warszawa, Wydaw. SGH, 79 [in Polish].
- Marks-Bielska R., Zenkova I., Parzonka A., Opalach D.** 2020. Postrzeganie bezpieczeństwa żywnościowego na poziomie gospodarstwa domowego przez studentów Uniwersytetu Warmińsko-Mazurskiego w Olsztynie [Perception of food security at household level by students of the University of Warmia and Mazury in Olsztyn]. Econ. Reg. Stud. 13(1), 33–46. DOI: 10.2478/ers-2020-0003 [in Polish].
- Marzęda-Młynarska K.** 2014. Globalne zarządzanie bezpieczeństwem żywnościowym na przełomie XX i XXI wieku [Global food security management at the turn of the 20th and 21st centuries]. Lublin, Wydaw. Uniwersytetu Marii Curie-Skłodowskiej, 93–109 [in Polish].
- Michalczyk J.** 2012. Bezpieczeństwo żywnościowe w obliczu globalizacji [Food security in the face of globalization]. Ekonomia 1(18), 9–23. DOI: 10.18778/2082-4440 [in Polish].

- Michalczyk J.** 2019 Bezpieczeństwo żywnościowe z perspektywy państw Unii Europejskiej [Food security from the perspective of the European Union countries]. *Ekon. Miedzynar.* 25, 18–45. DOI: 10.18778/2082-4440.25.02
- Mikuła A.** 2012. Bezpieczeństwo żywnościowe Polski [Food security of Poland]. *Rocz. Ekon. Roln. Rozw. Obsz. Wiej.* 99(4), 37–48 [in Polish].
- National Security Strategy of the Republic of Poland.** 2020. Available at: https://www.bbn.gov.pl/ftp/dokumenty/National_Security_Strategy_of_the_Republic_of_Poland_2020.pdf, access: 01.01.2023.
- Ozimek I.** 2018. Bezpieczeństwo żywności w kontekście regulacji prawnych [Food safety in the context of legislation]. *Rocz. Nauk. SGGW* 20(6), 189–196. DOI: 10.5604/01.3001.0012.7760 [in Polish].
- Ozimek I., Gutkowska K.** 2005. Wybrane aspekty zachowań konsumentów na rynku żywności – kryteria różnicowania. Wydaw. SGGW, Warszawa [in Polish].
- Pawlak K.** 2011. Bezpieczeństwo żywnościowe gospodarstw domowych w USA [USA household food security]. *Więś Rol.* 3(153), 67–83 [in Polish].
- Poczta-Wajda A.** 2018. Miary i wymiary bezpieczeństwa żywnościowego [Measures and dimensions of food security]. *Probl. Rol. Świat.* 18(33), 203–213. DOI: 10.22630/PRS.2018.18.1.19 [in Polish].
- Szczepaniak I.** 2018. Ocena bezpieczeństwa żywnościowego i samowystarczalności żywnościowej Polski na tle państw Unii Europejskiej [Evaluation of food security and food self-sufficiency of Poland against the background of European Union countries]. *Int. Bus. Global Econ.* 37, 168–182. DOI 10.4467/23539496IB.18.012.9385 [in Polish].
- Trade Reforms and Food Security.** 2003. Conceptualizing the linkages. Rome, FAO.
- Wardhani F.S., Haryanto T.** 2020. Foreign direct investment in agriculture and food security in developing countries. *Contemp. Econ.* 14, 510–520.
- Zhou J., Dellmuth L.M., Adams K.M., Neset T.S., Von Uexkull N.** 2014. The geopolitics of food security: barriers to the sustainable development goal of zero hunger. Stockholm, Stockholm International Peace Research Institute (SIPRI), 1–15.
- Żmija D., Żmija K., Czekaj M.** 2018. Oddziaływanie państwa na tworzenie warunków do zapewnienia bezpieczeństwa żywnościowego w wymiarze krajowym i regionalnym [Influence of the state on creating conditions to ensure food security in the national and regional dimension]. *Rocz. Nauk. SERiA* 20(5), 242–249. DOI: 10.5604/01.3001.0012.6716 [in Polish].

OPINIE STUDENTÓW WYBRANYCH KIERUNKÓW STUDIÓW NA TEMAT BEZPIECZEŃSTWA ŻYWNOCIOWEGO I BEZPIECZEŃSTWA ŻYWNOCI

Streszczenie. W każdym kraju i na każdym kontynencie bezpieczeństwo żywnościowe jest jedną z podstawowych potrzeb człowieka, dlatego wyżywienie ludzi powinno być celem nadrzędnym zarówno na poziomie międzynarodowym i krajowym, jak i na poziomie gospodarstw domowych. Bezpieczeństwo żywnościowe polega na spełnieniu trzech warunków: fizycznego dostępu do żywności, ekonomicznego dostępu do żywności oraz produkcji zdrowej żywności zapewniającej dietę optymalną pod względem odżywczym. Celem pracy była ocena podstawowej wiedzy z zakresu bezpieczeństwa żywnościowego wśród studentów kierunków rolniczych i medycznych na poziomie globalnym i gospodarstw domowych. Badanie wykazało zadowalający poziom wiedzy na temat przedmiotu badań. Studenci wskazują na różnice w koncepcjach bezpieczeństwa i bezpieczeństwa żywnościowego oraz na różnicowanie ekonomicznego dostępu do żywności i potrzebę jego eliminacji. Niezależnie od kierunku studiów uczestnicy badania prawidłowo zidentyfikowali główne przyczyny głodu i niedożywienia

na świecie, a także regiony i kraje, w których te zjawiska występują. Za główne przyczyny głodu i niedożywienia na świecie uznano wzrost liczby ludności, autorytarne systemy rządów i związane z nimi konflikty zbrojne oraz niesprawiedliwy podział żywności.

Słowa kluczowe: bezpieczeństwo żywnościowe, żywność, ekonomiczny i fizyczny dostęp do żywności.