Marcin Wysokiński, Piotr Gołasa, Wioletta Bieńkowska
Szkoła Główna Gospodarstwa Wiejskiego w Warszawie

The importance of GLOBAL GAP for food safety in the supply chain[1]

Introduction

Globalization, increased competition and greater consumer awareness growing and growing demands, these are the reasons inducing the production of safe and healthy food. In times of growing competition for customers, ensuring the health safety of the product produced follows not only from the need to meet legal requirements, but must be an essential element in the marketing strategy of the company. However, it requires constant monitoring of every stage of production, at all levels of the food chain, from primary production through processing and distribution, to the date of purchase by the consumer. Supervision over the production, processing and distribution of food allows you to minimize or eliminate the risks. This is achieved through quality assurance systems play the role of monitoring tools. Apart from obligatory such as GHP (Good Hygiene Practice), GMP (Good Manufacturing Practice) and HACCP (Hazard Analysis and Critical Control Points), ISO 9001 or 2200, are used in a voluntary quality standards IFS (International Food Standard), BRC (British Reatil Consortium Food Technical Standard and AIB (American Institute of Baking). The primary production is used for these purposes, the GLOBALGAP system, which is becoming very popular and important solution in this area. A very important aspect in the field of food safety becomes an obligation of traceability (Traceability). This concept has been indicated in Regulation (EC) No 178/2002 of the European Parliament and the Council. Article 18 of the regulation made it mandatory traceability as an essential element of product safety. Traceability ("follow the footsteps") was considered and incorporated into the guidelines of ISO 2200 in 2005, and later in the Law on Food Safety and Nutrition in 2006 (Journal of Laws No. 171, item 2006. 1225). Moreover, since 2006, the HACCP system is mandatory for all companies in the food chain with the exception of primary production [Regulation (EC) No 852/2004 of the European Parliament and of the Council dated. 29.04.2004 on the hygiene of foodstuffs]. This does not mean, however, that the primary production stage there is no threat to food safety. As it turns out, much of the food production cases of bad health quality in the EU Member associated with primary production. It should be noted dioxin scandal in Belgium (contaminated feed), a disease, "mad cow" epidemic of foot and mouth disease and avian flu to become aware of the reality of the risks at the beginning of the food chain. The main threats to food safety so at this stage is the production of chemical hazards (eg derived from chemical pesticides) and biological threats. Despite the many real threats, primary production is not subject to mandatory quality systems. It becomes necessary to exercise supervision over the stage of the food chain. This is possible thanks to the implementation and maintenance of voluntary quality systems [5]. One of the quality system, which allows to eliminate or minimize the risk to an acceptable level at the stage of primary production is the Good Agricultural Practice (GAP). It is a system of organization and production technology used on the farm, which will reduce to a minimum the negative impact of agriculture on the environment and provide the appropriate economic efficiency of production [2]. Good Agricultural Practice, as well as other quality systems applied to farms applying to the principles of the need to document all actions taken. Must be carried and stored in [2]:

- Plans for consumption of natural and mineral fertilizers,
- Records about agrotechnical operations carried out giving the data about fertilizers applied and plant protection products and their dose,
- Records of yields obtained,
- Cards livestock production documentation stating the nutritional doses, performance breeding veterinary treatments carried out, etc.,

[1] Research granted by National Science Centre from the funds for science in years 2011-2013 as a scientific project no 2011/01/B/HS4/02612 „Stopień integracji w łańcuchu dostaw a efektywność przedsiębiorstw przetwórstwa rolno-spożywczego”.

- Register of revenues and expenditures.

The key element that could minimize chemical hazards resulting from the implementation of the GAP is a need for integrated plant protection measures. This means minimizing the use of pesticides and use them only in emergency surgery when are exhausted all other available methods. GAP also limited, as far as possible, agronomic treatments (fertilization) to a minimum, so that the plants can grow and develop favorably in [2]. Another tool is the primary production monitoring system GLOBALGAP. This system is designed to "minimize the risk of safety concerns products produced during the process of agricultural production and objective verification procedure" [3]. GLOBALGAP system is discussed in more detail later in this article.

GLOBALGAP

It is an independent, voluntary system to ensure food safety for primary agricultural production. GLOBALGAP standard was originally called EUREPGAP in 1997 as an initiative of the Working Group retail chains are members of the organization EUREP (Euro-Retailer Produce Working Group) to develop common procedures and a uniform standard for Good Agricultural Practices GAP (Good Agricultural Practice) and provide food safety. In the construction of the system were used the guidelines : the GHP, GMP and HACCP. GLOBALGAP basic assumptions are:

- Food safety,
- Protection of the environment,
- Occupational health and safety and welfare of employees,
- Animal welfare.

One of the main standards is to reduce to a minimum the use of fertilizers and to thereby reduce the impact of agriculture on the environment, and ensure the longest use of agricultural land. The requirements except that there are two special sections devoted to environmental protection and management of waste and pollution.

In Poland it is quite a common system, especially among producers of vegetables under cover, mushrooms and apples. Upon entry, the structure of the GLOBALGAP requirements for farms changed. The current one checklist so far has been replaced by several modules (Table 1). The first module is a requirements for all households. The second are the requirements for crop production, the last three are the specific requirements for animal breeders. These main modules are divided into still more specific.

Obtain GLOBALGAP certificate allows you to maintain, develop and establish cooperation with wholesale networks and customers from abroad. Often it is the door to new areas of sales.

GLOBALGAP in everyday practical sense means the certificate required by retailers and other customers, who make it start or continue doing business with providers of unprocessed agricultural products. Currently GLOBALGAP is the most advanced among the manufacturers/suppliers of fresh fruits and vegetables. Therefore, in the rest of this article focuses on the certification of farms producing fruit.

In a broader sense – GLOBALGAP is a set of requirements for primary production, the fulfillment of which is to provide high quality and above all, the safety of food produced.

Designated standards are based on the HACCP (hazard analysis and critical control points), contain guidelines to fulfill the provisions of national and international law, and take into account aspects of the impact of agricultural production on the environment.

GLOBALGAP system applies to each manufacturer knowingly the impact of its activities on the quality and safety of food produced. In practice, the most common system is implemented in producer groups, associations of producers, wholesalers and their suppliers, as well as farms.

GLOBALGAP requirements, so-called. compliance criteria have been developed in the form of checklists. They are a practical tool that can be used when building the GLOBALGAP in the company/farm.

Tab. 1. Structure of GLOBALGAP

<table>
<tr><td rowspan="11">AF

ALL FARM
BASE</td><td colspan="3">PLANT PROPAGATION MATERIAL</td></tr>
<tr><td rowspan="5">CB

CROPS BASE</td><td colspan="2">FV FRUIT & VEGETABLES</td></tr>
<tr><td colspan="2">CC COMBINABLE CROPS</td></tr>
<tr><td colspan="2">CO COFFEE</td></tr>
<tr><td colspan="2">TE TEA</td></tr>
<tr><td colspan="2">FO FLOWERS & ORNAMENTALS</td></tr>
<tr><td rowspan="5">LB

LIVESTOCK BASE</td><td rowspan="3">RB
RUMINANT BASE</td><td>DY DAIRY</td></tr>
<tr><td>CS CATTLE & SHEEP</td></tr>
<tr><td>CYB CALF/YOUNF BEEF</td></tr>
<tr><td colspan="2">PG PIGS</td></tr>
<tr><td colspan="2">PY POULTRY</td></tr>
<tr><td colspan="3">AB AQUACULTURE MODULE</td></tr>
<tr><td colspan="3">COMPOUND FEED MANUFACTURING</td></tr>
</table>

Source: www.globalgap.org.

- AF (All farms) – sets out requirements for all agricultural producers regardless of the production profile,
- CB (base crops) – sets out the requirements for vegetable producers,
- LB (livestock base) – sets out the requirements for livestock.

For GLOBALGAP certification, it is essential to implement the requirements of the standard in applying for the certificate of the farm.

What should be done:

- adapt the infrastructure,
- draw up system documentation and forms required to keep records,
- in the case of the producer group should draw up an internal management system to ensure a consistent approach of all producers in the group,
- be tested for pesticide residues – each manufacturer is required to test each grade of product – proposed for certification at least once within 12 months,
- if water is used in the handling of the product – to carry out laboratory tests of water.

Then you can apply for registration and certification carried out by an independent certification body.

Certification is based on an inspection by a representative of the certification on-site at customer's location. In the event of non-compliance, corrective actions must be carried out within a specified period of time. Based on the documentation of the inspection, the certification body decides to issue the certificate.

Certificate is issued for a period of 1 year. After this time, to extend the validity of the certificate, you must undergo recertification. Inspections carried out in the control group and the manufacturers represented in the group reported the number of manufacturers for certification. After about 6 months from the issuance of the certificate shall be made so – called. unannounced inspections in some locations certified according to certain rules.

Retailers and manufacturers from around the world joined forces to draw up GLOBALGAP Standard, one of the largest and most harmonized standards for farms. This initiative aims to improve consumer confidence in the food they buy. More than 100,000 households in more than 100 countries have implemented this standard to ensure the safety of the food they produce, as well as ensure compliance with environmental and social requirements. Farms that have not yet fully adapted to meet the requirements of international and achieve a level of GLOBALGAP Standard can start this process through a phased approach starting with the implementation of the PFA – Basic Standard for Quality Assurance (Primary Farm Assurance).

Reference documents (production of fruit and vegetables)

Requirements that organization must meet in order to obtain a certificate under this Policy details are specified in the standard GLOBALGAP Standard Fruit and Vegetables (current version), issued by GLOBALGAP. This is a standard reference for European organizations in the retail sector in agricultural

production in general and in particular, the production of fruit and vegetables. The scope of the standard GLOBALGAP Fruit and Vegetables sector includes organizations of fruit and vegetable production, manufacturing products under its own brand and branded non-organized. The standard does not apply to wholesale, import, distribution and storage, if such activities are carried out outside the control of the Organization.

The certification process

After acceptance of the offer by the farm Certifying Organization has a formal request for certification and reconciliation schedule performance certification activities.

An inspection carried out in accordance with the General Rules of GLOBALGAP after registration and acceptance of the farm to the GLOBALGAP database. The choice of the period in which the inspection will be carried out shall be in accordance with the General Rules of GLOBALGAP and depends on whether the organization performs certification for the first time or extend the previously issued certificate. In any case, the most appropriate period to perform the inspection time is approaching harvest.

The first inspection (certification) should be carried out at least 3 months after implementation of the system to provide appropriate evidence (product registration).

In case of non-compliance primary or secondary more than 5% if the household fails to implement corrective action within 3 months of the initial inspection, the audit will be repeated.

The second inspection and subsequent inspections (renewal certificate) after the first certification should be carried out when the product is available (in the field or in the store) to ensure the representativeness of the sample subjected to an annual inspection. In case of non-compliance primary or secondary more than 5%, the holding is obliged to implement the corrective actions within 28 days from the date of inspection. Determining the duration of the inspection of both the first and the subsequent certifications, depends on many factors such as the area under the number of registered crops, the number of places and certified on the option selected by the Organization:

- Option I without QMS: a single manufacturer applies for certification of certain products,
- Option I of the QMS: a single manufacturer (one company) with several production units of a quality management system certification is compliance with the requirements of GLOBALGAP CPCC and QMS requirements applied (based on GLOBALGAP Checklist Quality Management System in accordance with the General Rules)
- Option II: producer group applies for certification. The audit shall include an inspection of the control points and compliance criteria (IPCC), as in option 1, but in this case also includes the verification of the quality management system implementation in the group of producers (based on GLOBALGAP Checklist Quality Management System in accordance with the General Rules of GLOBALGAP)
- Option III: benchmarking (comparative study) of a single manufacturer,
- Option IV: benchmarking group of producers.

The costs of activities related to unannounced inspections are specified in the tender cost calculation. The farm is obliged to provide his own willingness to carry out inspections in accordance with the requirements of the standard. During the final meeting of the evaluation team leader shall inform the Organization of the results of inspections and provide explanations on the results of the inspection.

Issuance of a certificate

In accordance with the requirements of GLOBALGAP decision to issue or refuse to issue a certificate is taken depending on the type identified "non-compliance" as defined in the standard.

On the basis of proposals corrective action submitted by the Organization, the Technical Committee may possibly call for additional documents and make a decision to conduct additional inspections, if it is necessary to examine the compatibility issues directly at the production site. GLOBALGAP certification acknowledges compliance compliance with the requirements of GLOBALGAP standard. It is published in English and points used option referred to above, and certified products with appropriate,

an identification code unique. The code is automatically assigned by the base Globalgap at the time of registration certificate.

GLOBALGAP in practice

Using the method of direct interview, conducted research on a fruit farm, GLOBALGAP certified. The farm produces apples on an area of 30 hectares and is located in the Mazowieckie voivodship. The aim of this study was to obtain information on the certification process, the scope of control of the farm, as well as the benefits of a certificate. Selected information obtained during the interview, is presented below.

The tested indicated eg which in his opinion, the most important elements were controlled on the farm:

- Review the various stages of food production – from planting, through a series of production on the field until the product received by the customer,
- Visual assessment of farms, distribution of information and warning signs, meeting the requirements of health and safety,
- Checking agronomic records – the use of plant protection products, fertilizers, mulches, substrates, fumigation, irrigation,
- Necessary documents – a risk analysis, procedure.

Respondents also indicated how was the process of certification in the farm:

- Fill in the inquiry by the manufacturer,
- Recording producer/producer group,
- offer,
- Signing the certification,
- Review and assessment of farm records,
- Audit of the farm: crop inspection sites, cold storage and warehouses,
- Determine the audit period – the period of harvest,
- Preparation of the audit report,
- Removal of any non-compliance,
- Award certificate.

Farmer also pointed out the benefits associated with the implementation of GLOBALGAP:

- Obtain an objective picture of crop safety,
- Facilitate traders to assess the quality of delivery and the standard supplier,
- Meet the requirements of the retail chains and other retailers,
- Uniform evaluation of suppliers,
- Avoid audits from the audience,
- Reduce the risk of liability for the effects of the growing market for health-threatening consumers through good preparation to withdraw the defective crops from the market,
- Meet the requirements of EU legislation on food safety,
- International, recognized in Poland, Europe and the world certificate,
- Establish long-term cooperation with a large customer (retail chain).

Conclusion

Protection of public health and consumer protection, as well as the huge losses incurred as a result of health-threatening food consumers led to greatly increased interest in the issue of food safety. Food products must be "safe products. Becomes a very important issue of awareness, the ability to create systemic mechanisms to ensure the quality of raw materials produced on the farm. It was at the farm, so the level of primary production should be analyzed thoroughly all cases indicating the existence of anomalies. This is particularly important in the production plant, which is used more and more fertilizers, pesticides and other chemicals. The solution may be to implement a system of voluntary food safety monitoring system on the farm. It is therefore essential awareness of economic operators active in the primary production and food safety system is a GLOBALGAP. An effective system of monitoring

in the entire production cycle, from ensuring the supervision of a primary product in conjunction with the full responsibility of the manufacturer for the product, will ensure a safe product with consistent quality.

Znaczenie systemu GLOBAL GAP dla bezpieczeństwa żywności w łańcuchu dostaw

Streszczenie

W artykule przedstawiono zagadnienia związane z systemem GLOBALGAP, który dotyczy każdego producenta świadomego wpływu swojej działalności na jakość i bezpieczeństwo produkowanej żywności. W praktyce, najczęściej system ten wdrażany jest w grupach producenckich, zrzeszeniach producentów, hurtowniach wraz z ich dostawcami, a także gospodarstwach indywidualnych, czyli podmiotach będących na początku łańcucha dostaw żywności. GLOBALGAP w codziennym zastosowaniu związany jest z uzyskaniem certyfikatu wymaganego przez sieci handlowe lub innych kontrahentów, którzy od niego uzależniają rozpoczęcie lub kontynuację współpracy biznesowej z podmiotami dostarczającymi nieprzetworzone produkty rolne. Jednym z podstawowych celów systemu jest ograniczenie do minimum stosowania nawozów i środków ochrony, a tym samym ograniczenie niekorzystnego wpływu rolnictwa na środowisko i dostarczenie na rynek żywności gwarantującej bezpieczeństwo konsumenta.

Abstract

In this article we present the issues related to the GLOBALGAP system which apply to each manufacturer conscious of its impact on the quality and safety of food produced. In practice, the most common system is implemented in producer groups, associations of producers, wholesalers and their suppliers and farms, or entities that are at the beginning of the food chain. GLOBALGAP in everyday use is associated with obtaining a certificate required by chain stores and other customers, who make it start or continue doing business with providers of unprocessed agricultural products. One of the main objectives of the scheme is to minimize the use of fertilizers and plant protection, and thus reduce negative impact of agriculture on the environment and food supply on the market that ensures the safety of the consumer.

Literature

[1]. Grochowska M. 2007. *Bezpieczeństwo żywności i żywienia*. Komentarz do ustawy oraz przepisów wspólnotowych. Wyd. ODDK, Gdańsk.

[2]. Matyjaszczyk E., *Systemy jakości w agrobiznesie*. Problemy jakości. 2006.

[3]. Wiśniewska M. *EUREGAP standard jakości i bezpieczeństwa żywności na etapie produkcji pierwotnej*. Dokumenty i wymagania. Problemy jakości. 2006.

[4]. Wiśniewska M. 2012. *GLOBALGAP. Podstawy, wymagania, wdrożenie I kontrola*. Wyd. ODDK, Gdańsk.

[5]. Wszoła N. *Wpływ monitoringu surowców i procesu produkcyjnego na jakość i bezpieczeństwo wyrobu gotowego*. Praca inżynierska, SGGW, Warszawa.

[6]. Sprawka M. 2011. *GLOBALGAP. Rośliny uprawne*. Wyd. ODDK, Gdańsk.

[7]. www.globalgap.org

[8]. www.globalgap.pl