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ANALYSIS OF CURRENT ISSUES OF QUALITY AND SAFETY IN GROWING CROPS

The paper analyzes the current approaches to safety and quality the process of agricultural products cultivation to introduce the basic elements of a code of good agriculture practice. Identified control points of Global GAP system, developed the hygiene program, aims to workers' health, safety and welfare, which included the elements that meet to the essential requirements of good hygiene practice

Keywords: *Global GAP, quality, safety, hygiene practice, control points*

Introduction. Growing consumer demand for knowledge in the area of food safety and producer accountability on what is applied to fresh produce is resulting in a greater need for transparency in the industry. In addition, the need for safe, fresh fruits and vegetables year-round requires producers of compliance with standards for safety and quality.

Now the most important in modern industrial countries are gardening problem of determining the set of factors effective functioning of the industry, their role and importance in the production process. For the production of quality and safe fruit products have become one of the priority areas of agriculture [1].

Strategic goal of horticulture industry in Ukraine is saturation of domestic food market competitive products and radical expansion of their exports; expand production of environmentally friendly products through the transition from an industrial-chemical methods to biological farming; farming increase the intensity by improving technologies and organization of production based on the use of science and technology [2].

For the recommendation of possible specific mitigating options and the assessment of their effectiveness and efficiency to reduce the risk for humans is very necessary to provide implementation of food safety management systems including: Good Agricultural Practices (GAP), Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Points (HACCP) should be primary objectives of agricultural products producers [3].

Good Agricultural Practices (GAPs) is a system of rules and principles, covering all aspects of agricultural activity and protects the environment from any adverse impact of agriculture. GLOBALGAP is a pre-farm-gate standard that covers the whole agricultural production process, from before the plant is in the ground or the animal enters the farm to non-processed product (processing, manufacturing or slaughtering is not covered, except for the first level of product handling in Aquaculture) [1].

Good Health/Hygienic Practices (GHP) include all practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain.

Good Manufacturing Practices (GMPs) are prescribed for four main areas of food processing:

- personal hygiene to prevent the spread of illness;
- adequate buildings and facilities;
- sanitary food-contact surfaces (e.g., equipment and utensils);
- process controls to prevent cross contamination Sanitation Standard Operating Procedures (SSOPs).

The quality management system is a series of policies and procedures about how the group

functions. It includes procedures for inclusion in the group, how internal auditing will be performed, what happens if a group member fails an audit, and other key components important to the function of the group. The quality management system needs to be certified through an audit for the group to be successfully GAP certified [4-5].

The aim of this study is to develop recommendations to minimize risk reduction in safety for growing agricultural products by tracking the entire production cycle.

Materials and methods. Methodological and informational basis for scientific research is labor, materials, periodicals and regulations that govern the requirements for product quality and safety agricultural products.

Results and discussion. Farm operators should take steps to develop worker hygiene policies, appropriately train all employees on these policies, and document worker hygiene training. Pathogenic, or disease-causing, microorganisms can be spread to fresh fruits and vegetables from employees if they are ill and actively shedding those pathogens in their stools. Open sores and lack of hygiene also can be routes for contaminating produce. Therefore, it is essential for workers to understand and practice appropriate personal hygiene to reduce the likelihood of contaminating produce or the surrounding environment (e.g., water, field, packinghouse) or spreading illness to other workers.

The control points of the Global GAP system are divided into three types: basic, secondary and recommendatory. To pass certification, the manufacturer must meet all the basic requirements and 95% of secondary. By recommendation, the required minimum is not specified. It is also important that not all control points are relevant for a particular farm, in which case they can be missed.

GlobalGAP requirements be applied the Control Points of the following sections:

Field history and field management; workers' health, safety and welfare; waste and pollution management, recycling and reuse; traceability system, etc. In accordance to the purpose, analyzed the components of our program 'Workers' health, safety and welfare'

Worker hygiene plays a critical role in minimizing potential contamination in agriculture products. This is especially true for fresh fruit which has multiple "touch points" with human hands during harvest and postharvest. It is necessary for preventing occupational injuries and illnesses to provide the principles: have one person to implement and maintain the program; enforce safety policies, practices and procedures; communicate to employees what is required regarding safety; review the safety program with all new workers at time of hire; correct hazards found during inspections; training and re-enforcement of training in general work safety practices and illness prevention maximizes compliance by workers.

For people working in the berry farm was developed the hygiene program (Figure 1). which included the following elements: basic employee hygiene, hand-washing practices, toilet use, establishing an illness policy, employee food and drink policy, blood and bodily fluids policy, establishing training programs and visitor policy.

Basic employee hygiene - is that employees should be instructed to wear clean clothes and bathe on a regular basis before coming to work. Any boils, sores or cuts must be covered with a waterproof dressing, such as a bandage and a glove on a hand. In instances when wounds cannot be covered, workers should not be allowed to handle produce or come in contact with equipment or packaging.

Practice good hygiene, including bathing and showering: keep fingernails short. Long nails provide hiding places for soils and microorganisms and make handwashing difficult. They also can puncture the skin of fruits and vegetables, which provides conditions for growth of spoilage or disease causing microorganisms; do not allow work clothes to become excessively dirty. Filthy work clothes can become a source of contamination; change or cover clothes and shoes or boots when moving from areas where animals are housed or graze to areas where produce is harvested and handled.

Establishing an illness policy. If workers should be excluded from working directly or

indirectly with produce. Ill workers can contaminate produce easily and make other workers ill. Signs of illness include fatigue, fever, diarrhea and vomiting. Employees should be instructed not to work if they are exhibiting any of these symptoms and should not be allowed to return to work until they are symptom free for 24 hours.

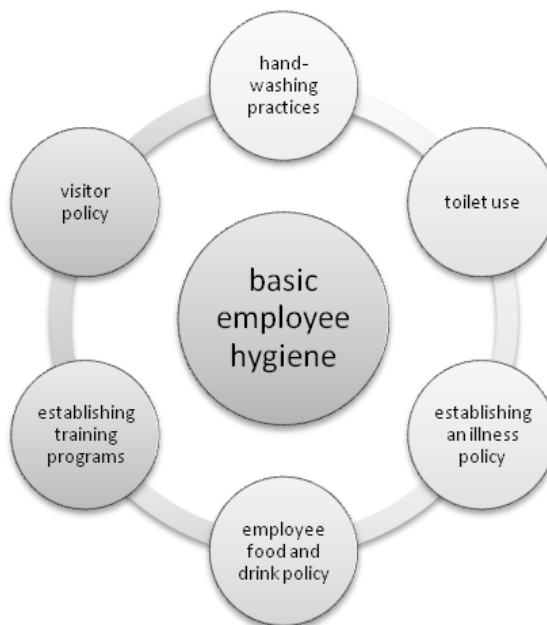


Figure 1. The components of workers' health, safety and welfare program

Develop policies for employees concerning food and drink. The owner should develop a policy that states that employees cannot have food in the field or packinghouse. The owner should also designate a break area where it is appropriate for employees to eat and drink and that is located away from produce and food-contact surfaces so as not to be a possible source of contamination. The person in charge also should make sure that employees have ready access to potable water at all times.

Hand-washing practices. The operator should establish when the employees are to wash their hands and assure adherence to these practices through training and signage at hand-washing stations. Employees should be instructed to wash their hands for at least 20 seconds using soap and water while vigorously scrubbing hands and under fingernails and to dry their hands with a single-use paper towel. Workers should wash their hands before starting work, after using the toilet, eating, drinking, smoking, or any time their hands may have been contaminated. Hand washing facilities must be accessible to employees. A hand-washing station should be located within a quarter mile of each employee at all times.

Toilet use. Employees should understand that they are expected to use toilets and should not urinate or defecate in or near the field or around the packinghouse. This scenario could be a source of contamination for produce and creates an unsanitary environment. Under recommendations the Occupational Safety and Health Administration 1 toilet for 15 people.

Blood and bodily fluids policy. The farm also should include a written policy that specifies the procedures and handling or disposition of food or food-contact surfaces that have been in contact with blood or other bodily fluids. Food-contact surfaces that are not disposable should be cleaned thoroughly with a detergent, rinsed with potable water and sanitized prior to being put back in service. Produce and any disposable food-contact surfaces should be thrown away. The impacted person should be removed from the harvesting location and attended to with a first-aid kit or other medical interventions.

Establishing a training program. Every employee should be trained on the importance of good hygiene, proper hand washing, usage of toilet facilities, illness policy and dress code. When

training, the operator should be mindful of the employee's native language and conduct training in a language that the workers understand to assure that the employee is familiar with the farm policies. All training should occur before employees begin working, at least on an annual basis or before a new harvesting season. Operators also should document when trainings occur and check to make sure that employees are complying with hygiene policies.

Visitor policy. Visitors to your farm also should be educated on hygienic practices, and operators or employees should accompany them while on the property to make sure they adhere to your policies. Visitors should be required to sign in on a visitor log to document their visit.

In fact, Global GAP based on the principle of self - a responsibility of the manufacturer to achieve compliance at all control points. The manufacturer determines the steps that needs to be done to achieve a certain checkpoint, and when, in his view, the farm meets all the requirements of this conformity by an independent third party - certification body.

Conclusion. So, it analyzes the main control point where the risk of loss due agriculture products and safety. Developed the hygiene program, aims to workers' health, safety and welfare, which included the elements that meet to the essential requirements of good hygiene practice: basic employee hygiene, hand-washing practices, toilet use, establishing an illness policy, employee food and drink policy, blood and bodily fluids policy, establishing training programs and visitor policy.

Certification of compliance with the requirements of Global GAP management provides a number of advantages, including the ability to identify processes and procedures confidence of stakeholders in the quality and safety of agriculture products, the ability to effectively identify, define and manage risks and to use the most efficient in their work management tool manufacture and supply of safety products that can be integrated with other management systems.

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АНАЛІЗ АКТУАЛЬНИХ ПИТАНЬ ЯКОСТІ ТА БЕЗПЕКИ ВИРОЩУВАННЯ СІЛЬСЬКОГОСПОДАРСЬКИХ КУЛЬТУР

У статті проаналізовано сучасні підходи до безпеки та якості процесу вирощування сільськогосподарських культур відповідно до основних елементів кодексу належної сільськогосподарської практики. Проаналізовано контрольні точки та розроблено програму гігієни, спрямовану на охорону здоров'я працівників, безпеку й благополуччя, яка містить елементи, що відповідають основним вимогам належної гігієнічної практики.

Ключові слова: якість, безпечність, гігієнічна практика, контрольні точки.

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АНАЛИЗ АКТУАЛЬНЫХ ВОПРОСОВ КАЧЕСТВА И БЕЗОПАСНОСТИ ВЫРАЩИВАНИЯ СЕЛЬСКОХОЗЯЙСТВЕННЫХ КУЛЬТУР

В статье анализируются современные подходы к безопасности и качеству процесса выращивания сельскохозяйственных культур в соответствии с основными элементами кодекса надлежащей сельскохозяйственной практики. Проанализированы контрольные точки и разработана программа гигиены, направленная на охрану здоровья персонала, безопасность и благополучие, включающая элементы, которые соответствуют основным требованиям надлежащей гигиенической практики.

Ключевые слова: качество, безопасность, гигиеническая практика, контрольные точки.

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ЕКОЛОГО-ПРАВОВІ МЕХАНІЗМИ ЗАПОБІГАННЯ ЗАСМІЧЕННЮ НАВКОЛОЗЕМНОГО КОСМІЧНОГО ПРОСТОРУ

Борьба с засмечением космосу начинается на Земле, адже саме від забезпечення екологічної безпечності матеріалів, процесів і технологій під час повного циклу космічної діяльності залежить збереження екосистеми навколоземного космічного простору (далі – НКП).

Ключові слова: навколишній навколоземний космічний простір, засмічення, оцінка впливу, повний життєвий цикл.

Постановка проблеми в загальному вигляді. Враховуючи той факт, що напрацювання екологічних критеріїв, на дотримання яких спрямовано всі вказані вище заходи, потребують глибоких знань про закономірності природних процесів, що відбуваються в НКП, які порівняно з аналогічними знаннями про навколишнє природне середовище (далі – НПС) Землі є значно біднішими, на цьому етапі наукових знань треба виходити вже з тих небезпек, які потребують реалізації негайного втручання. Правовою основою боротьби із вказаними небезпеками є такі міжнародні документи «м'якого права», як Настановчі принципи з мінімізації космічного сміття, розроблені Міжагентським координаційним комітетом з космічного сміття 11–13 жовтня 1999 року, що відображають технічні рекомендації для «чистого» підходу до використання космосу, однойменні принципи, які відображають рамкові рекомендації щодо деталізації в національних законодавствах, схвалені резолюцією ГА ООН 62/217 від 22 грудня 2007 року, а також регіональний документ – Європейський кодекс поведінки з мінімізації космічного сміття 2004 року, яким у своїй діяльності керується Європейське космічне агентство (далі – ЄКА). Перелік таких документів рекомендаційного характеру далеко не вичерпаний, але становить на сьогодні ту технічну базу, на яку під час космічної діяльності орієнтуються всі космічні країни. Проте для забезпечення проактивної дії екологічних вимог цієї рекомендаційної бази