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**FEATURES OF GMO FOOD: EMPIRICAL ASPECTS
OF FOOD OFFER IN THE HOTELS IN THE CITY
OF OHRID⁶⁰**

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ABSTRACT

Lately, a lot of care and attention people pay to their health. But, despite of that effort, Genetically Modified Organisms (GMO), become reality in modern society. Genetically modified organisms - represent organisms in which the genetic material has been altered in a way that is not realized through natural breeding or natural recombining, but genetic material changes in the laboratory, laboratory techniques and methods. The possibility to amend the forms of life has revolutionized the application of modern biotechnology, with genetic engineering and cloning. Knowing the technology of genetic modification is extremely important not only for scientists but also for producers, consumers and the population that already faces with major products whose integral part is GMO. The application of this technology is relatively new and not spent enough time to consider the possible harmful effects of the application. The issue of GMO becomes already a key theme of social discourse. On one side are those who say the arguments "for", often justifying the use of these products to reduce hunger in the world, as well as incentive profits obtained by the low price and low deposits, while on the other side, are those who warn of the possible negative consequences for human health and for the environment from the use of GM food. For this purpose, we make a survey in several hotels in Ohrid, in order to see their viewpoint under the pressure and warnings of the media about the importance of preserving human health and the use of GM food.

⁶⁰ Original scientific article

Keywords: Genetically Modified Organisms, food, health, positive effects, negative effects

INTRODUCTION

Genetically modified organisms, or GMO, become reality in modern society. The last thirty years, the possibility to amend the forms of life experience revolutionized the application of modern biotechnology, whose two greatest achievements are genetic engineering and cloning. Knowing the GM technology or the technology of genetic modification is extremely important not only for scientists but also for producers, consumers and the population already faces major products whose integral part is GMO. The application of this technology is relatively and still there is not spend enough time to consider the possible harmful effects of the application (Krešić, 2012).

However, despite the existence of regulatory frameworks, appearance and use of GMO with the information that is really prevalent in the market without first thoroughly implement the scientific research and public information; it is a huge problem in the contemporary society. Such a problem today handles Macedonia, too.

This problem can easily be avoided by citizens in their awareness of the harmful effects of GM foods, however, a number of businesses in Macedonia, including catering facilities, chains of restaurants and fast food, taking into account the huge profits from cheap price of GM foods cause certain difficulties with their approach to the use of such food without first informing the potential customers (Herceg et al., 2009: 68).

From here, the issue of GMO becomes already a key theme of social debates in Macedonia from different aspects - moral, ethical, religious, scientific, and the like. On one side are those who say the arguments "for", often justifying the use of these products to reduce hunger in the world as well as incentive profits obtained by the low price and low deposits, while on the other side, those who warn of the possible negative consequences for human health and the environment from the use of GM food.

The purpose of this paper is to interpret an analysis of the situation in relation to knowledge and application of GMO food by the hotel facilities with three stars in the turistic town of Ohrid, Macedonia.

LITERATURE REVIEW

Genetically modified organisms - GMO represent organisms in which the genetic material has been altered in a way that is not realized through natural breeding or natural recombining but genetic material changes in the laboratory, with laboratory techniques and methods.

POSITIVE ASPECTS

As the advantages of the use of GMO states to increase the quality and yield of agricultural crop, improving the quality of food products, such as longer life and better resistance during transport, and better resistance to diseases, insects and fungi. GM technology achieves improved tolerance to low temperatures or drought and increased use of currently degraded land through growing crops better suited (Mandić, 2003).

Animals give greater yields and higher production of meat and milk and greater resistance to disease. All these factors affect the cheaper production. Thus the resulting food quality would be enriched with essential amino acids, minerals, vitamins and non-caloric sweeteners. They would also be received and loved nutritional characteristics that directly affect human health, as well as to satisfy the need of many hungry people in the world.

NEGATIVE ASPECTS

The arguments against the use of GMO may already be assumed, based on their frequency and has long been extensive coverage in the media. According to Safe Food Department in the United States as a threat and a negative result from the use of GM food, says imprecise technology where the gene can be accurately taken from the DNA of an organism, but his transfer DNA into another organism may have the effect of there are worrying features of other genes important for the life of the organism. As side effects, where scientists have not yet explored living systems, sufficiently complete to be able to perform DNA operations without creating mutants that can be harmful to the environment and human health, when a farmer will plant GM foods or seeds, all seeds have identical genetic structure, where if they develop fungi, viruses, etc., they will attack everyone else in the field, which can lead to widespread ruin the whole process of harvesting. Also within this framework include the threat of food supply, insects, birds, and wind can transfer GM seeds into neighboring fields, pollen of modified plants can be exchanged with genetically natural crops

and wild types and so all crops, organic and modified, are unprotected from pollution to exchange pollen (Miller et al., 2009: 47).

While, as a danger to human health indicated that no other test - geneticists use material from the body that was never part of the human diet, to change the basic nature of the food that you eat, and therefore no one can she knows that food is safe (Sienkiewicz et al, 2011: 19-21):

- Toxins, genetic engineering can cause unexpected mutations in an organism that can cause new and greater levels of poison in the food.

- Allergic reactions also genetic engineering can produce far unseen and unknown allergens in food,

- Reduce the nutritional value where GMO food can manipulate consumers with extraordinary freshness and juicy appearance, strong red GM tomato could be several weeks old and with very little nutritional value,

- Antibiotic resistant bacteria - genetically modified crops contain genes that are resistant to antibiotics,

- A problem which cannot be traced - without tags, public health organizations are helpless to monitor the problem of any kind to its source,

- Side effects can kill - 37 people died, 1500 were partially paralyzed, 5000 are temporarily unable syndrome that is associated with tryptophan production of genetically created bacteria.

Despite the negative effects on human health GM food has negative consequences on the environment, which is evident through the increased use of the following ingredients:

- Herbicides - scientists estimate that genetically modified plants resistant to herbicides significantly increasing the use of the same, because the farmers knowing that their crops can tolerate the herbicides they use freely,

- More pesticides - producers of modified crops offer custom pesticides.

One of the main problems with genetic engineering is that the process of inserting genes into the DNA of a food plant is random; scientists have no idea where the genes go. This can disrupt the functioning of other genes and create novel proteins that have never been in the food supply and could create toxins and allergens in foods. Also, the genetic modification is a radical technology. Supporters of genetic modification say that the technology is simply an extension of traditional plant breeding. The reality is that genetic engineering is radically different. Traditional plant breeders work with plants of the same or related species to create new plant varieties. Genetic engineers break down nature's genetic barriers by allowing transfers of genes from bacteria, viruses, and even animals—with unforeseen consequences.

DISCUSSION AND RESULTS OF THE RESEARCH

From the survey findings in catering facilities in Ohrid, has been received quality results that represent a further indicator for further testing and setting depth analysis of the real situation in this city about knowledge and use of GMO in hotel facilities.

THE SURVEY IS CONDUCTED ON A TARGET GROUP OF SEVEN HOTELS.

In the category of hotels with 3 stars, the kitchen usually has about 4 employees, who are educated and knowledge of the area and supplies of food and other food supplies and raw materials performs face of already employed. The procurement will always be taken to achieve optimal value between price and quality, but often dominated the importance of product quality. Procurement of plant and animal origin, although sometimes done by small producers, mostly purchased from wholesale suppliers. The menu offered mostly national food and more international and vegetarian food, fish and seafood. Although Macedonian food is well received by tourists, but often require healthy food. As for GM food, most hotels are informed and aware of its importance, but not with legislation for its use, which must be processed.

Through two key issues relating to the use of GMO products will be prove the main thesis of the paper ie “Catering staff must be familiar with the performance of GMO food and get to know their customers well”.

As priority issues that prove the general hypothesis of the above 25 questions, highlights the following two:

- 1) Question no. 19: “If the price of the GMO Food is lower, will continue with its use (without having to notify consumers)? (Pie No. 1)
- 2) Question no. 25: “Are you familiar with the legislation for this kind of food?” (Pie No. 2)

From the above, it can set up the analysis that the hotels and their catering facilities in the city of Ohrid shore of the rank of three stars have initial findings for GMO food, but not in detail familiar with the way of its production, consequences and legislation on their use. Although manufactured in the country are considered as non GMO products are still imported debatable about its origins. It is needed to alluded to and seeks that

all GMO products to be indicated on the declaration of goods that consumers would be confident in the products they buy.

Also, there is insufficient awareness of the real meaning of GMO food, ie its positive and negative effects on human health. They depend on the consumption of the same, but still in the catering business in Ohrid (within the target group), there is a low level of awareness and habit of regarding the need for reporting information of the consumers about the food origin.

CONCLUSION AND FUTURE STUDY

Genetic modification, also known as “genetic engineering,” is a technologically advanced way to select desirable traits in crops. While selective breeding has existed for thousands of years, modern biotechnology is more efficient and effective because seed developers are able to directly modify the genome of the crop.

GMOs are in the news a lot right now, but not because they are new. They have actually been in our food supply for nearly 20 years. Farmers have been using hybridization and mutation breeding of crops to improve their resistance to pests or environmental conditions for decades. But scientists began to sufficiently understand the genetic makeup of certain plants to be able to modify genes that would strengthen the plants’ ability to resist new pests or diseases and thus improve yields so that farmers began planting GMO crops in the mid-1990s.

Within the paper is an analysis of the state of GMO food in the catering part of the Hotels in Ohrid, Macedonia. It is a place in which the GMO is not yet in the upper stage as between the staff of hotels and between customers, too. However, there is a high percentage of lack of information about GMO food and in the future its needed to be replaced. Also, there are very few data between staff of the hotels target group about legislation by the use of GMO food, which is also adopted and implemented Legislative framework in the country.

The Dilemma is about the extent to which citizens of Macedonia are safe despite the existence of legal obligations for labeling products, consumer protection and respect for the standards of the European Union in terms of European legislative frameworks of action for protection and prohibition of GMO in food and catering facilities.

It is necessary as a recommendation for the Hotel management to work on staff training regarding the significance of GMO food and awareness for real notifying customers about the choice and the quality of the food.

In fact, the current situation of low prevalence of GMO in Macedonia should be used as a competitive advantage in terms of tourism. R.

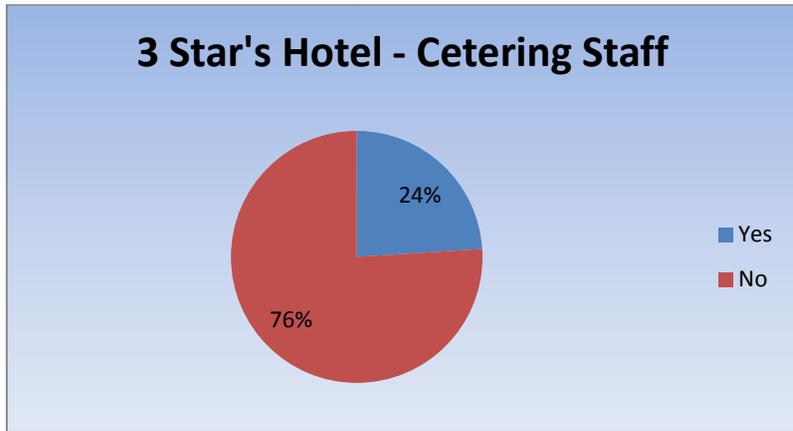
Macedonia as a country, part of the European continent, a region which does not have permission to use and importation of GMO products has enough natural resources to be able to establish organic production of agricultural products rather than GMO. It could thus be more competitive on the European market, and would also satisfy the needs of its population, which will be able to buy healthy and non-GMO products. Although the world's great to talk about this problem, however, with the help of the media, the public should be more informed, which would raise their consciousness and would provide to the Hotel's managers have found their own measures to protect against this GM food.

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APPENDIX 1

Pie No. 1



Pie No. 2

