

**AWARENESS OF THE POPULATION IN BITOLA, R. MACEDONIA WITH THE
ARTIFICIAL SWEETENER ASPARTAME**

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Abstract

Aspartame is an artificial sweetener which is 200 times sweeter than sugar. It is a GM substance, because it is not created naturally, and arises from the combination of two natural amino acids (phenylalanine and aspartic acid) which are produced by two different types of bacteria, one of which is genetically modified to improve the taste. The aim of the research in this paper is to see how the population is familiar with this artificial sweetener, which is used as a substitute for sugar. The research was conducted in Bitola. On a random sample of 100 respondents to a questionnaire method. From the results it can be concluded that 90% of respondents were not aware that there is such a sweetener, and only 10% had heard of this sweetener, and that it is used as an additive in soft drinks, but all respondents (100%) are not aware that it is present in other low-calorie food products without sugar. Comparative analysis of studies by other researchers is made, which describes the adverse effects on the health of animals and humans (brain, nervous system and behavior or cognitive functions). Aspartame is present on the market, but its harmful impact on the population in the municipality of Bitola and beyond in R. Macedonia is not sufficiently informed. From the obtained results of the study we concluded that it is needed more information to the public through education, TV and print media.

Keywords: *GM aspartame, sweetener, health.*

INTRODUCTION

Aspartame was discovered by accident in 1965 by chemist James Schlatter who worked in the company GD Searle, while testing a remedy against gastric ulcer. The term aspartame billed as (E951) is a technical name for the artificial sugar known under the factory names: Nutra Sweet, Equal, Spoonful, Equal-Measure and others. It comprises three chemical components: 40% aspartic acid, phenylalanine, 50% methanol and 10%. It is approved for consumption on July 26, 1974. After an appeal by Dr. John W. Olney- scientist specializing in neurology and Dr. James Turner- advocate of American Institute for Consumer Protection, together with the results

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of the investigation of the research procedures of the company GD Searle led the FDA to withdraw the permission for use of aspartame in December 1974. However, this substance has been approved for use in the food in 1981, and in 1983 in drinks. Later in 1985, the company Monsanto purchased GD Company Searle, which after that is divided into two subsidiary companies, Searle Pharmaceuticals i The NutraSweet Company. Aspartame is the most dangerous substance on the market which is located in the food and drinks, so called sugar free products such as chewing gums and so on. This substance is responsible for over 75% of the report on harmful effects of food supplement, which are submitted to the Office for the Protection of Health (FDA). Many of these reactions are very serious, including loss of consciousness and death, as announced back in February 1994 in the report of the Institute for Health and Health Services (Department of Health and Human Services). Because of the harmful impact on the health of animals and humans, in R. Macedonia, GM food for animals and people, is forbidden by law. But despite this ban on GM products, including aspartame they are present on the market, and awareness of the population with the harmful effects after consuming them is minimal.

MATERIAL AND METOD FOR WORK

As material and method of work in this paper is used the method of questionnaire with a random sample of 100 respondents. The aim is to see whether the general public in Bitola, R. Macedonia is familiar with the existence of the artificial sweetener aspartame. Also, a comparative analysis of scientific studies by other researchers is used, in which are described the harmful consequences for the health of animals and humans.

RESULTS AND DISCUSSION

To determine the familiarity of the population with the artificial sweetener aspartame, was conducted research in Bitola, R. Macedonia, by method of questionnaire. As a sample were taken 100 respondents by random choice. Data are expressed in%. The obtained results are shown in Table 1:

Table 1

Questions	Yes	No
Are you familiar what is aspartame?	10%	90%
Have you ever consumed artificial sweetener aspartame?	10%	90%
Do you know in which drinks is added the sweetener?	10%	90%
Do you know in which foods is added the sweetener?	-	100%
Do you know how to recognize the products that contain the sweetener?	10%	90%

From the obtained data we can conclude that the population in Bitola, has very little knowledge about the aspartame as a genetically modified product. On the question, Are you familiar what is aspartame? only 10% of respondents said they were familiar with, and only 90% said they did not know, and do not know what it is.

Their unfamiliarity with this sweetener can be seen from their answers to the second question: Have you ever consumed artificial sweetener aspartame? which much of the respondents (90%) reported that, if consumed, still do not know which products have the same, and only 10% said they are aware of it and therefore avoid using products that have this sweetener .

Aspartame is present in beverages (non-alcoholic), and in low-calorie sugar-free diet products as a supplement. Therefore, the following two questions from the questionnaire refer to whether people know that drinks and food has the same sweetener. Only 10% of respondents said that they are aware of the presence of this sweetener in soft drinks, but none of the respondents

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are not aware of the presence of the same in food. Namely, all respondents (100%) reported that they do not know which foods have the same sweetener.

Identical responses were received, and to the last question with which the respondents were asked to answer whether they know how to recognize the products that contain aspartame sweetener? Identifying products with this sweetener is easily (to product label write-low calorie diet product without sugar), but even though 90% of respondents said that they did not know how to recognize it, and only 10% that can recognize such products .

Aspartame as a sweetener is present in many products, but the results of the survey showed that the population knows very little about it.

In broader terms, research on aspartame are made by its appearance in 1974, and today. The actuality of this genetically modified product is associated with the fact that much of the research that is done on the same indicate the harmful effects from consuming it.

Some of 90 different observed symptoms caused by aspartame that are listed in the report include: headaches / migraines, dizziness, seizures, nausea, numbness, muscle spasms, weight gain, rashes, depression, fatigue, irritability, tachycardia, insomnia , vision problems, including loss of vision, hearing loss, heart palpitations, mixing breathing difficulties, anxiety attacks, slurred speech, loss of taste, tinnitus, dizziness, memory loss, pain in the joints, brain tumors, multiple sclerosis, epilepsy, chronic fatigue syndrome, parkinson's disease, alzheimer disease, mental retardation, lymphoma, birth defects, fibromyalgia, and diabetes. Many of the these reactions are very serious, including loss of consciousness and death, as explained since February 1994, in a report by the Institute for Health and Health Services (Department of Health and Human Services, 1994).

Aspartame is comprised of three chemicals: aspartic acid, phenylalanine and methanol. In the book, a recipe for Nutritional Healing (by James and Fylis Balch), aspartame has been put in the category of "chemical poison."

Russell L. Blaylock (1994), a professor of neurosurgery, at the Medical University of Mississippi, recently published a book where he described in detail the disorders resulting from ingestion of aspartic acid found in the aspartame. 90% of sodium glutamate (monosodium glutamate-MSG) is glutamic acid. Damage that it causes is also documented in this book (natrum

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glutamate, which many of us consume it on daily basis, through Vegeta and similar additives for meals that besides improving their taste at the same time are destroying our nerve cells, because they belong to the group of nerve poisons). Dr. Blaylock in his book with the help of over 500 scientific notes shows how the surplus of excitotoxic amino acids such as glutamic acid and aspartic acid contained in our food, causes serious chronic neurological disorders is a number of other acute symptoms.

One of the most common complaints of people suffering from the adverse effects of aspartame is memory loss. What is ironic here, it is that the company GD Searle ever since 1987 undertook extensive research with the aim to discover resources that need to heal the loss of memory due to damage caused by excitotoxic amino acids (Tollefson L., et.al. 1988).

Excess of phenylalanine in the brain leads to a reduction in the level of serotonin which then causes emotional disorders and depression. It has been proven that the level of phenylalanine in the blood significantly increased in people who use aspartame (Wurtman & Walker, 1987).

Testimony before the US Congress, Dr. J. Luys Elsas showed a case of very high levels of phenylalanine caused by aspartame was recently described in the journal entitled "Aspartame a nightmare." John Cook drank every day 6-8 'diet' - drinks. His symptoms started out as memory loss and frequent headaches. After that, his condition has deteriorated sharply in relation to mood with anger attacks. Results of blood analysis showed the presence of phenylalanine at a concentration of 80 mg / dl. Physical examination showed disturbances in the brain, and brain damage. Once he stop consuming of artificially sweetened drinks with aspartame, his health dramatically has improved (Mullarkey, 1994).

According to the Department of Environmental Protection (EPA), methanol is considered to be so called. "Cumulative" poison because very slowly is eliminated from the body after it is entered. In the human body, with oxidation is decomposed of formaldehyde and formic acid, both of these metabolites are toxic. Formaldehyde is a lethal nerve poison. According to the same organization, one should not enter into his body more than 7, 8 mg / day. One liter of drink which is sweetened with aspartame contains about 56 mg of methanol. So some who drink or eat a little more sweetened with aspartame products can enter to themselves about 250 mg of

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methanol per day, which is 32 times more than what is required by EPA (Woodrow et.al., 1984).

On the other hand, Diketopirorazine (DKP), a byproduct of the metabolism of aspartame, is the cause of brain cancer and. Company GD Searle conducted research on the safety of using DKP. FDA later reveals many experimental errors, some of which are attributed to "poor administration", while the other was "an accidental mixing of animals, animals did not receive the required amount of certain substances, pathological samples lost due to improper handling," and many other errors (FDA Searle Investigation Task Force, 1976).

It also considered that DCM causes uterine polyps, as well as changes in the level of cholesterol in the blood, which is publicly admitted by Dr. Verrett, in 1987, a toxicologist who works for the FDA, in testimony before the US Senate.

CONCLUSION

The research and analysis in this paper show that the awareness of the population in Bitola with this sweetener is on very low level. Based on the data, it can be concluded that:

- 90% of the population in Bitola, are not familiar with Aspartame, while it is a small number of that population (10%) who know about it, that are people who consume organic healthy food;
- From the answers to the second question we can conclude that 90% of the population does not know whether they consumed, such a sweetener;
- From the answers to these questions, it can be concluded that the total number of respondents (100) did not know which product contains this sweetener whether it is a soft drink or a low calorie diet food.

Aspartame is present on the market, but its harmful impact on the population in the municipality of Bitola and beyond in R. Macedonia is not sufficiently informed. From the obtained results of the study we concluded that it is needed more information to the public through education, TV and print media.

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From the analysis of used scientific research can be concluded that aspartame causes, induces or exacerbates many diseases in humans and animals in case you consume this substance, as: brain tumors, multiple sclerosis, epilepsy, chronic fatigue syndrome, Parkinson Alzheimer disease, mental retardation, lymphoma, fibromyalgia and diabetic deformed infants, headache / migraine, dizziness, seizures, nausea, numbness, muscle spasms, increased weight gain, rashes, depression, fatigue, irritability, tachycardia, insomnia, vision problems, including loss of vision, hearing loss, heart palpitations, mixing breathing difficulties, anxiety attacks, slurred speech, loss of taste, tinnitus, dizziness , memory loss, joint pain, including loss of consciousness and death.

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