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К ВОПРОСУ О ПРОБЛЕМЕ ПРИМЕНЕНИЯ ПИЩЕВОЙ ХИМИИ

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Not all food additives used in the industry are well studied. In the last two decades it became clear that saccharin is carcinogen. In 2005 it was declared that food additives are the reason of 0,6-0,8% of cases of the chronic small tortoiseshell. Mankind couldn`t manage without food additives as they are capable to provide 10% of an annual gain of the food without which Earth population simply will appear on the verge of starvation. They have to be accurate about their health.

Three kilograms of chemicals are used by the average person annually. Dyes, emulsifiers, sealant, thickeners are present now everywhere. There is a question: why producers add them in food and how these substances are harmless?

Nutritional supplements — it not the invention of our high-tech century. Salt, soda, spices are known to people from time immemorial. But here original blossoming of their use began after all in the XX century — century of food chemistry.

Having won recognition "improvers" were put on a stream. Sausages became gentle-pink, fruitcakes magnificent not hardening. "Youth" and appeal of products provided additives which use as dyes, emulsifiers, sealants, thickeners, amplifiers of taste and a smell preservatives …They are designated by a letter "E" (an initial letter in the word "Europe"). It isn't necessary to be frightened their presence the majority of names at the correct observance of a compounding of harm to health doesn't bear, exceptions are made only by what can cause individual intolerance in certain people. After the letter followed number. It allows to be guided in variety of additives being according to Uniform European classification a code of concrete substance. For example, E152 — absolutely harmless absorbent carbon, E1404 — starch, and E500 — soda.

The E100-E182 codes designate the dyes strengthening or restoring color of a product. The E200-E299 codes — the preservatives raising a period of storage of products at the expense of protection of them from microbes and bacteriophages. The same group included the chemical sterilizing additives used at maturing of wines, and also disinfecting substances. E300-E399 are the antioxidants protecting products from oxidation. E400-E499 are stabilizers, thickeners, emulsifiers.E500-E599 are pH regulators.E600-E699 are fragrances. Food additives at numbers E700-E899 don't exist yet; these codes are reserved for new substances.

Not all food additives used in the industry are well studied. Typical example — sweeteners, artificial substitutes of sugar: sorbite (E420), aspartam (E951)and others. Long time physicians considered them absolutely safe for health and appointed tothose who suffer diabetes. However, in the last two decades it became clear that saccharin is carcinogen. In any case, laboratory animals consuming it had cancer, however, only if ate saccharin in the volume comparable to their body weight. And here a large amount of sorbite (about 10 grams and more) can cause gastrointestinal insufficiency and be the reason of diarrhea. Besides, sorbite is capable to aggravate a syndrome of the angry thick gut and violation.

The real furor made the report of the British professor Jim Stephenson published in the spring of 2003. Five-year-old twins Michael and Christopher Parker became object of research of scientists from University of Southampton (Great Britain). Within two weeks Michael wasn't allowed to use in Smarty's and Sunny Delight candy food, drinks of red Irn Bru and Tizer color, and also the aerated drinks and other products with chemical additives. Mother of twins Leann Parker so characterized results of experiment: "For the second day I saw changes in Michael's behavior. It became much more obedient, it developed sense of humor, he willingly talks. In the house stress level decreased, in the relations between boys there is less than aggression, they don't fight almost and don't quarrel". Scientists reported about influence of food additives on behavior of teenagers from Australia also. They defined that the propionate of calcium (E282) added in bread as the preserving substance can lead to strong mood swings, violations of a dream and concentration of attention at children.

In April, 2005 the international group of researchers under the leadership of Malcolm Grivs declared that food additives (dyes, seasonings and preservatives) are the reason of 0,6-0,8% of cases of the chronic small tortoiseshell.

In 1907 the employee of Imperial University Tokyo (Japan) Kikunaye Ikeda for the first time received white crystal powder which strengthened flavoring feelings at the expense of increase in sensitivity of nipples of tongue. In 1909th he is patented the invention, and the monosodium glutamate began victorious procession along the world. Now inhabitants of Earth annually consume it in number of over 200 thousand tons, without reflecting on consequences. Meanwhile in special medical literature appears more

and more data that the monosodium glutamate negatively influences a brain, worsens a condition of patients with bronchial asthma, and leads to destruction of a retina of an eye and glaucoma. On a monosodium glutamate some researchers lay blame for distribution of "a syndrome of the Chinese restaurant". Here already some ten years in various corners of the world fix the mysterious disease which nature is still not clear. At absolutely healthy people temperature unexpectedly increases, the person reddens, there are a breast pains. The only thing that unites victims — all of them shortly before an illness visited the Chinese restaurants which cook are inclined to abuse "tasty" substance. Meanwhile, according to WHO data reception more than 3 grams of a monosodium glutamate a day "are very hazardous to health".

Synthetic additives quite often are wrapped in food allergy which is shown in the form of dermatitis. There is nothing strange that any chemical filler, without which the modern food industry is inconceivable, are fraught with allergic reactions, violations of work of a gastrointestinal path. However it is extremely difficult to prove that this or that food additive became an etiology. It is possible to exclude a suspicious product from a diet, then to enter it and to look as it will apprehend an organism, but a final verdict: which substance caused allergic reaction; it is possible only after a series of expensive tests. It won't help the patient, after all next time he can buy a product on which this substance simply won't be specified. It is possible only to try to avoid beautiful products of unnatural color with too importunate taste. Producers are perfectly informed on possible risks of application of food additives and go on them quite consciously. The appetizing type of meat products which causes the use of nitrite of sodium (E250 preservative) was spoken much about. Its surplus negatively affects exchange processes, depresses respiratory organs, it has the oncological directed action. And, not to create to itself problems and not to exceed maximum permissible concentration of nitrite of sodium isn't every day sausage, especially smoked enough, and everything will be as it should be. Though food additives may be linked with these diseases and health risks, they also preserve nutrient value by providing vitamins, minerals, and other nutrients to foods such as flour, cereal, margarine and milk which normally would not retain such high levels. Preservatives also reduce spoilage from sources such as air, bacteria, fungi, and yeast.

In the EU it can take 10 years or more to obtain approval for a new food additive. This includes five years of safety testing, followed by two years for evaluation by the European Food Safety Authority and another three years before the additive receives an EU-wide approval for use in every country in the European Union.

The scientist from Saratov developed harmless preservative. The graduate from the faculty of nano - and biomedical technologies, Dmitry Zayarsky confirms that preparation is absolutely not toxic. Thus he allows prolonging a real period of storage of products considerably. For example, the expiration date of sausage products increases to 60-90 days, and sour-milk products – by 3–5 times.

The third part of food made in the world spoils under the influence of microorganisms and mankind already this long ago anxiously a problem of preservation of food. For many centuries mankind anxiously don`t know how to prolong food storage, to keep fresh grown up vegetables and fruit and cooked products. For this reason preservatives and strongly were included for a long time in our life. However, in some cases their efficiency is obviously insufficient. For example, there are some microorganisms which emit toxins not only during life, but also after death. Availability of these toxins in food can lead to serious poisonings and even to anafilakticheskу shock. The pathological state developing at contact of an organism with some alien substances and preparations from which preservatives are created often aren't so harmless to the person.

The young scientist when started working decided to solve these problems.

The pleasant bonus about which the scientist speaks especially, preparation is completely harmless to the person.

"Unlike standardly applied sorbates and benzoates, doesn't react with dyes, turning our food into poison, and it is brought out of an organism within 5-6 hours," - Dmitry emphasizes. Dmitry's development`s the real break in science. We will hope that soon this substance will be patented and will force out from the market harmful additives E. As the scientist notes, the preparation suits both for external, and for internal processing of products: it is possible to add it in structure, to dissolve in water, both to spray and to dip a product in solution, there is a number of variants. It was necessary to get the patent, and then it will be possible to start production. By the way, some enterprises of the food industry and the Saratov medical university already became interested in Dmitry's development. It appears, this preservative can be applied and in medicine.

I think that it`s necessary to take into account and that owing to the psychology of people often can't refuse that is harmful but it is tasty.

In conclusion I want to say today without food additives to mankind not to manage as they are capable to provide 10% of an annual gain of the food without which Earth population simply will appear on the verge of starvation. It is another question that they have to be safer for their health. Health officers of course care of it but also all the rest shouldn't lose vigilance attentively reading that is written on packing.

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