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USE OF FOOD ADDITIVES: CLASSIFICATION AND DANGER (ВИКОРИСТАННЯ ХАРЧОВИХ ДОБАВОК: КЛАСИФІКАЦІЯ ТА НЕБЕЗПЕЧНІСТЬ)

Святелик К. *– здобувач вищої освіти групи ХТ 1/1*

Науковий керівник: Саламатіна О. О., доцент кафедри іноземних мов МНАУ

В статті розкриваються типи та функції харчових добавок, їх вплив на здоров`я людини.

Ключові слова: *харчові добавки, функції харчових добавок, вплив харчових добавок.*

The article reveals the types and functions of dietary supplements, their impact on human health.

Keywords: *food additive, functions of food additives, effects of food additives.*

Although food and nutrition have been studied for centuries, modern nutritional science is surprisingly young. The first vitamin was isolated and chemically defined in 1926, less than 100 years ago, ushering in a half century of discovery focused on single nutrient deficiency diseases. Research on the role of nutrition in complex non-communicable chronic diseases, such as cardiovascular disease, diabetes, obesity, and cancers, is even more recent, accelerating over the past two or three decades [1].

Food additives are chemicals added to foods to keep them fresh or to enhance their colour, flavour or texture. They may include food colourings (such as tartrazine or cochineal), flavour enhancers (such as MSG) or a range of preservatives.

Most food additives are listed on the product label, along with other ingredients, in a descending order by weight (flavours are an exception and do not need to be identified). Sometimes, the additive is spelt out in full. At other times, it is represented by a code number: for example, cochineal may be listed as Colouring (120); sodium sulphite may be shown as Preservative (221) [2].

Functions of Food Additives

- Maintaining product consistency;
- Improving or maintaining nutritive value;
- Maintaining palatability and wholesomeness;
- Improving flavour or imparting desired colour;
- Providing leavening or controlling acidity / alkalinity [3].

Types of food additives

The different types of food additive and their uses include:

- **Anti-caking agents** – stop ingredients from becoming lumpy.
- **Antioxidants** – prevent foods from oxidising, or going rancid.
- **Artificial sweeteners** – increase the sweetness.
- **Emulsifiers** – stop fats from clotting together.
- **Food acids** – maintain the right acid level.
- **Colours** – enhance or add colour.

- **Humectants** – keep foods moist.
- **Flavours** – add flavour.
- **Flavour enhancers** – increase the power of a flavour.
- **Foaming agents** – maintain uniform aeration of gases in foods.
- **Mineral salts** – enhance texture and flavour.
- **Preservatives** – stop microbes from multiplying and spoiling the food.
- **Thickeners and vegetable gums** – enhance texture and consistency.
- **Stabilisers and firming agents** – maintain even food dispersion.
- **Flour treatment** – improves baking quality.
- **Glazing agent** – improves appearance and can protect food.
- **Gelling agents** – alter the texture of foods through gel formation.
- **Propellants** – help propel food from a container.
- **Raising agents** – increase the volume of food through the use of gases.
- **Bulking agents** – increase the volume of food without major changes to its available energy.

Effects of food additives

Some people are sensitive to particular food additives and may have reactions like hives or diarrhoea. This doesn't mean that all foods containing additives need to be automatically treated with suspicion. All foods are made up of chemicals and food additives are not always 'less safe' than naturally occuring chemicals.

Many of the food additives used by the food industry also occur naturally within foods that people eat every day. For example, MSG is found naturally in parmesan cheese, sardines and tomato in significantly greater quantities than the MSG present as a food additive. People with food allergies and intolerances are also often sensitive to chemicals found naturally in certain foods, such as nuts or shellfish.

Many people view food additives as a major food threat. However, in terms of health risk, food additives would come in at the end of the line, after food-borne microorganisms (like salmonella), inappropriate hygiene and eating habits, environmental contaminants and naturally occurring toxins.

There is a common misconception that processed foods automatically contain food additives. Foods like long-life milk, canned foods and frozen foods are all processed, yet none of them need extra chemicals.
If you are unsure whether or not a product contains an additive, check the label. However, some listed ingredients may contain food additives without mentioning them on the label. For instance, 'margarine' might be a listed ingredient and margarine contains food additives [2].

Some food additives that may cause problems for some people include:

- **Sodium nitrites**. These additives help stabilize, color and flavor meat, and prevent harmful bacterial growth. But when meat is heated at high temperatures or combined with stomach acid, sodium nitrite produces nitrosamines. Nitrosamines are linked to an increased risk of pancreatic and colorectal cancer.
- **Sulfites**. Sulfites are a preservative many people are sensitive to that can severely aggravate asthma. Their use on fresh fruits and vegetables is banned in the United States, but sulfites are present in other foods. (Avoid products listing sulfur dioxide, potassium bisulfite, sodium bisulfite or sodium sulfite on the label.)
- **Trans fats.** The FDA has banned trans fats in food because they increase the risk of heart disease. Manufacturers use these partially hydrogenated oils to improve the shelf life and consistency of cookies, crackers and other packaged foods.
- **Monosodium glutamate (MSG).** This enhances flavor and texture in Asian foods, in soups and in other processed foods. People sensitive to MSG can experience nausea, breathing problems and other reactions. MSG adds extra sodium that can also elevate blood pressure. (MSG occurs in some foods naturally; any added by a manufacturer is labeled monosodium glutamate).

- **Tartrazine.** These artificial coloring agents, used in candy and cereal, can cause severe allergic reactions in those with asthma. Some research also suggests a link with hyperactivity in children, but this has not been proven [4].

Food additives have been, are and will be used, they are beneficial. The main thing is to read the labels to avoid using harmful additives.

Література:

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