

LEGISLATIVE ASPECTS REGARDING FOOD ADDITIVES

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RESEARCH ARTICLE

Abstract

The increase in the demand for food products, in general and in particular for processed food products over time as a result of the numerical growth of the population and the diversification of the products that the consumer has at hand, has determined worldwide the taking of measures in this sense. One of these measures refers to food additives which, in order to be used in food production, required the regulation of their use in such a way that they do not represent a danger to the health of the consumer. The legal aspects regarding the name, use and quantities provided are stipulated in a series of normative acts.

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INTRODUCTION

Food additives are substances used for a long time in food preparation. Contrary to popular opinion, additives are not an invention of the modern world, but in recent years, as market demands have changed, their use has been expanded and the number of permitted additives has increased. The modern consumer wants increasingly organoleptically appealing products (flavored, very sweet or salty, intensely colored) and wants their shelf life to be long, leading to the widespread use of additives and the need to legislate their use in such a way as to ensure consumer safety. [<https://insp.gov.ro/download/cnmrmc/Guides/Hygiene%20Food%20and%20Nutrition/Guide-Food-Additives.pdf>]

Food additives are substances that are not consumed as such, they are used for technological purposes and can be natural or chemical.

The term food additive is defined in different ways, but all of them have practically the same meaning.

As a reference point, the Codex Alimentarius defines the food additive as any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing,

packaging, transport or holding of such food results, or may be reasonably expected to result, (directly or indirectly) in it or its by-products becoming a component of or otherwise affecting the characteristics of such foods. The term does not include "contaminants" or substances added to food for maintaining or improving nutritional qualities [https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FStandards%252FCXS%2B1-1985%252FCXS_001e.pdf] or food additives are substances that are not usually consumed as food on their own, but are deliberately added to food for technological purposes for their preservation. Are not considered food additives the substances used to give an aroma and/or taste or for special nutritional purposes, such as salt substitutes, vitamins and minerals. In addition, substances considered to be foodstuffs which may fulfill a technological function, such as sodium chloride or saffron for coloring, as well as food enzymes, should not fall within the scope of this Regulation. However, preparations obtained from food products and other material sources, which are intended to obtain a technological effect in the final food product and which are obtained by the selective extraction of components (e.g. pigments) regarding the nutritional and aromatic components are

considered additives. [pt. 5 Regulation 1333/16-Dec-2008 on food additives]

MATERIAL AND METHOD

The materials used in writing this paper are composed of legislation and web sites. The methods used are legal, namely the formal method, the comparative method, the logical and the analytical method. The use of these methods has the role of performing a systematic analysis of the information from the studied sources in order to elaborate the points of view and the conclusions.

RESULTS AND DISCUSSIONS

The free circulation of safe and healthy food products is an essential aspect of the internal market and contributes significantly to the health and well-being of citizens and their social and economic interests.

Food additives must be safe when used, there must be a technological necessity for their use, they must not mislead the consumer and their use must bring a benefit to the consumer. Misleading consumers includes matters related to the nature, freshness, quality of ingredients used, the extent to which a product or production process is natural, or the nutritional quality of the product, including but not limited to fruit and vegetable content.

The safety of food products is the objective of all normative acts in this field.

Thus, for a food product to be considered safe or unsafe for the consumer, it is mandatory to take into account the normal conditions of food use by the consumer at each stage of production, processing and distribution, as well as the information provided to the consumer, including the information on the label or other general information made available to the consumer, regarding the avoidance of specific effects harmful to health, determined by a certain food or a category of food and must be taken into account not only the probable immediate or short-term and long-term effects of that food on the health of the person who consumes it, but also the effects on future generations, the possible cumulative toxic effects, as well as the special

sensitivity regarding the health of a specific category of consumers when the food is intended for that category of consumers. If a food is unfit for human consumption, it must be taken into account if the food is unacceptable for human consumption in accordance with its intended use, for reasons of contamination determined by external factors or not, of alteration, damage or degradation. If an unsafe food is part of a lot, lot or shipment of food of the same class or with the same description, it is assumed that all the food in that lot, lot or shipment is also unsafe, unless, following a detailed assessment, there is no evidence to indicate that the rest of the lot, batch or shipment is also unsafe. [Law 150/2004].

Regulation 1129/11/2011 amending Annex II to Regulation (EC) no. 1333/2008 of the European Parliament and of the Council establishes the list of food additives that are allowed to be used within the European Community. Annex II part A regulates the name of the food additive and its E number, the food products in which it can be added, the conditions under which the food additive can be used, the restrictions on the sale of the food additive directly to the final consumer, general provisions on food additives and the conditions of their use. Annex II part B regulates the categories of additives that can be used in food. Thus, we have the following categories: 1. *COLOURING MATTER* - E100/curcumin; E101/riboflavins; E102/tartrazine; E104/quinoline yellow; E110/sunset yellow FCF/orange yellow S; E120/cochineal, carminic acid, carmine; E122/azorubine, carmoisine; E123/amaranth; E124/ponceau 4R, red cochineal A; E127/erythrosine; E129/red allura AC; E131/patent blue V; E132/indigotine, indigo carmine; E133/brilliant blue FCF; E140/chlorophylls and chlorophyllins; E141/copper complexes of chlorophylls and chlorophyllins; E142/green S; E150a/simple caramel (the term caramel refers to products of a more or less intense brown color, which are intended for use as colorings, does not correspond to the aromatic sugary product obtained by heating sugars and which is used for flavoring food, confectionery, pastry, alcoholic beverages); E150b/caustic sulphite caramel; E150c/ammonia caramel;

E150d/caramel with ammonium sulphite; E151/brilliant black BN, black PN; E153/vegetable charcoal; E155/brown HT; E160a/carotenes; E160b/annatto, bixin, norbixin; E160c/red pepper extract, capsanthin, capsorubin; E160d/lycopene; E160e/beta-apo-8'-carotenal (C 30); E/161b lutein; E161g/canthaxanthin - is used in medicinal products, in accordance with Directive 2009/35/EC and is not allowed to be used in dairy products and analogues, unflavored pasteurized and sterilized milk (including UHT), unflavored fermented milk products, including unflavored natural whipped milk (except sterilized whipped milk) not heat-treated after fermentation, unflavored fermented milk products, heat-treated after fermentation, flavored fermented milk products, including heat-treated products, dehydrated milk defined according to Directive 2001/114 /CE [Directive 2001/114/CE/20-dec-2001], cream and powdered cream, unflavored pasteurized cream (with the exception of low-fat cream), unflavored cream-based products fermented with live ferments and substitute products with a fat content of less than 20%, cheese and cheeses, ripened cheese, edible cheese rind, whey cheese, processed cheese, analogues of dairy products, including preparations for whitening drinks as well as a series of other products mentioned in Part D and E of [Regulation 1129 /11-nov-2011 amending Annex II to Regulation (EC) no. 1333/2008 of the European Parliament and of the Council establishing a Union list of food additives]; E162/beet red, betanin; E163/anthocyanins; E170/ calcium carbonate; E171/titanium dioxide; E172/iron oxides and hydroxides; E173/aluminium; E174/silver; E175/gold; E180/ Lithol Rubine BK; 2. *SWEETENERS* - E420/sorbitols; E421/mannitol; E950/acesulfame-K; E951/aspartame; E952/cyclamates; E953/ isomalt; E954/saccharins; E955/sucralose; E957/thaumatococin; E959/neohesperidin DC; E961/neotame; E962/aspartame-acesulfame salt; E965/maltitol; E966/lactitol; E967/xylitol; E968/erythritol; 3. *FOOD ADDITIVES, OTHER THAN COLORING AND SWEETENERS* - E170/ calcium carbonate; E200/sorbic acid; E202/potassium sorbate; E203/calcium

sorbate; E210/benzoic acid (benzoic acid may be present in certain fermented products resulting from a fermentation process that respects good manufacturing practices); E211/sodium benzoate; E 212/potassium benzoate; E213/calcium benzoate; E214/Ethyl P-hydroxybenzoate; E 215/sodium salt of ethyl p-hydroxybenzoate; E 218/Methyl P-hydroxybenzoate; E 219/sodium salt of methyl p-hydroxybenzoate; E220/sulphur dioxide; E221/sodium sulphite; E222/sodium acid sulphite; E223/sodium metabisulphite; E224/potassium metabisulphite; E226/calcium sulphite; E227/calcium acid sulphite; E228/potassium acid sulphite; E234/nisin; E235/natamycin; E239/hexamethylenetetramine; E242/dimethyl dicarbonate; E249/potassium nitrite; E250/sodium nitrite; E251/sodium nitrate; E252/potassium nitrate; E260/acetic acid; E261/potassium acetate; E262/sodium acetates, E263/calcium acetate; E270/lactic acid; E280/propionic acid; E281/sodium propionate; E282/calcium propionate; E283/potassium propionate; E284/boric acid; E285/sodium tetraborate (borax); E290/carbon dioxide; E296/malic acid; E297/fumaric acid; E300/ascorbic acid; E301/sodium ascorbate; E302/calcium ascorbate; E304/esters of ascorbic acid with fatty acids; E306/extract rich in tocopherol; E307/alpha-tocopherol; E308/gamma-tocopherol; E309/delta-tocopherol; E310/propyl gallate; E311/octyl gallate; E312/dodecyl gallate; E315/erythorbic acid; E316/sodium erythorbate; E319/tertiary butylhydroquinone (TBHQ); E320/butylhydroxyanisole (BHA); E321/butylhydroxytoluene (BHT); E322/lecithin; E325/sodium lactate; E326/potassium lactate; E327/calcium lactate; E330/citric acid; E331/sodium citrates; E332/potassium citrates; E333/calcium citrates; E334/tartaric acid (L(+)-); E335/sodium tartrates; E336/potassium tartrates; E337/sodium potassium tartrate; E338/phosphoric acid; E339/sodium phosphates; E340/potassium phosphates; E341/calcium phosphates; E343/magnesium phosphates; E350/sodium malates; E351/potassium

malate; E352/calcium malates; E 353/metatartaric acid; E354/calcium tartrate; E355/adipic acid; E356/sodium adipate; E357/potassium adipate; E363/succinic acid; E380/triammonium citrate; E385/disodium calcium ethylenediaminetetraacetate (disodium calcium EDTA); E392/rosemary extracts; E400/alginate; E401/sodium alginate; E402/potassium alginate; E403/ammonium alginate; E404/calcium alginate; E405/propane-1, 2-diol alginate; E406/agar; E407a/processed Eucheuma seaweed; E407/carrageenan; E410/carob seed gum; E412/guar gum; E413/tragacanth, etc.

Annex II part C defines the groups of additives and divides them into four groups, each group having a certain category (group I includes the E number, the name and the specific maximum concentration that can be used; group II includes the quantum satis authorized food colorings; group III includes food colorings with a combined maximum limit and group IV includes polyols with a specific name for each.

Order 295/2002 is the normative act that regulates [Order 295/2002 for the approval of the Norms regarding food additives intended for use in food products for human consumption] at the national level the rules regarding food additives intended for use in food products for human consumption. According to it, only those food additives included in the regulated lists can be used in the manufacture or preparation of food products and only under the conditions of use mentioned in these lists. The use of food additives can only be considered if it is demonstrated that the proposed use of the additive entails demonstrable advantages for the benefit of the consumer, i.e., evidence for which the word "necessity" is regularly mentioned must be provided. The use of food additives must serve one or more indicated objectives (ie to preserve the nutritional quality of the food product, a deliberate reduction of the nutritional quality of the food product is justified only if the food product is not an important element in a normal diet, or if the additive is necessary for the production of food intended for groups of consumers with special nutritional needs; to provide the necessary ingredients or constituents for the manufactured food

products, intended for groups of consumers with special nutritional needs; to improve the preservation or stability of a food or to improve its organoleptic properties, provided that it does not alter the nature, substance or quality of the food in order to deceive the consumer and assist in the manufacture, processing, preparation, treatment, packaging, transport or storage of food, provided that the additive is not used to hide the effects of the use of raw materials defective or undesirable methods (including unhygienic) during any of these activities and only if these objectives cannot be achieved by other economically and technologically usable means and do not present a risk to the health of the consumer.

Regulation 1130/11-Nov-2011 [Regulation 1130/11-Nov-2011 amending Annex III to Regulation (EC) No. 1333/2008 of the European Parliament and of the Council] amends Annex III of Regulation No. 1333/2008 which established the Union lists of authorized food additives and the conditions for their use in food enzymes, in food flavors and in nutrients or their categories. The purpose of using these food additives is to fulfill a technological function in food additives, enzymes, flavors or nutrients. The version of Regulation no. 1333/2008, as it was adopted, is no longer in force today, undergoing a series of changes, the last one taking place in October 2023 through Regulation 2108/06-oct-2023 amending Annex II to Regulation (EC) no. 1333/2008 of the European Parliament and of the Council and of the annex to Regulation (EU) no. 231/2012 of the Commission regarding nitrite (E 249-250) and nitrate (E 251-252) food additives and by Regulation 2379/29-Sept-2023 amending Annex II to Regulation (EC) no. 1333/2008 of the European Parliament and of the Council and of the annex to Regulation (EU) no. 231/2012 of the Commission regarding the stearyl tartrate (E 483) food additive, the latter applying from 04/23/2024.

CONCLUSIONS

Food additives are substances used for a variety of reasons - such as preserving, coloring or sweetening food.

The free circulation of safe and healthy food products is an essential aspect of the internal market and contributes significantly to the health and well-being of citizens, as well as to serving their social and economic interests.

Taking into account the definition given by Codex Alimentarius, food additives are added with a technological purpose to food products, having a role of technological adjuvant and/or specific ingredient.

The use of food additives is justified only when such use has an advantage, does not pose a risk to the health of consumers and does not mislead the consumer.

All food additives that are subject to legal provisions must be used in good manufacturing conditions, taking into account the amount of additive added to food, which should be limited to the lowest possible level and the amount of additive that becomes a component of food as a result of its use in the manufacture, processing or packaging of a food to be as low as possible.

The main reason why food additives are used on a large scale is the benefit they bring to the properties and preservation of products.

REFERENCES

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