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FOOD ADDITIVES: IMPORTANT PART OF FUNCTIONAL FOOD

Samarkand-2016

Main characteristics and classification of food additives:

- antioxidants,
- food colouring,
- flavours,
- flavor enhancers,
- stabilizers,
- sweeteners

INTRODUCTION

Functional Food Science in Europe (FUFOSE)

a working definition of functional food:

a food that beneficially affects one or more target functions in the body beyond adequate nutritional effects in a way that is relevant to either an improved state of health and well-being and/or reduction of risk of disease

Practical examples of a functional food:

- • a food to which a component has been added (e.g. a spread with added phytosterols);
- • a food from which a component has been removed or reduced (e.g. a yogurt with reduced fat);
- • a food in which one, or several components, have been modified, replaced or enhanced to improve its health properties (e.g. a juice drink with enhanced antioxidant content, a yogurt with added prebiotic or probiotic).

- The most known food additives are differ antioxidants, bulking agents, food colouring, flavours, stabilizers, sweeteners and the aim of this review is shortly desrcibe main their characteristics and effects on human organism.

ANTIOXIDANTS

glycosides

flavanones and flavones

genistein, daidzein, glycitein

butylated hydroxyanisole (BHA)

butylated hydroxytoluene (BHT)

Sweeteners

Aspartame

Advantame

Steviol glycosides

Acesulfame potassium

Calcium saccharin

Erythirol

Hydrogenated starch hydrolysates

etc.

Stabilizers

Agar

Pectin

Acetyl

Alginate

Carrageen

Gelatin

Cellulose or cellulose derivatives

Guar gum

BULKING AGENTS:
Content of Starch in different Plants

Name of plant	Part of plant	Content of starch	Content of sugar
Typha latifolia	dried rhizome	58 % (25-58%)	10%
Cetraria islandica	Vegetation part	Near 44% of lichen	-
Glyceria	weevil	75%	-
Zea mays L.	seeds	71%	-
Artocarpus altilis	dried pulp	80 % (60-80%)	14%
Nymphaea alba	rhizome	40%	20,00%
Avena	grain	60%	-
Butymus umbellбtus	rhizome	60%	-
Trapa natans and Trapa bispinosa	nut	55%	-
Ipomoea batatas L.	tubers	72%	-
Sorghum	-	74%	-
Manihot	-	77%	-
Pisum	grain	40%	-
Hordeum L.	grain	75%	-
Solanum tuberosum	tubers	82%	-
Oryza	grain	89%	-
Secale	grain	72%	-
Triticum L.	grain	74%	-
Althaea officinalis L.	roots	37%	10%
Sagittaria sagittifolia L.	tubers	35%	

Color additives

FD&C Blue Nos. 1 and 2, FD&C Green No. 3, FD&C Red Nos. 3 and 40, FD&C Yellow No. 5 (tartrazine) and No. 6, Orange B, Citrus Red No. 2, annatto extract, beta-carotene, grape skin extract, cochineal extract orcarmine, paprika oleoresin, caramel color, fruit and vegetable juices, saffron (Note: Exempt color additives are not required to be declared by name on labels but may be declared simply as colorings or color added)

Emulsifiers

- Soy lecithin, mono- and diglycerides
- egg yolks
- polysorbates
- sorbitan monostearate

CONCLUSIONS

- The review demonstrates that nowadays is presented many differ plants sources of food additives with natural origin and also artificial food additives. However, the review points out a series of aspects which warrant attention e.g. that many substances have not been re-assessed for many years, although new data are accumulating in the scientific literature and in certain cases calls for a new assessment of their effects on human health.

- It is recommended that a mechanism be put in place in EU, which ensures a systematic, periodic review of all permitted food additives. In the meantime it is suggested to use the data in the present review as help for to know common situation with food additives as some part of functional food system.

Thank you for your attention!