Natural Antioxidants and their Relationship to Health

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Editorial

Natural antioxidants

Generally, antioxidants have two definitions, broadly defined as “all constituents that inhibited oxidation reactions, regardless of the mechanism, and closely described as “the compounds that disturb the lipid oxidation which caused by the free-radicals chain reaction and those that scavenge singlet oxygen atoms” [1]. Recently, antioxidants concerned much attention and interest. Several researches have been focused on new sources of natural food, which contains antioxidant compounds depends on the importance of antioxidants as base of healthy diet. Tocopherols consider one of the communal antioxidants in some food. Information reported that BHA and BHT might be poisonous, and the higher costs of industrial processing and lower productivity of antioxidants from natural sources such as tocopherols, with the increasing of consumers awareness with regard to food additives safety, all these reasons created a strong need for recognizing alternative natural and possibly harmless sources of food antioxidants [2,3]. The trail to use the natural antioxidants instead of the synthetic one might pave the way for new researches to utilize the benefits and characteristics of natural antioxidants such as solubility in both oil and water, of interest for emulsions, in food systems. Commonly, some antioxidants especially that extracted from spices and herbs (oregano, thyme, marjoram, lavender, rosemary) have limited applications in spite of fact that they have high antioxidant effectiveness, also may affect the food flavor, and deodorization steps are compulsory [4]. It is important to be assure that “antioxidant is a reductant factors, but a reductants is not necessarily as antioxidant [5]. So, it must clear to know the difference between the term reduct and comparison between the vital terms related to oxidation and reduction [5]. Significantly, the antioxidants term refers to any substances that that have protection behaviors to delays or prevents oxidation of that substrate when present at low concentrations compared with those of anoxidizable substrates [6]. Reactive species known as pro-oxidants and definite as a toxic materials that can cause oxidative changes to lipids, proteins and nucleic acids, resulting in various pathologic events and/or diseases [5]. Through these definitions highlighted that the importance of antioxidant is appear to be the ability to inhibit the free radicals chain reaction. This is necessary for high quality and stability in food systems and for health prefferment in vivo. During the last years, several researches have been widely studied on use of natural antioxidants and natural products, in view of the focusing on the generation by the use of synthetic antioxidants [7–8]. The natural antioxidants refers to that constituents which found naturally in and can be extracted from plant or animal tissues and those which may be formed as a consequence of cooking or processing plant or animal components for food [9]. Natural antioxidants almost found in all plants, microorganisms, fungi, and even in animal tissues [10]. As foods are extremely complex systems it is very difficult to determine the impact of each antioxidant compound individually. So there are many assays available to measure the antioxidant capacity of a food system. For example used of these is the (DPPH) 2, 2-diphenyl-1- picrylhydrazyl, β-Carotene bleaching assay (BCB) and reducing power.

Antioxidants and health

Medicinal plants or herbs products were used worldwide for thousands of years because of their health benefits (anti-inflammatory, antioxidant, antibacterial, digestive, antispasmodic, cholagogue, carminative, diuretic, hypolipidemic, sedative, enhancing the function of the immune system as well as anticancer, antitumor activity, etc.) and a key role in avoiding numerous diseases such as cardiovascular diseases, gastrointestinal disorders, inflammatory diseases, and cancer initiation. WHO reported that as many as 80% of the world’s people depend on on traditional medicine for their primary health-care needs [11].

In addition, antioxidants have positive effects on overall human health and even it could prevent and avoid quality degradation

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in food systems. In epidemiological studies showed that, the consumption of high content of antioxidants and polyphenols in fruits and vegetables are inversely related to a person's risk of having a stroke, death from a stroke, the incidence of cardiovascular disease, cardiovascular disease mortality and overall mortality [12].

The health benefits of plant-based antioxidants extend even further. Common medicinal plants and herbs were used in folk medicine because many of them were demonstrated as effective remedies against certain ailments. Whereas they generally consider as the safe source and contain active biological ingredients that have beneficial physiological effects, some plants are safe in modest amounts [13].

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