

ABSTRACT

In the last few years it has been observed that there has been an increase in activity relating to energetic Antioxidants in human health. Many Studies have shown that the consumption of foods with high Antioxidants have a positive correlation with the prevention of serious medical conditions.

Different categories of compounds with antioxidants such as phenolics (phenolic acids, Flavonoids etc.), terpenoids (essential oils, di-terpenes, tri-terpenes) and carotenoids have been detected in different plants. Despite the fact that they have been discovered and studied thousands of Antioxidant bonds in the literature, only a few of them are being used in the food industry today.

The purpose of this paper is the study of physicochemical properties and their synthetic and natural Antioxidants in order evaluate their critical properties; hence finding a group of natural products with potential antioxidants which can be used in food industries.

Initially, the physicochemical properties of synthetic antioxidants, phenolic oxides, flavonoids, essential oils, di-terpenes, tri-terpenes and carotenoids where studied. The physiochemical properties which include: Molecular weight, Free energy (Gibbs), TPSA, ClogP, molar refractivity and critical volume where studied in Silico using the ChemBioDraw Software.

After this process what followed was a Statistical elaboration and comparison of the current data with the SPSS Software. The conclusion of the results was that from all the natural antioxidants, phenolic oxides seemed to be the most promising in the food industry as observations showed many similarities with the existing synthetic antioxidants, in antithesis with carotenoids which show no physicochemical similarities with any of the synthetic antioxidants.