

Nutraceuticals and Nutrition Supplements

July 18-19, 2016 Bangkok, Thailand

Phytochemicals and antioxidant activity of orange fractions (*Citrus sinensis* L)

Zamantha Escobedo-Avellaneda
Tecnologico de Monterrey, Mexico

Orange is the most important citrus specie. It has an external layer or peel composed of flavedo and albedo that surrounds the juice vesicles. These orange fractions contain nutraceuticals effective in the prevention/treatment of chronic diseases. Citrus fruits industry generates a large amount of byproducts that can be used as a source of nutraceuticals and natural food additives. Many studies have shown that nutraceuticals are more abundant in citrus peel than in juice. Although many orange peel phytochemicals have been identified, information on their distribution in flavedo and albedo is incomplete limiting the development of applications for orange byproducts. In this work the vitamin C, phenolics, flavonoids and carotenoid contents and the antioxidant activity (AOA) of juice, flavedo and albedo from Valencia orange harvested in February 2011 were quantified. Flavedo contains 2.5 and 7.6 times higher vitamin C concentrations than juice and albedo, respectively. Flavedo had the highest content of polymethoxylated flavones (235.9 mg hesperidin/100 g) and also of carotenoids (6.2 mg β -carotene/100 g), mostly found as epoxycarotenoids. Albedo was the most important source of total phenolics, glycosylated flavanones (1450.0 mg hesperidin/100 g) and antioxidant activity (14 and 1.4 times more activity than juice and flavedo, respectively). In juice, vitamin C was present only as L-ascorbic acid and most carotenoids as hydroxycarotenoids (70%). Phenolics, hesperidin and total flavonoids concentrations linearly correlated with the antioxidant activity. Information of the distribution of these compounds in orange fractions is very important for their commercial extraction and in the formulation of functional beverages.

zamantha.avella@gmail.com