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Food and health: Nutraceuticals

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The term "nutraceutical", coined in 1989 by Stephen De Felice, put together the two words "nutrition" and "pharmaceutical". The Merriam-Webster dictionary definition is "a food that provides benefits health in addition to its nutritional content". The terms of reference for nutraceuticals are their proven activity and proven efficacy on some clinical conditions. These active substances extracted from plants as phytocomplexes, concentrated and administered in a pharmaceutical suitable form can be considered a promising tool to prevent and support the cure of some pathologic conditions. While it is worldwide recognized that diet and lifestyle are essential to promote and maintain the condition of well-being and nicely-being and prevent the disease onset, it is also widely recognized that wrong dietary habits can lead to the onset of pathological conditions among which the metabolic syndrome is one of the major ones. This syndrome is characterized by cardio metabolic risk factors that include obesity, insulin resistance, hypertension, and dyslipidemia. The proper area of use for nutraceuticals has been set by Ettore Novellino in 2012 by coining the phrase "beyond the diet, before drugs" since they can combine beneficial healthy properties of food extracts with the healing properties of natural active compounds helping to prevent and even to cure some diseases. Focusing on prevention is the key for an effective pro-active medicine approach to healthy lifestyle where nutraceuticals, included in the daily diet, can contribute to lower the risk connected to some lifestyle related diseases and also to reduce the cost of therapy for the National Health Systems.

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Creep-recovery tests of polymers systems

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The cupuassu (*Theobroma grandiflorum* Schum, Sterculiaceae) is a native Amazonian fruit. Its pulp has a pleasant acidic taste and a strong fragrance and is used in candies, ice cream, domestic jellies, and jams. In this work the rheological behavior of the cupuassu fruit pulp, xanthan and guar gums dispersed in the pulp was studied. The experiments were carried out in a Rheometer AR 2000, using cone-plate (2° , 60 mm) geometry. The rheological behavior of xanthan gum in cupuassu fruit pulp was evaluated by means of oscillatory tests in the frequency range of 0.1 to 100 Hz. at temperatures 10, 30 and 50°C. In oscillatory tests all samples behaved as weak gel, with storage module greater than loss module (G'>G"), which increased as the gum concentration increased. In tests of creep of pure cupuassu more elastic behavior showed that the pulp with gums due to the wont of pectin jelling.

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