



Effect of the Addition of Chili Pepper Powder on Vegetable Oils Oxidative Stability

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ABSTRACT

Red chili pepper represents an excellent source of functional bioactive compounds, and its use as food additive could be useful for protecting other products from spoilage. Olive oils show a limited shelf-life due to a progressive quality deterioration linked mostly to oxidation reactions providing a loss of quality in terms of organoleptic and healthy properties. In this work, the addition of red chili pepper powder to virgin, extra-virgin olive and sunflower oils was proved to be effective in improving their stability during 12 months of shelf-life. Oil stability was monitored by employing the Oxitest system, based on accelerating the oxidation process. Three pepper powders of different pungency were added to the virgin olive oil samples with the aim of investigating whether capsaicinoids could be responsible for the observed effects. The strongest effect was recorded when employing the less pungent pepper showing that the protective effect could not be attributed to the capsaicinoids content. Besides, a screening on different oils demonstrated that the less stable samples received a stronger protective effect. The evaluation of a possible dose-effect relation was also carried out pointing out that a threshold dose of about 1 % was required to record an effect. The results suggest potential perspectives in the field of food technology, as addition of a small amount of sweet pepper could be proposed to prolong food shelf-life.

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