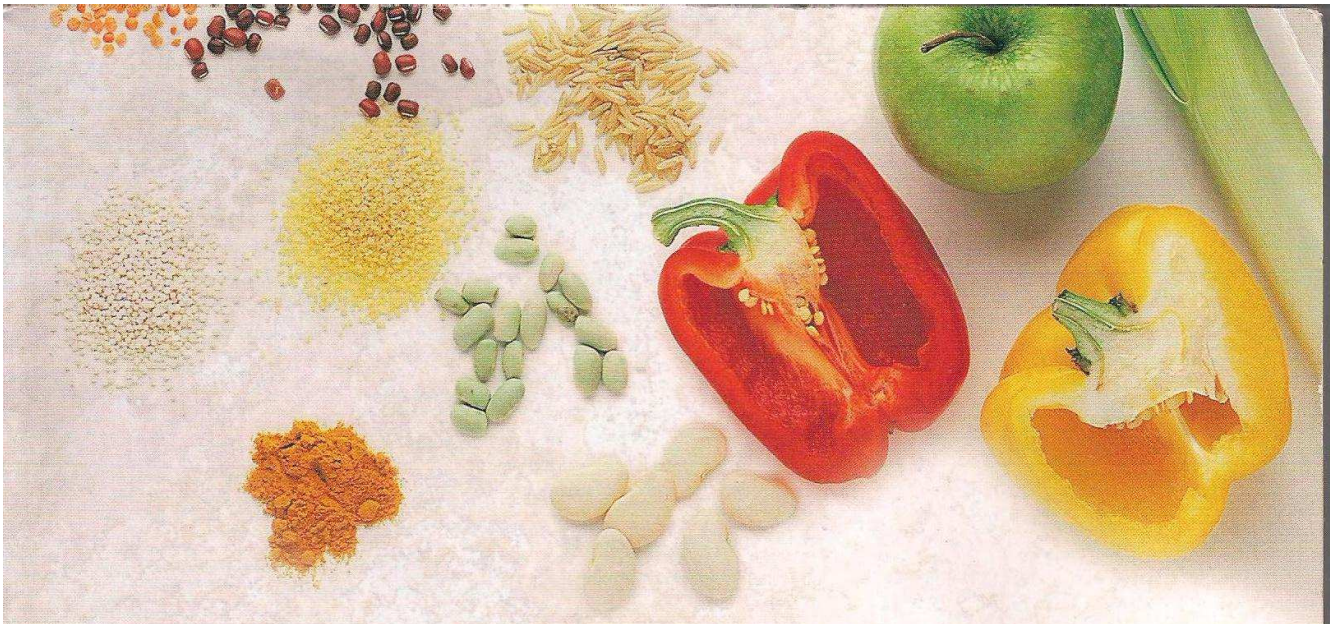

IFT14

ANNUAL MEETING + FOOD EXPO®

JUNE 21–24, 2014

New Orleans Morial Convention Center

New Orleans, LA USA

Program & Exhibit Directory

IN THIS DIRECTORY

Event App

Scan this with your smartphone's QR code reader to download the event mobile app.

Antioxidant activity of monoterpenes and synergist antioxidant effect with BHT

Patricia R. Quiroga, FCA-UNC, IMBIV-CONICET, **Claudia M. Asensio**, FCA-UNC, IMBIV-CONICET, Cordoba, Argentina; Mariana Larrauri, FCA-UNC, IMBIV-CONICET, Maria P. Martin, FCA-UNC, IMBIV-CONICET Cecilia G. Rivero, FCA-UNC, IMBIV-CONICET, Nelson R. Grosso, FCA-UNC, IMBIV-CONICET, Cordoba, Argentina; V. Nepote, FCEFyN-UNC, IMBIV, CONICET.

Synthetic antioxidants are used in many foods. Their health safety is questioned. Monoterpenesobtained from essential oils have shown antioxidant activity. The objective of this study was to evaluate the preserving effect of monoterpenes: thymol, carvacrol, and sabineno hydrate acting as antioxidant additives.

The antioxidant activity of monoterpenes were evaluated in a storage study of roasted sunflower seeds. The following samples were prepared: roasted sunflower seeds (RS-C) as control sampleand roasted sunflower seeds with addition of BHT (RS-BHT) and thymol (RS-T), carvacrol (RS-Car), and sabinene hydrate (RS-S) monoterpenes. Samples were stored during 35 days at room temperature. Peroxide (PV) and *p*-anisidine (AV) values were measured every 7 days. The synergist antioxidant effect between monoterpenes and BHT was evaluatedin canola oilstored during 14 days at 60 ºC. A binary combination of each monoterpene with BHT (0:100, 20:80, 40:60, 60:40, 80:20, and 100:0, monoterpene:BHT) were prepared and added to canola oil at 0.02% w/w. PV value was measured in all canola oil samples.Statistical analysis was performed on the data (ANOVA and Fisher-LSD test).

Chemical indicators increased during storagein roasted sunflower seed samples. After 35 days of storage, PV value was 27.74, 58.05, 89.12, 98.95, and 145.35 meq O_2/Kg in RS-BHT, RS-S, RS-T, RS-Car, and RS-C, respectively. The AV at storage day 35 was 2.71, 5.95, 5.45, 6.48, and 9.05 in RS-BHT, RS-S, RS-Car, RS-T, and RS-C, respectively.

A synergist antioxidant effect was observed in the combinations 20:80 between the monoterpenes thymol and sabinene hydratewith BHT (lowest PV in canola oil samples). Carvacrol:BHT combinations did not havesynergist effect.

Thymol and sabinene hydrate exhibiten better antioxidant effect in roastedsunflower seeds and show synergist antioxidant effectwith BHT in canola oil. Monoterpenes as thymol, carvacrol and sabineno hydrate can be used as naturalantioxidant in food products.

Industry Relevant text:

The shelf-life of a food product could be prolongedby the addition of natural preservatives as monoterpenes or combining these natural antioxidant with BHT to increase the antioxidant property for a synergistic effect. The addition ofmonoterpenes preserve longer the quality of lipid in roasted sunflower seeds during storage.The addition of monoterpenes should be considered for the food industry as an alternative of natural antioxidant for preserving quality properties in food products.