

Effect of Spray-Dried Flavonoid Microparticles on Oxidative Stability of Methyl Linoleate as Lipid Model System

Palma, Manuel

Márquez-Ruiz, Gloria

García, Paula

Holgado, Francisca

Vergara, Cristina

Giménez, Begoña

Robert, Paz

© 2016, AOCS. Microencapsulated quercetin (Q) and epicatechin (E) were prepared by spray-drying using inulin (IN) as encapsulating agent (Q?IN and E?IN) as well as with Capsul (C) as channelizing agent (Q?IN?C and E?IN?C). Microparticles were added to methyl linoleate (ML) and results showed that Q microparticles markedly improved its oxidative stability by increasing the induction period values and delaying the formation of oxidation compounds, as determined by high-performance size-exclusion chromatography, with respect to E microparticles, thus suggesting the importance of flavonoid C-ring substitution. Remaining levels of Q in the lipid system throughout oxidation of ML added with Q microparticles seemed to show two releasing zones: the first one corresponds to the equilibrium zone, when Q released from microparticles replaces Q that is being degraded; the second zone corresponds to the degradation of Q, when the release rate of the encapsulated Q is slower than its degradation rate.