Effect of ?-tocopherol and ?-tocotrienol on the performance of Chilean hazelnut oil (Gevuina avellana Mol) at high temperature

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The high temperature antioxidant efficiency of ?-tocopherol, ?-tocotrienol and a mixture of both on hazelnut oil were evaluated. Crude hazelnut oil (HZO), crude hazelnut oil treated with alumina (THZO), as well as three samples of THZO to which 150 mg kg-1 of ?-tocopherol, 140 mg kg-1 of ?-tocotrienol or a mixture containing 70 mg kg -1 of ?-tocopherol and 70 mg kg-1 of ?-tocotrienol, were added and submitted to thermal treatment at 180°C for 18 h. The addition of tocols to THZO decreased the formation of polar compounds and increased its oxidative stability in all the systems studied. However, ?-tocopherol showed a higher antioxidant capacity than ?-tocotrienol at high temperature. In addition, ?-tocotrienol showed a more rapid degradation rate than ?-tocopherol under the conditions studied.