Abstract
Olive cake, a by-product of the olive oil industry, was characterized through a drying process, where the influence of air-drying temperature on physicochemical properties and antioxidant activity was investigated. Comparison of fresh and dehydrated olive cake showed that drying caused mainly crude protein denaturation. Crude fiber content increased slightly during drying and may have undergone some alterations in its structure due to Maillard reactions. Fatty acid analysis revealed olive cake to be especially rich in oleic acid. Fatty acids composition did not significantly change. Ash content also varied slightly but may be considered practically unchanged. Potassium and sodium were respectively the most and the least abundant minerals found in olive cake. Total phenolic content showed a direct relationship to DPPH radical scavenging activity. Overall antioxidant activity, highest in fresh olive cake, was affected by air-drying temperatures being more evident at 90°C. Vitamin E showed an increasing trend at all drying temperatures. According to this investigation, convective dehydration can produce a dried olive cake that can be used as a raw material for many processing industries (e.g. food and cosmetic) and would also contribute to minimize environmental impacts of this agro industrial waste.