Antioxidant Potential of Olive Oil Flavoured by Golden Berry

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Olive oil was aimed to be flavoured by Golden Berry fruits to manipulate and to suppress its taste for a group of consumers who cannot use olive oil in their diet due to its strong flavour. By the way it was also examined to determine its antioxidant potential to figure out health beneficial effect, since reports revealed high correlation with antioxidant activity and its favourable influence on human health. For this purpose olive fruits belonging to Memecik cultivar was harvested. Before oil production, physical properties of fruit were specified. Oil production was carried out depending on the created experimental design according to central composite design as a function of interested factors including temperature, time and golden berry amount. As a flavour agent dried golden berry fruit was used and it was mixed with olive paste in malaxor and kneaded together.

Total carotenoid, total chlorophyll, total phenolic content were determined and as an indicator DPPH free radical scavenging activity method was used to figure out antioxidant potential of oil samples. Interested response was optimized using response surface methodology.

Amount of total carotenoid and total chlorophyll in oil samples were found to vary in the range of 0.18-0.30 (mg/kg oil) and 0.21-0.38 (mg/kg oil), respectively. Total phenolic content changed from 275 (mg GAE/kg oil) to 651 (mg GAE/kg oil) depending on malaxation conditions and golden berry amount. Oil samples displayed inhibition activity, being more than 50% which was in the range of 65.09-87.93 (%).

To obtain high antioxidant activity from olive oil flavoured by golden berry, 20 min malaxation at 30°C was found to be enough when olive paste was mixed with dried berries at 1.060 (%) w/w.
Keywords: Golden berry, malaxation, flavoured olive oil, antioxidant activity, response surface method (RSM).