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ABSTRACT

The oil quality, fatty acid composition, tocopherol contents, and phenolic compounds of oven- and microwave-roasted seeds from three different poppyvarieties (blue, yellow, and white) were investigated. The quantity, acidity, unsaponifiable matter, peroxide, and saponification values of oilwere generally higherin roasted seeds compared to thoseinraw poppy seeds (control). Total phenolics, flavonoids, anthocyanin contents, and antioxidant activity of roasted seeds were less than those of the control. Roasting decreased fatty acid contents including linoleic acid in blue, yellow, and white seeds and its contents remained 57.91, 61.91, and 64.83% incontrol oil (oil from raw seeds)but decreased to57.23, 60.78, and 64.11% in oven-roasted and 56.97, 60.08,and 60.84% in microwave-roasted seedoil, respectively.The tocopherol (α, β, γ, and δ) contentsalsodecreasedafter roastingandβ and γ-types predominated.The major phenolic compoundswerevanillic, *p*-hydroxybenzoic, ferulic, *p*-coumaric,cinnamic,and protocatechuic acids. Thevanillic acid content rangedfrom 64.38-71.17mg/100g inraw seed, 41.86-49.76 mg/100g inoven-roasted, and 43.66-56.71 mg/100gin microwave-roastedseed. The current study revealed that poppy seeds and their oilhave excellent nutritional qualitiesthat are significantly reduced after roasting.

Key words:*Papaver somniferum* L., oven and microwave roasting, poppy seed oil quality,bioactive compounds, fatty acid composition