

عنوان مقاله:

Pomegranate (*Punica granatum* L.) seed: A comparative study on biochemical composition and oil physicochemical characteristics Biochemical composition of pomegranate seed oil

محل انتشار:

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خلاصه مقاله:

The pomegranate seeds of four Iranian commercial varieties (Abanmahi (AB), Malas (MS), Pust Sefid (PS) and Shahvar (SH)) were evaluated in terms of some quality properties including protein, oil, dietary fiber, mineral contents and fatty acid composition. Physicochemical properties and antioxidant activity of pomegranate seed oils (PSOs) were also determined. The oil antioxidant activity was measured by 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging capacity. Results showed that PS had the highest oil (16.9%) and crude fiber (42.4%), and nutritional value (460.7Kcal/100g) among selected varieties. PS had the highest level of phosphorus (2766.3 mg/kg) and magnesium (2052.0mg/kg), while the highest calcium(675.3mg/kg) and potassium (3724.6mg/kg) were related to SH. The main fatty acid identified by gas chromatography was punicic acid ranged from 72.07% for SH to 73.31% for MS ($p<0.05$). The ratios of polyunsaturated/saturated and unsaturated/saturated fatty acids of PSOs were found to be between 9.174 and 9.450, and 10.325 and 10.861, respectively ($p<0.05$). PSOs obtained presented acid (3.78-8.36% punicic acid), peroxide (0.39-0.48meq O₂/kg), iodine (216.9-220.3g I₂/100g) and saponification (179.3-182.5mg KOH/g) values. Also, refractive index at 25°C, viscosity and density of PSOs varied from 1.461-1.527, 0.036-0.063Pa.s and 0.9202- 0.9311g/cm³, respectively. The oil obtained from MS showed the lowest level of ortho-diphenols (ODC) and DPPH radical scavenging capability. The relationship between percentage of remaining DPPH and ODC of PSOs (also illustrated high correlation among all varieties ($R^2 = 0.98$, $p<0.01$)).

کلمات کلیدی:

Pomegranate seed, Fatty acid profile, Oil characterization, Ortho-diphenols, DPPH radical scavenging

لینک ثابت مقاله در پایگاه سیویلیکا:

