

ORIGINAL PAPER

## Characterization of the Seed Oil and Meal from *Monechma ciliatum* and *Prunus mahaleb* Seeds

Abdalbasit Adam Mariod . Kawthar Mahmoud Aseel .  
Ali Abdalgadir Mustafa . Siddig Ibrahim Abdel-Wahab

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**Abstract** The oil and meal from *Monechma ciliatum* (black mahlab) and *Prunus mahaleb* (white mahlab) seeds were characterized for their physicochemical properties. The oil content was found to be 30.95 and 13.15% in white and black mahlab seeds, respectively. The refractive indices of white mahlab oil (WMO) and black mahlab oil (BMO) were 1.475 and 1.470, and specific gravities were 0.8511 and 0.8167 g/cm<sup>3</sup>, respectively. Saponification values were 184.23 and 180.3 mg KOH/g, peroxide values were 2.54 and 4.43 meq/kg, and unsaponifiable matter was 0.92 and 0.66%, respectively. The major fatty acids were palmitic 4.5%, stearic 16.0%, oleic 47.3%, and linoleic 31.4% in BMO, while in WMO they were palmitic 5.7%, oleic 45.0%, and linoleic acid 47.0%. A moderate amount of tocopherols were found at 45.2 and 28.5 mg/100 g in BMO and WMO, respectively. Protein content was found to be 21% in black and 28% in white mahlab seeds. The total amount of amino acids in black and white mahlab seeds was found to be 783.3 and 1,223.2 mg/g N, respectively. The concentration (on ppm dry-weight basis) of major elements (Ca, K, and Mg) and of minor elements (Al, Pb Ni, Mn, Cu, Cr, Co, and Fe) was also determined in the meals.

**Keywords** Amino acid \_ Fatty acid \_ ICP-MS \_ Mineral elements \_ *Monechma ciliatum* \_ Physicochemical properties \_ *Prunus mahlab*