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EFFECT OF DIFFERENT DRYING METHODS ON NUTRITIONAL COMPOSITION, ANTIOXIDANT ACTIVITY AND PHYTOCHEMICALS OF *Enhydra fluctuans*

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ABSTRACT

Enhydra fluctuans is a common edible plant, showcases diverse biological advantages. This research investigates the effects of various drying methods (sun, oven, cabinet, vacuum, and freeze) on nutritional, antioxidant, and phytochemical attributes. By comparing outcomes with fresh leaves, we utilized five drying techniques, proximate composition, antioxidant activity, and phytochemical content (TFC, TPC). Findings reveal lowered level of ash and moisture, alongside elevated carbohydrate, fat, fiber, protein, antioxidant activity, Total Flavonoid Content (TFC), and Total Phenolic Content (TPC). While oven drying produces high levels of ash, fat, and fiber, sun drying records the highest moisture and lowest TFC. Vacuum drying yields lowest ash, fat, antioxidant activity and TPC. Freeze drying boasts highest protein (17.50±0.35%), carbohydrate (55.87±0.18%), antioxidant activity (488.21±1.25%), TPC (0.56±0.13mgQAE/g), and lowest fiber, moisture. Cabinet drying presents least carbohydrate. Oven drying has maximum energy (335.16±0.18 Kcal/100g), vacuum drying minimum. Statistically, moisture, protein, fiber, total energy, TFC, TPC, antioxidant activity are significant ($p<0.05$). However, dried sample's carbohydrate, ash, and fat content are statistically insignificant ($p>0.05$). In conclusion, among five dried samples, oven and freeze-dried exhibit notable significance as per the study's outcomes.