

**Investigation of Physico-Chemical, Microbial and Antioxidant Properties of *Viburnum opulus* Fermented with Water Kefir Grains**

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Water kefir is produced by fermenting a plant-based carbon source with water kefir grains under favourable conditions. The resulting drink has different flavours and aromas, high antioxidant capacity, and probiotic microorganism content. In this study, water kefir grains were fermented with nectar obtained from *Viburnum opulus* for 24 hours at 25°C. The study investigated the organoleptic, physico-chemical, antioxidant capacity, and microbiological content of water kefir. The results showed that the sensory evaluation of the water kefir beverage obtained by fermenting *V. opulus* was generally low, but the product's colour and fermented odour were highly appreciated. Additionally, the study found a lactobacilli, lactococci, and yeast count of approximately 6 Log cfu/mL after fermentation. Even though the Birx value was as low as 1.0, the microbial development in the plant nectar was favourable. The total antioxidant capacity was determined as 937 mg GAE/L based on the results of the antioxidant capacity analysis. The conclusion drawn was that *V. opulus* is a suitable substrate for the fermentation of water kefir grains, despite the low overall appreciation of the product by consumers.

**Keywords:** Antioxidant capacity; fermentation; *Viburnum opulus*; water kefir.