

Independent Study Title Effects of Soaking and Boiling on Arabinose Levels in Peach Gum Determined by HPLC-RID

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ABSTRACT

This study investigated the effect of household-style heat treatment on the arabinose content of Peach Gum (*Prunus persica* exudate). Unboiled samples were compared with samples boiled for 30, 45, 60, and 90 minutes, and an additional experiment evaluated whether pre-soaking could shorten boiling time while preserving arabinose. Raw peach gum sourced from Biosacc Co., Ltd. (China) was cleaned, size-standardized, and tested under controlled laboratory conditions. Boiling was performed in household drinking water at a fixed ratio of 1 g peach gum to 20 mL water, while deionized water was used exclusively for HPLC analysis. Quantification was carried out using High-Performance Liquid Chromatography (HPLC) with an Agilent Hi-Plex Ca column and a Refractive Index Detector (RID)

Results demonstrated that arabinose remained detectable after boiling across all conditions, with the most pronounced reduction occurring within the first 30 minutes. Arabinose levels ranged from 2.88% w/w in raw samples to 0.45% w/w after 90 minutes of boiling, followed by a stable plateau. Pre-soaking for three hours combined with a 10–15-minute boil preserved arabinose more effectively while minimizing heat exposure.

These findings indicate that household-style preparation can retain arabinose in peach gum and support its potential application as a functional food ingredient with health-promoting value.

Keywords: Peach Gum, Arabinose, *Prunus Persica* Exudate, Household-style Boiling, Pre-soaking, Heat Treatment, Water-soluble Polysaccharide, Arabinogalactan, HPLC, Refractive Index Detector (RID), Agilent Hi-plex Ca column, Functional Food, Nutraceutical, Carbohydrate Analysis, Natural Gum, Dietary Fiber, Hydrocolloid, Bioactive Compound, Traditional Preparation, Thermal Stability