

## Aquafaba Derived from Korean Soybean Cultivars: A Novel Vegan Egg Replacer

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**Abstract :** Recently, pulse cooking water (a.k.a. Aquafaba) has been used as an important and cost-effective alternative to eggs in gluten-free, vegan cooking and baking applications. The aquafaba (AQ) is primarily due to its excellent ability to stabilize foams and emulsions in foods. However, the functional ingredients of this excellent AQ are usually discarded with the compound release. This study developed a high-functional food material, AQ, using functional soybean AQ that has not been studied in Korea. A zero-waste and cost-effective hybrid process were used to produce oil emulsifiers from Korean soybeans. The treatment technique was implemented using a small number of efficient steps. Aquafaba from Backtae had the best emulsion properties (92%) and has the potential to produce more stable food oil emulsions. Therefore, this study is expected to be utilized in the development of the first gluten-free, vegan product for vegetarians and consumers with animal protein allergies, utilizing wastewater from cooked soybeans as a source of plant protein that can replace animal protein.

**Keywords :** aquafaba, soybean, chickpea, emulsifiers, egg replacer, egg-free products

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