

Abstract

Boba pearls have gained global popularity for their chewy texture and sweet flavor. With increasing consumer demand for healthier alternatives foods, high protein boba flour offers a promising solution to enhance boba's protein availability. The study focused on the effect of heat treatment using hot air oven (160°C; 3 minutes), microwave (900W; 2.5 minutes), vacuum oven (60°C; 60 minutes), and boiling (100°C; 30 minutes, followed by drying at 80°C; 3 hours) treatments towards red kidney bean flour properties. Moreover, this project aims to modify the boba pearl physical and nutritional properties by adding red kidney bean flour into the product formulation. In this study, variation of heat treatments had nearly no effect on the proximate composition of the flours except for the moisture content of vacuum flour and ash content of boiling flour ($p < 0.05$). Vacuum-treated flour had the highest lightness among the other RKB flours. According to the sensory evaluation, boba made from vacuum treatment achieved the higher score of overall liking amongst samples with different heat treated flours. Application of red kidney bean flour was found to alter the products' texture in terms of chewiness, stickiness, and graininess. This finding suggests that the addition of red kidney beans have great potential to enhance protein and fiber content in boba pearl production.

Keywords: Red kidney bean flour, Heat treatment, Boba pearl, Functional Properties, Physicochemical Properties