

Abstract

Incorporating bioactive substances into seasoning powder may be done to provide additional benefits. Young rice (*Oryza sativa L.*) leaves are known for their secondary metabolites, however, they are unstable to external factors. The objectives of this study are to evaluate the total phenolic content (TPC) of raw and encapsulated rice leaf extract powder, and evaluate the addition of raw and non-encapsulated rice leaf extract powder on seasoning powder's physicochemical properties and stability. Microwave-assisted extraction and spray drying were employed as the production process. Sample formulation was determined through their TPC content, and physicochemical analysis along with stability analysis were done to evaluate the effect of raw and encapsulated rice leaf extract powder towards the seasoning powder. Results showed that TPC of raw (9.72 ± 0.51 mg GAE/g powder) and encapsulated rice leaf powder (3.1 ± 0.14 mg GAE/g powder) was significantly higher in raw rice leaf powder ($p \leq 0.05$). At week 0, significant differences ($p \leq 0.05$) were observed in hygroscopicity, color, MC, Aw, and DPPH, but not in solubility, flowability, cohesiveness, TPC, and FRAP between all samples. For stability analysis, all samples showed fluctuation in MC, Aw, solubility, and antioxidant activities ($p \leq 0.05$), but stable in TPC, flowability, and cohesiveness ($p > 0.05$) within and between sample groups throughout storage. These results indicate the addition of rice leaf powder contributed to the physicochemical properties and stability of seasoning powder.

Keywords: seasoning powder, rice leaf, spray drying, physicochemical properties, stability analysis