Applications of date (Phoenix dactylifera L.) fruits as bioactive ingredients in functional foods

ABSTRACT

The demand for food bioactive ingredients from natural sources with low cost and broad range of applications is extremely increasing. In this study, five date varieties marketed in Malaysia were evaluated for their potential applications as functional food ingredients. The date fruits were extracted with 80% ethanol, and biological activities including antioxidant, antibacterial and anti-elastase activity were determined by referenced methods. Results of the study showed that the date variety Piyarom demonstrated the highest antioxidant activity (IC50 11.3 µg/ mL), strong antibacterial activity towards tested pathogens that was ranged in 62-76 %, and strong anti-elastase activities (61.2±4.9%). The varieties Ajwa and Anbar showed moderate antioxidant and antibacterial activity, while Deglet Nour and Rabbi exhibited low activities. The results revealed high potential of Piyarom extract to be used as ingredient for functional food applications and fulfilled the high demand for natural functional food ingredients.

Keyword: Antioxidant; Antibacterial activity; Anti-aging; Anti-elastase; Functional food