Title : Studies on Kombucha Fermentation from Longan Seeds and Longan Peels

Author(s) : **1.** Chanoknun Khamsan **Student ID :** 650510017

Major : Biochemistry and Biochemical Innovation

Advisor(s) : **1.** Assistant Professor Dr. Nopakarn Chandet

Type of presentation* ***(choose 1)*** **:**

- ☐ **Oral Presentation** (เฉพาะ ตัวแทนนศ.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)
- ☑ **Poster** (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)
- ☐ **Cooperative Education** (กรณี นำเสนอผลงานสหกิจศึกษา)

ABSTRACT

Kombucha is a fermented tea beverage produced through the action of a symbiotic consortium of microorganisms known as SCOBY (Symbiotic Culture of Bacteria and Yeast), which consists of yeast and acetic acid–producing bacteria. The objective of this special project was to produce kombucha using longan seed extract and longan peel extract as alternatives to tea infusion, and to investigate the antioxidant activities of both kombucha products in order to develop a health-oriented alternative beverage. The fermentation substrate was prepared by soaking 10 g of finely ground longan seeds or longan peels in 900 mL of water, followed by the addition of 100 g of sugar. The mixture was boiled at 100 °C for 10 minutes and then allowed to cool. Subsequently, 100 mL (10% v/v) of commercial ACOBY starter liquid and a commercial SCOBY pellicle were added. Fermentation was carried out at room temperature (25–30 °C) for 27 days. Samples were collected during fermentation to determine pH, reducing sugar content, total sugar content, total acidity, and total phenolic content. The results showed that at 27 days of fermentation, the pH values of kombucha produced from longan seeds and longan peels decreased from 2.59 and 2.65 to 1.97 and 2.06, respectively. Kombucha produced from longan seeds exhibited a maximum total acidity of 0.68% (w/v), whereas kombucha produced from longan peels showed a maximum total acidity of 0.58% (w/v). Reducing sugar content in longan seed kombucha increased from 7.95 mg/mL at the beginning of fermentation to 74.68 mg/mL, while that of longan peel kombucha increased from 9.14 mg/mL to 63.33 mg/mL. Meanwhile, total sugar content remained relatively high, with values of 122.96 and 104.55 mg/mL, respectively. The total phenolic content of kombucha produced from longan seeds and longan peels at 27 days of fermentation was 3.47 and 6.46 mg GAE/mL, respectively.The results of the experiment show that longan seeds and longan peels can be used as raw materials in the kombucha fermentation process.

**Type of presentation must be matched with an option you choosing on student upload system.*

***The abstract can be more than one page and must be approved by project advisor before upload.*