**Title :** Biosurfactant Production By some Fungi

**Author(s) :** Nadchadaporn Pisakul **Student ID :** 650510223

**Major :** Microbiology

**Advisor(s) :** Assistant Professor Dr. Boonsom Bussaban

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

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

# ABSTRACT

Biosurfactants are microbial surface-active compounds that effectively reduce surface and interfacial tension. They are characterized by high stability, biodegradability, and low toxicity compared to synthetic surfactants. This study aimed to screen and determine the optimum conditions for biosurfactant production from 10 fungal isolates. The isolates were cultivated in coconut dextrose broth (CDB) and Silva's medium 2 (SS2) for 14 days. The results indicated that isolate Da68 cultivated in SS2 medium exhibited the highest biosurfactant production efficiency, yielding an oil displacement area of 33.17±0.05 $cm^2$ and an emulsification index of 72.22±0.02% Furthermore, it showed the highest activity level in the drop collapse test (+++). Consequently, isolate Da68 was selected to study the effects of pH levels (5.0, 7.0, and 9.0) and incubation periods (7, 10, and 14 days) on production. The optimization study revealed that the optimum condition was pH 7.0 with a 14-day incubation period. This condition produced the maximum biosurfactant activity, with an oil displacement area of 36.30±0.07 $cm^2$ and an emulsification index of 77.78±0.05% These values were significantly higher than those obtained at pH 5.0 and 9.0, as well as at shorter incubation periods. This study demonstrates that isolate Da68 in SS2 medium under neutral conditions has significant potential for biosurfactant production.

Keywords: Biosurfactants, Filamentous Fungi, Optimization, Emulsification index, Oil displacement area

**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.*