



学位論文発表会



Plant extracts, antimicrobials and ultraviolet light as hurdle technology in controlling *Alicyclobacillus acidoterrestris*

(*A. acidoterrestris* の制御における植物エキス、抗菌剤、紫外線の複合的効果)

EMIL EMMANUEL C. ESTILO

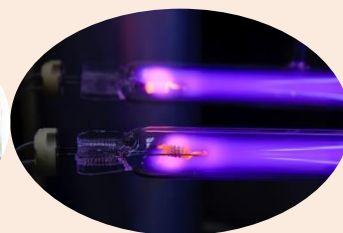
(生物圏科学研究科 生物機能開発学専攻)

2020年1月22日(水) 13:30-14:30

生物生産学部 C205 講義室

Fruit juices remain popular because of their nutritional, health and wellness benefits. They were thought to be vulnerable only to yeasts and molds because of their low pH. However, acidothermophilic bacteria have been implicated in spoilage outbreaks throughout the years. *Alicyclobacillus acidoterrestris* is widely considered as the most important spoilage organism for acidic beverages and juices as it can resist the harmful acidic pH of fruit juice as well as thermal pasteurization treatments. Its survival and contamination ultimately cause economic losses and result in products that have unacceptable quality due to the produced off-flavors and off-odors that are likened to detergents. Hurdle technology is a novel concept that involves use of multiple, mild physical or preservation methods that can result in process schedules with optimal efficacies. Considering the economic importance of fruit juices as well as the challenges posed by *A. acidoterrestris* to the fruit and beverage industry, along with the implications of various food-, process-, and microorganism-related factors pertinent to food processing, food quality and food safety, this work proposes a hurdle technology that makes use of natural and traditional antimicrobials in line with ultraviolet light as a novel food processing technique in controlling the spoilage microorganism and shows promise as a possible alternative to currently employed thermal processing methods.

フルーツジュースは pH が低く、栄養・美味しさなど品質面から高温殺菌ができないため、好熱性好酸性菌であるアリシクロバチルス属細菌による変敗が問題になります。本研究では“ハードルテクノロジー”、すなわち複数の制御ハードルを組み合わせた殺菌技術を開発しました。ハードルとして、紫外線、植物抽出液、抗菌剤を用い、最適効率をもたらす組み合わせ条件を確立しました。本法は腐敗微生物を制御する新しい食品加工技術として期待されます。



連絡先: 中野 宏幸 (内線 7920) hnakano@hiroshima-u.ac.jp

本学位論文発表会は、生物圏科学研究科の共同セミナーになります。