

Fellowship ID : BR200402

2022年 10月 22日

YYYY/MM/DD

独立行政法人日本学術振興会理事長 殿

To: President, Japan Society for the Promotion of Science

## 研究活動報告書

## Research Report

## 1. 受入研究者/ Host researcher

受入研究機関・部局・職

Name of Host Institution, Department and Title

Miyagi University, Department of Food Management

受入研究者氏名

Host Researcher's Name

Makoto Kanauchi

## 2. 外国人招へい研究者/ Fellow

所属研究機関・部局・職

Name of Institution, Department and Title

Brigham Young University, Department of Biology

外国人招へい研究者氏名

Fellow's Name

Roger Koide

## 3. 採用期間/ Fellowship Period

2022年 07月 01日 ~ 2022年 07月 22日

## 4. 研究課題/ Research Theme

Factors influencing microbial communities in miso breweries

## 5. 研究活動報告/ Research Report

## (1) 研究活動の概要/ Summary of Research Results

We hypothesized that climate significantly influences microbial communities inside miso breweries. We collected approximately 200 environmental samples from 10 miso breweries from Ōsaki in the north to Fukuoka in the south. DNA was extracted from each of the samples and fungal and bacterial community MiSeq libraries were constructed for sequencing. Sequencing was performed by the University of Idaho. Fungal and bacterial communities differed significantly from each other among the breweries. However, latitude, longitude, average maximum and average minimum daily temperatures for the 30 d preceding collection had only minor impacts on fungal and bacterial community structure. In contrast, the surface from which the samples were taken (concrete, wood, plastic or metal), the room that was sampled (miso mixing room, fermentation room, soybean steaming room) and the degree of temperature control (not controlled vs. controlled) were highly significant factors. We conclude that because some of the fermentation of miso is attributable to the microbes found on interior brewery surfaces, the fermentation process may be influenced by environmental factors of the brewery itself, including the nature of the interior surfaces, whether fermentation takes place in the same room as miso mixing, and whether the space is temperature controlled.

(注) 採用期間終了後3ヶ月以内に提出

※ (Note) Submit the form within 3 months after the expiration of fellowship.

※ 様式1に記載された情報を元に確認しますので、部局名等の名称含め、内容に誤りが無いか必ずご確認ください。

(2) 研究キーワード/ Keywords

Fungi, bacteria, community, miso, brewery, climate

(3) 主な研究発表 (雑誌論文、学会、集会、知的財産権等/ Main Research Publications

None at this time.

(4) その他/ Remarks

We are currently preparing a manuscript for publication.

(注) 採用期間終了後 3 ヶ月以内に提出

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