

# Contents

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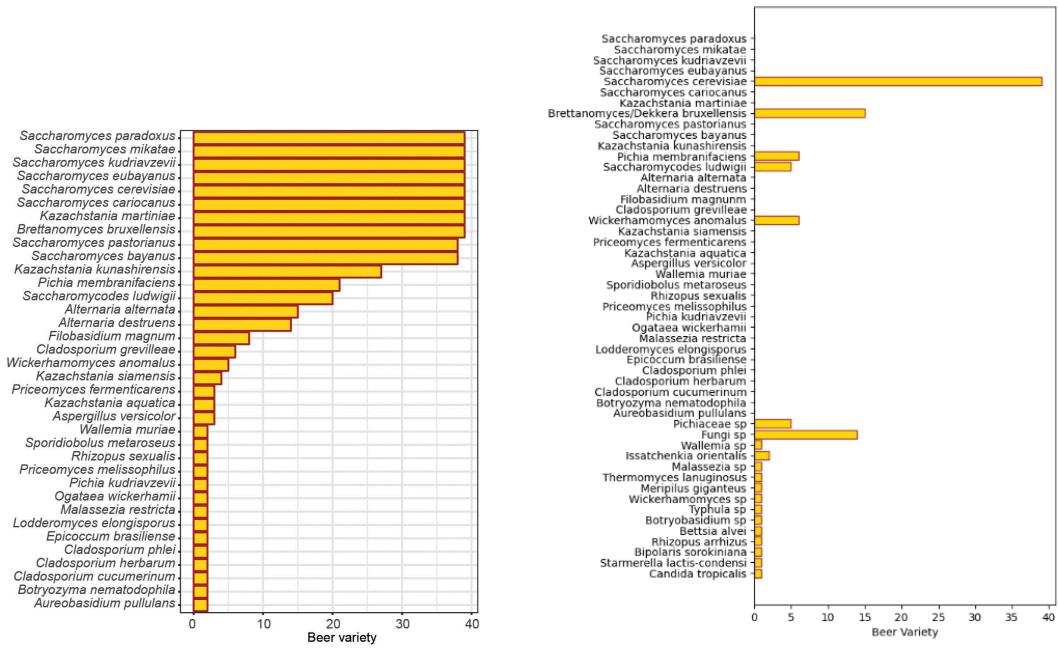
## 1 Introduction

This document compares the results from Yedil's Master's thesis with the newly analyzed results. The goal is to assess the reproducibility and consistency of the results.

## 2 Results

### 2.1 BeerDecoded beer variety diagram

Comparison of BeerDecoded beer variety diagram between the original thesis, reproduced results, and the new results.



(a) Thesis Original Results

(b) Thesis Reproduced Results

Figure 1: BeerDecoded beer variety diagram

The figures present data regarding the quantity of beers associated with each species identified in both the original and reproduced results. For clarity, the figure depicting the reproduced results on the right retains the species order as presented in the original figure. This arrangement aids in a more transparent comparison between the two sets of results.

## Comparison of Results OTU\_ITS\_UNITE

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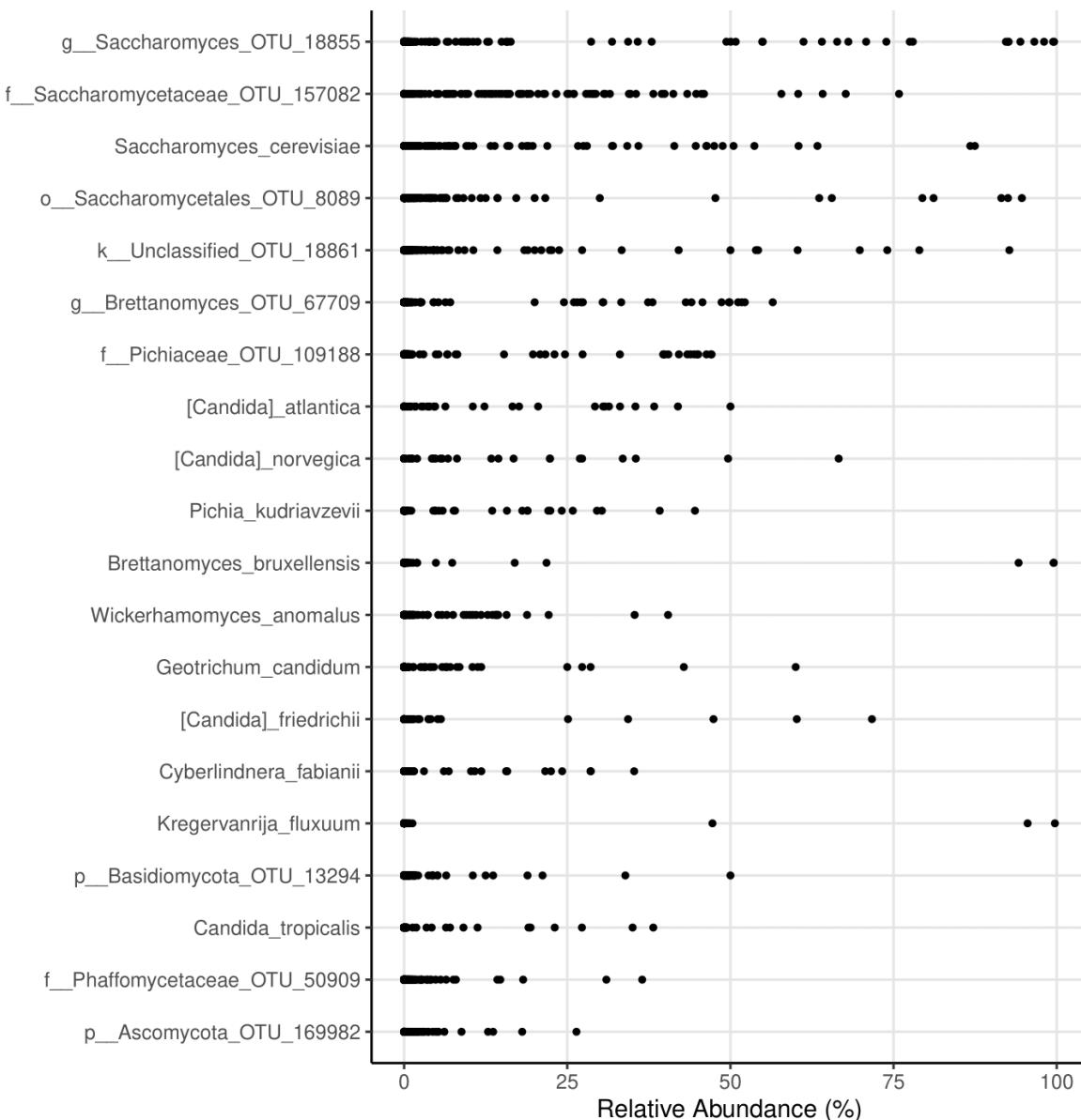


Figure 2: New Results

Relative abundance of fungal taxa in different beer samples. Each dot represents the relative abundance of a specific taxon in a particular sample. The x-axis shows the percentage of relative abundance, while the y-axis lists the identified fungal taxa. This plot highlights the diversity and distribution of fungi across the beer samples

## Comparison of Results OTU\_ITS\_UNITE

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### 2.2 Heatmap of the number of reads per ITS per beer

Comparison of heatmap of the number of reads per ITS per beer between the original thesis, reproduced results, and the new results

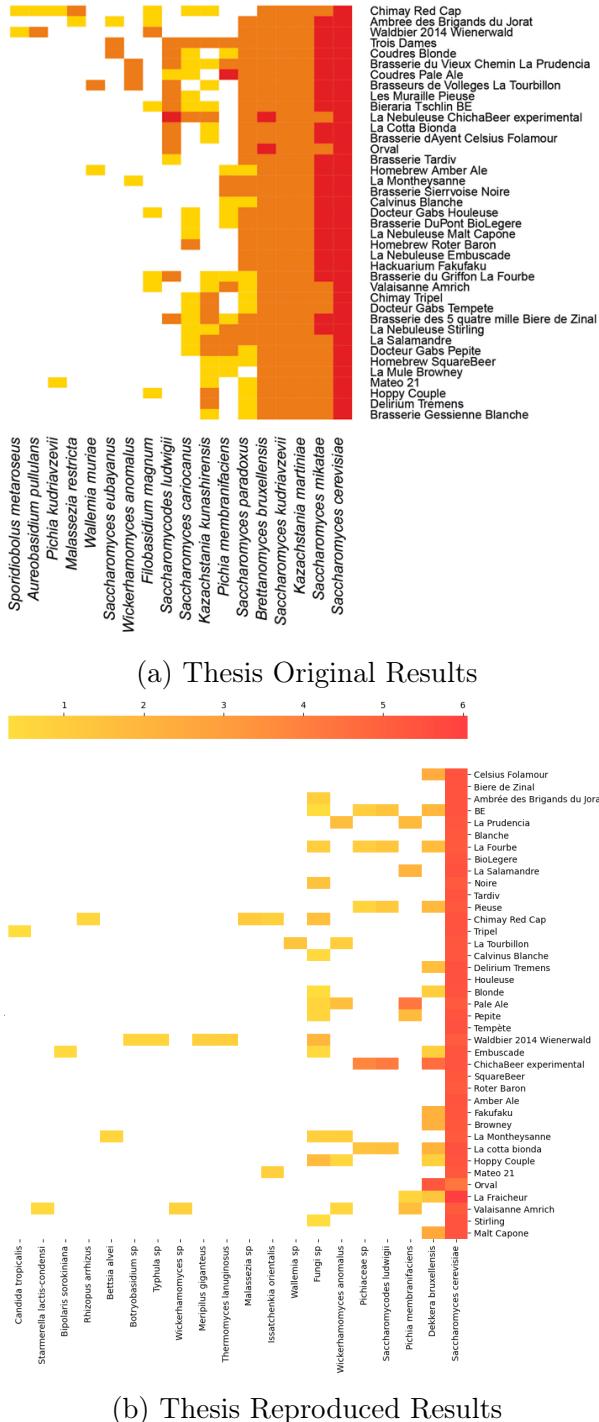


Figure 3: Heatmap of the number of reads per ITS per beer

Beer names are shown on the right and species names are shown at the bottom.

## Comparison of Results OTU\_ITS\_UNITE

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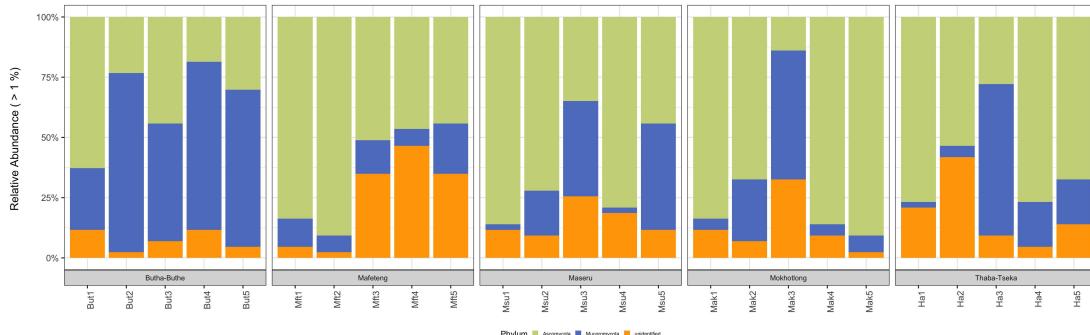


Figure 4: New Results

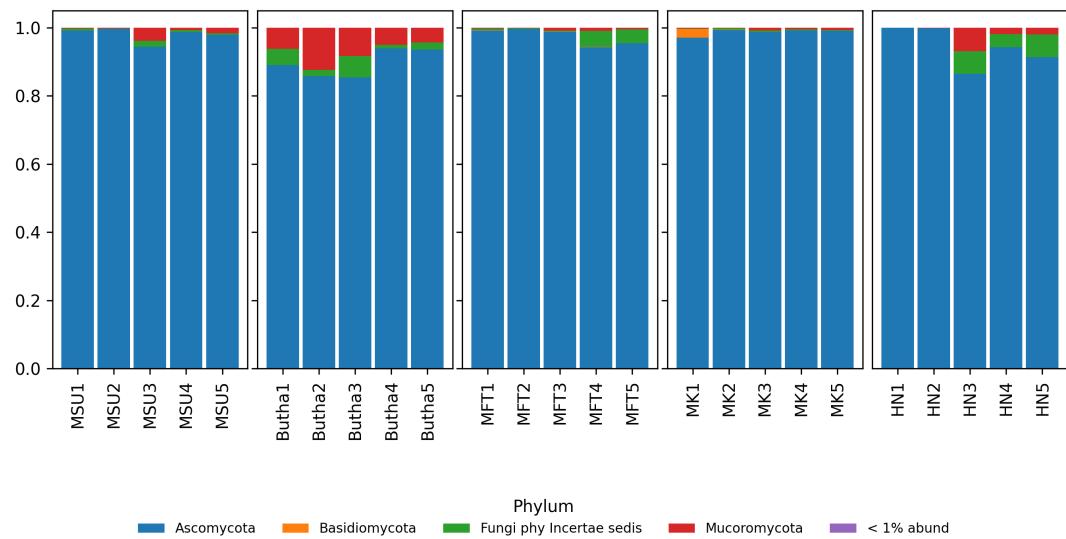
Heatmap of the relative abundance of fungal species across different beer samples. The x-axis represents various beer samples, while the y-axis lists the fungal species identified.

### 2.3 Distribution of fungal Phylum in Sesotho

Comparison of the distribution of fungal Phylum in Sesotho between the original thesis, reproduced results, and the new results.



(a) Thesis Original Results



(b) Thesis Reproduced Results

Figure 5: Distribution of fungal Phylum in Sesotho

In the graphical representation, the x-axis delineates the various breweries, labeled as Maseru (MSU), Mafeteng (MFT), Thaba-Tseka (HN), Butha-Buthe (Butha), and Mokhotlong (MK). To illustrate, the label "MK1" denotes a sample sourced from Mokhotlong during the first stage of fermentation. The fungal phyla Ascomycota and Mucoromycota emerged as the predominant groups in the study. Notably, Ascomycota displayed a higher dominance in the reproduced results compared to the original findings.

## Comparison of Results OTU\_ITS\_UNITE

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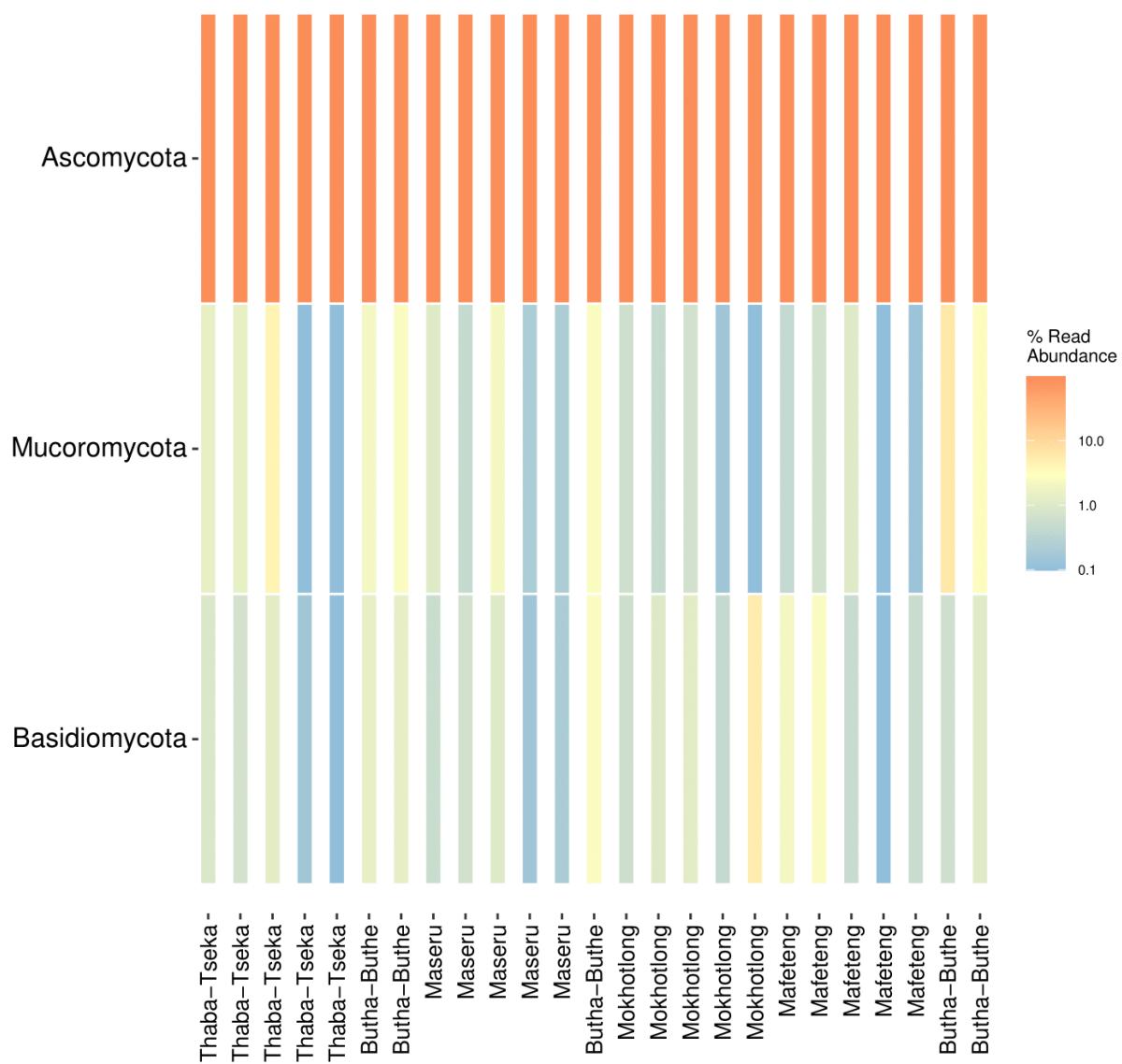


Figure 6: New Results

Heatmap of the relative abundance of fungal phyla across different locations. The x-axis represents various locations, while the y-axis lists the fungal phyla identified.

## Comparison of Results OTU\_ITS\_UNITE

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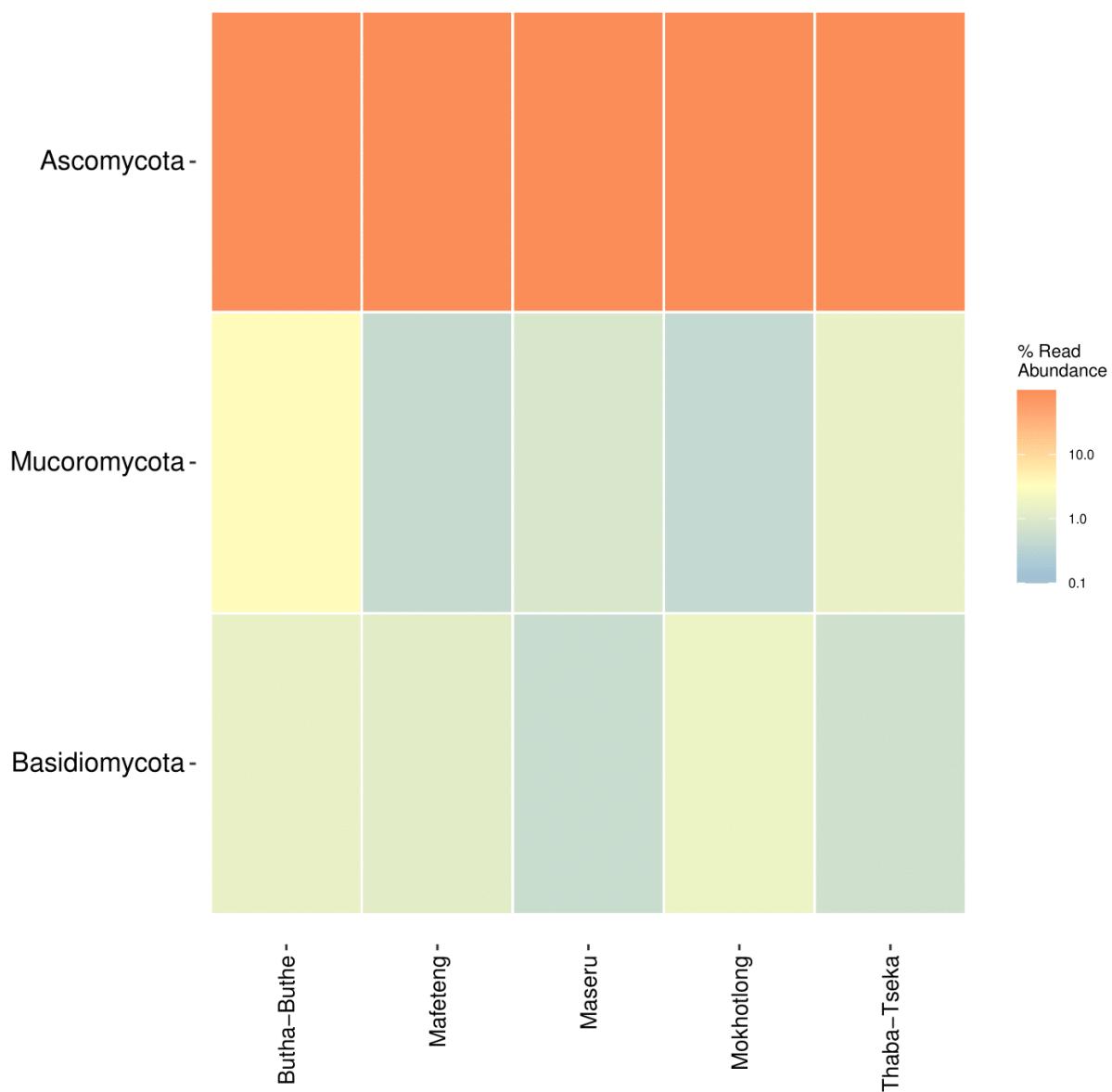


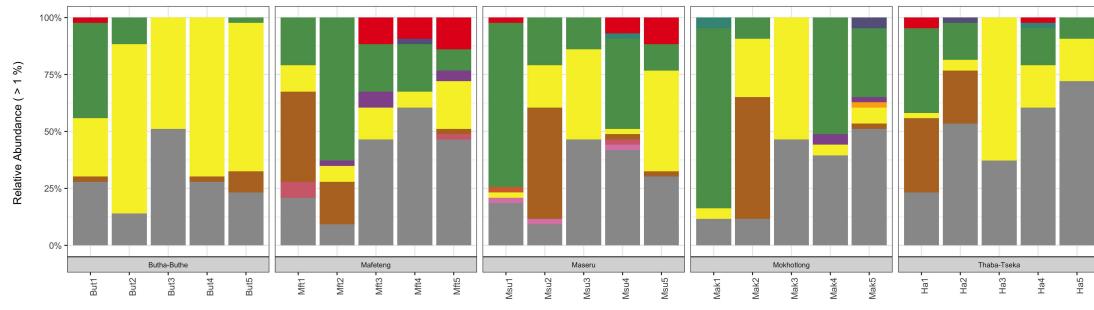
Figure 7: New Results v2  
samples of the respective breweries summarized

## Comparison of Results OTU\_ITS\_UNITE

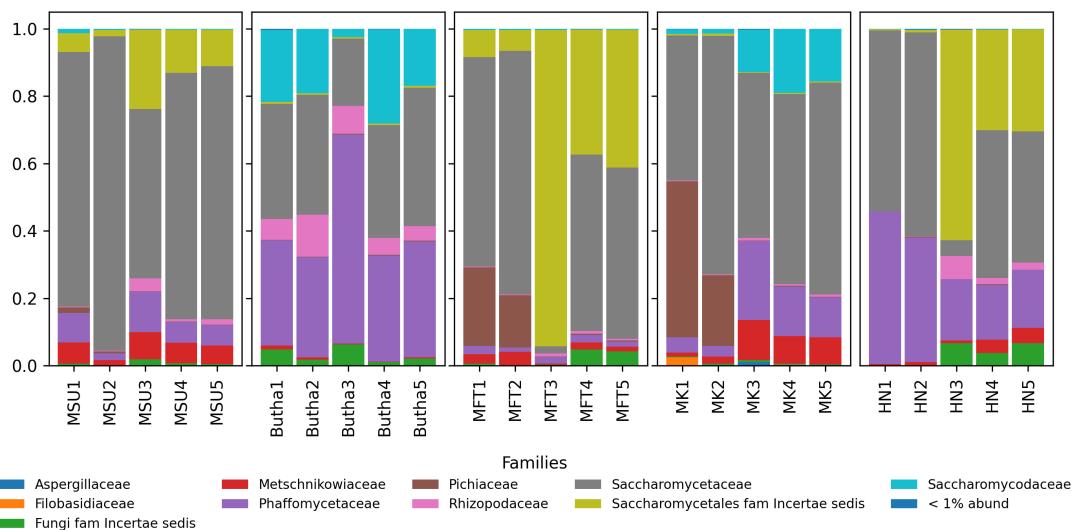
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### 2.4 Distribution of fungal Family in Sesotho

Comparison of the distribution of fungal Family in Sesotho between the original thesis, reproduced results, and the new results.



(a) Thesis Original Results



(b) Thesis Reproduced Results

Figure 8: Distribution of fungal Family in Sesotho

In alignment with the original findings, the reproduced data also identified the presence of Phaffomycetaceae and Pichiaceae.

## Comparison of Results OTU ITS UNITE

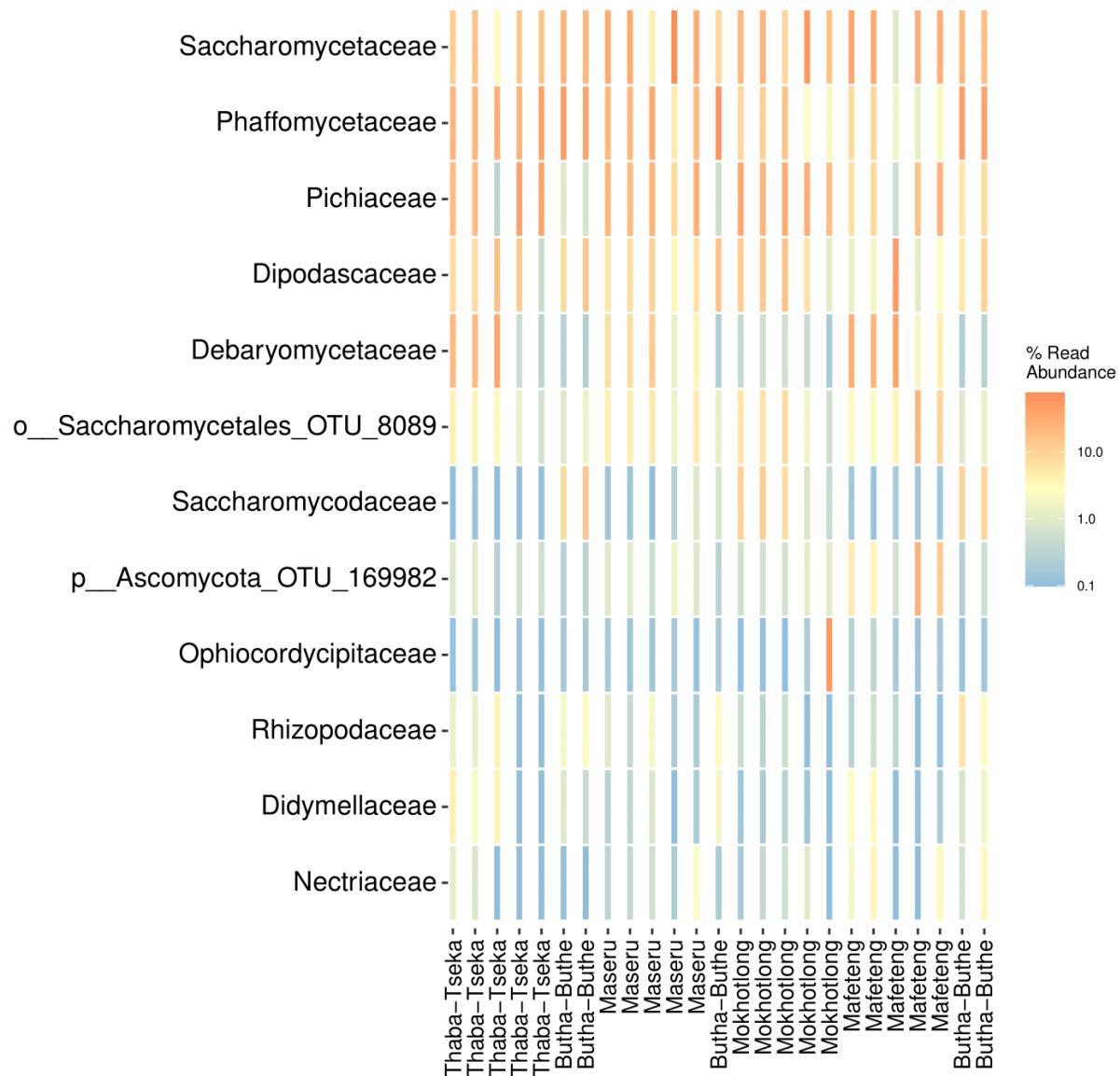


Figure 9: New Results

Heatmap of the relative abundance of fungal families across different locations. The x-axis represents various locations, while the y-axis lists the fungal families identified.

## Comparison of Results OTU\_ITS\_UNITE

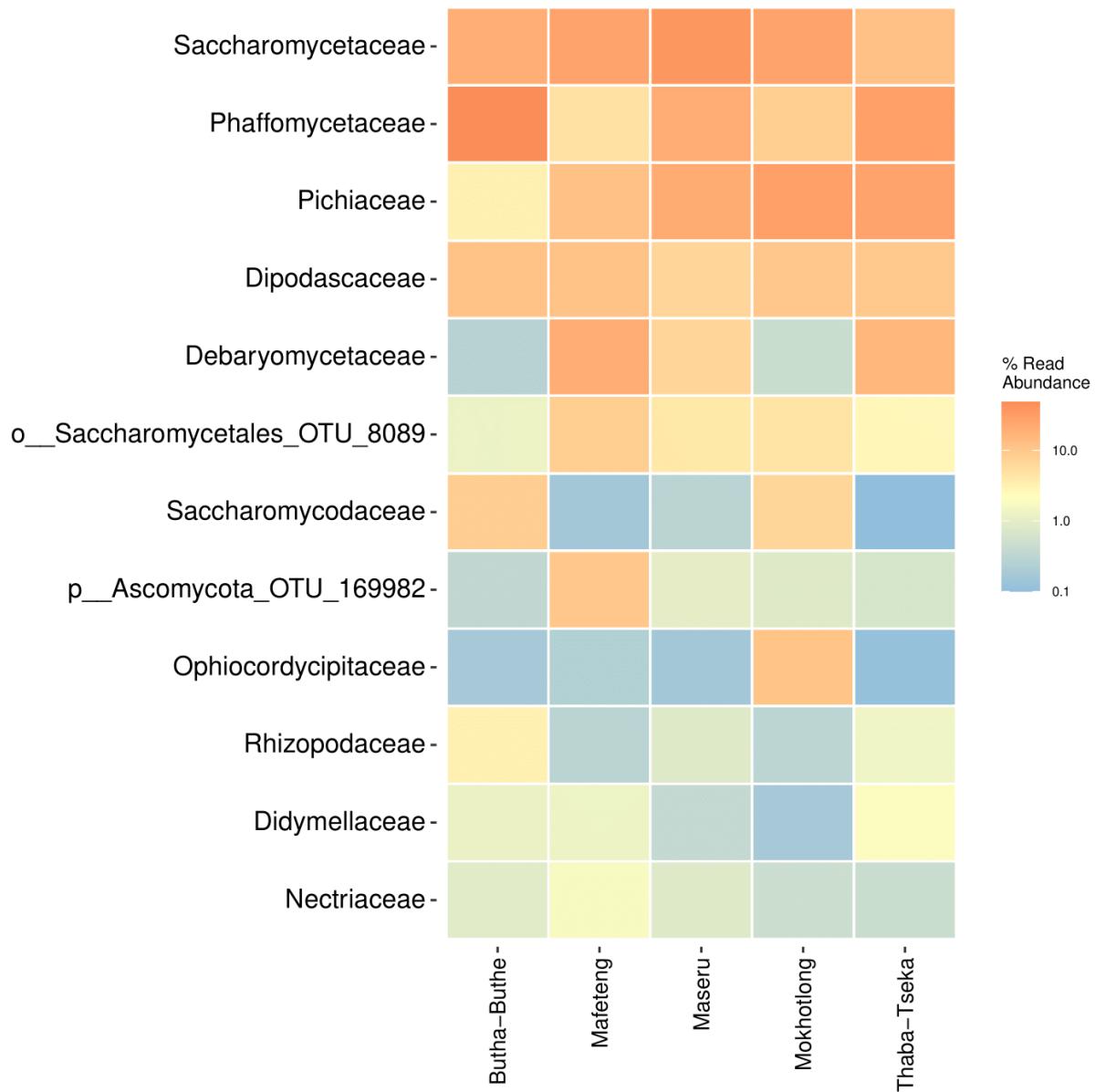


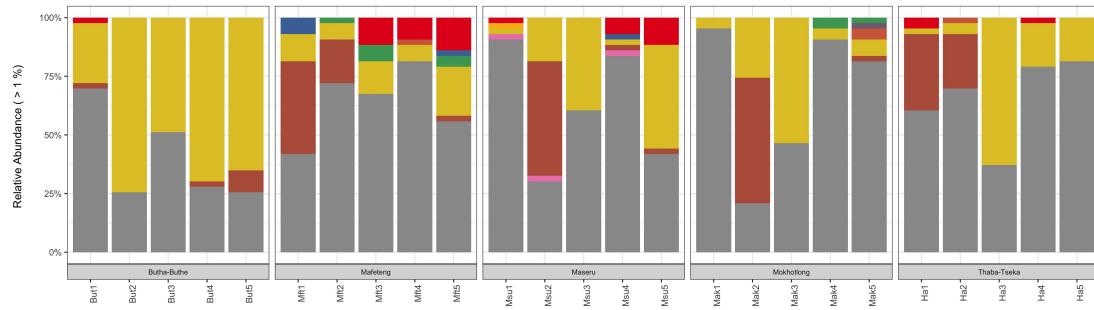
Figure 10: New Results v2  
samples of the respective breweries summarized

## Comparison of Results OTU\_ITS\_UNITE

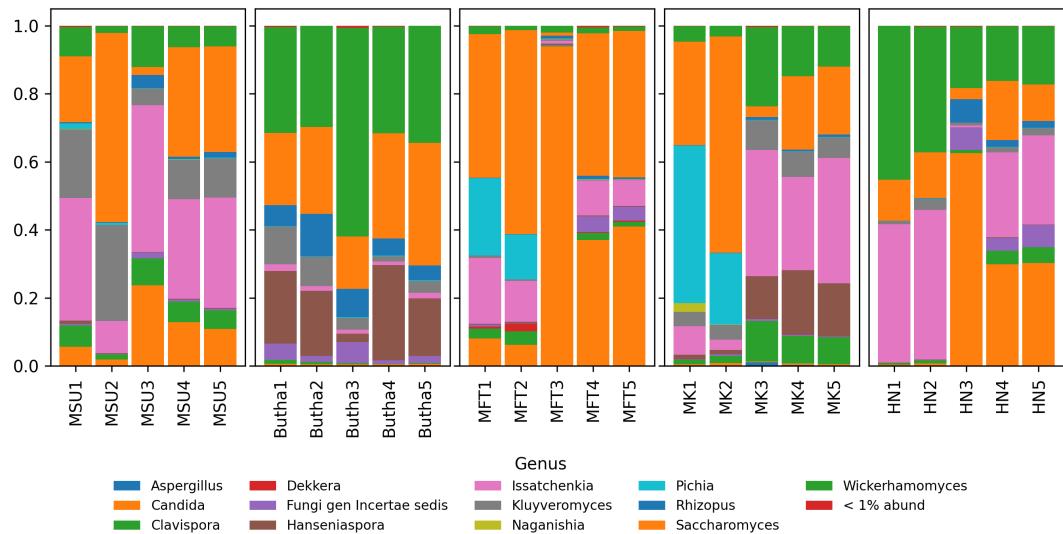
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### 2.5 Distribution of fungal Genus in Sesotho

Comparison of the distribution of fungal Genus in Sesotho between the original thesis, reproduced results, and the new results.



(a) Thesis Original Results



(b) Thesis Reproduced Results

Figure 11: Distribution of fungal Genus in Sesotho

Based on the analysis of the distribution of fungal genera in Sesotho, Rhizopus emerges as the dominant genus in the original findings. In contrast, Saccharomyces is more prevalent in the reproduced data.

## Comparison of Results OTU\_ITS\_UNITE

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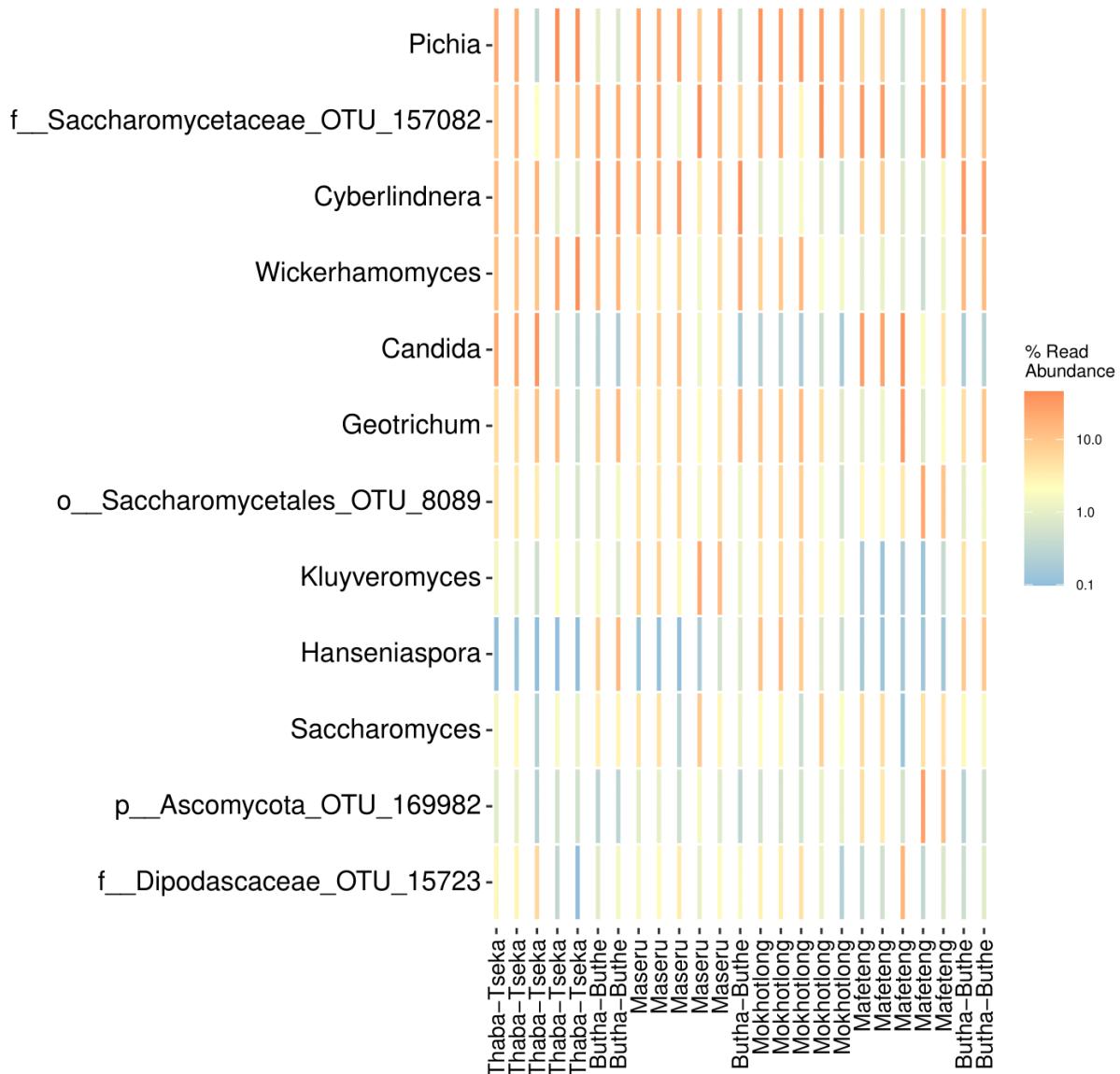


Figure 12: New Results

Heatmap of the relative abundance of fungal genera across different locations. The x-axis represents various locations, while the y-axis lists the fungal genera identified.

## Comparison of Results OTU\_ITS\_UNITE

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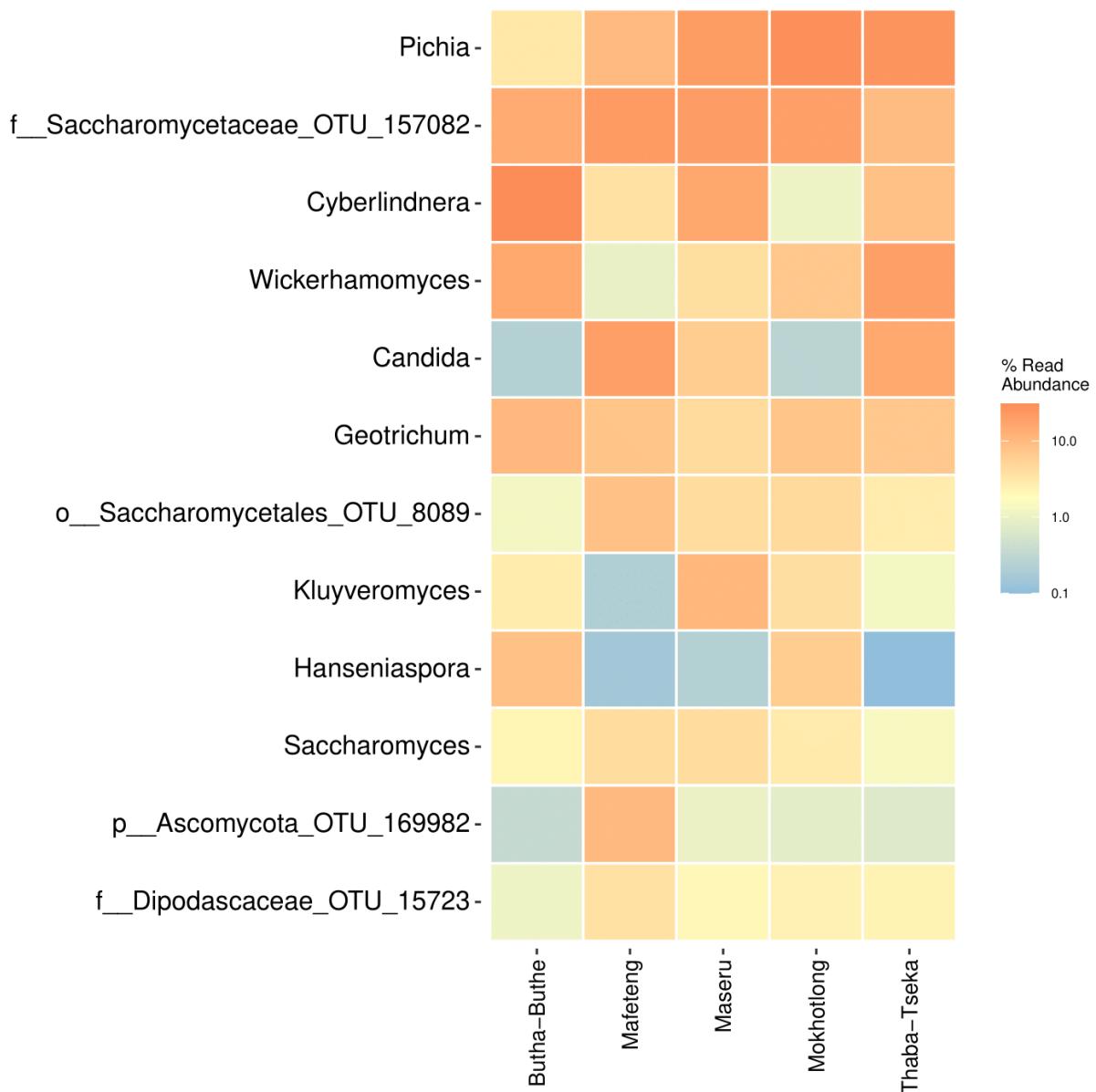


Figure 13: New Results v2  
samples of the respective breweries summarized

### 2.6 A Culture-Independent Comparison of Microbial Communities of Two Maturating Craft Beers Styles

Fungal diversity

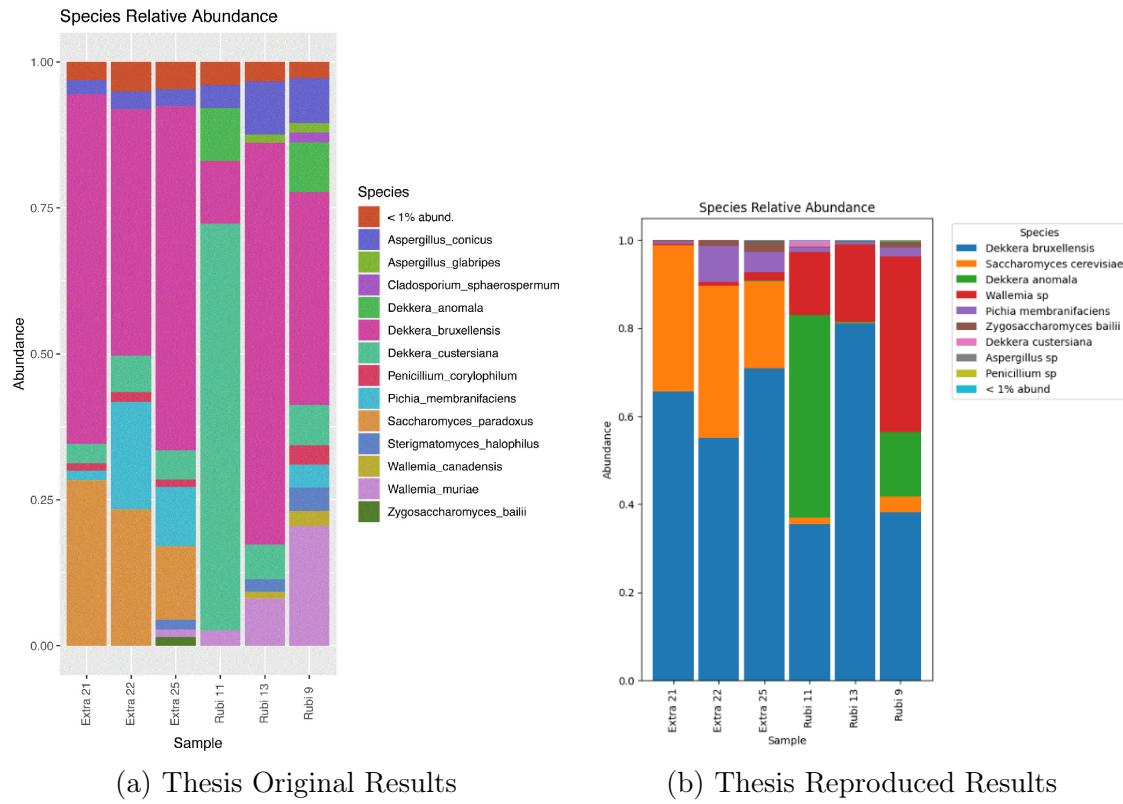


Figure 14: Fungal species relative abundance

The relative abundance of fungal taxa at the species level across various beer styles is depicted. Notably, Dekkera stands out as the most abundant genus in both beer styles examined

## Comparison of Results OTU\_ITS\_UNITE

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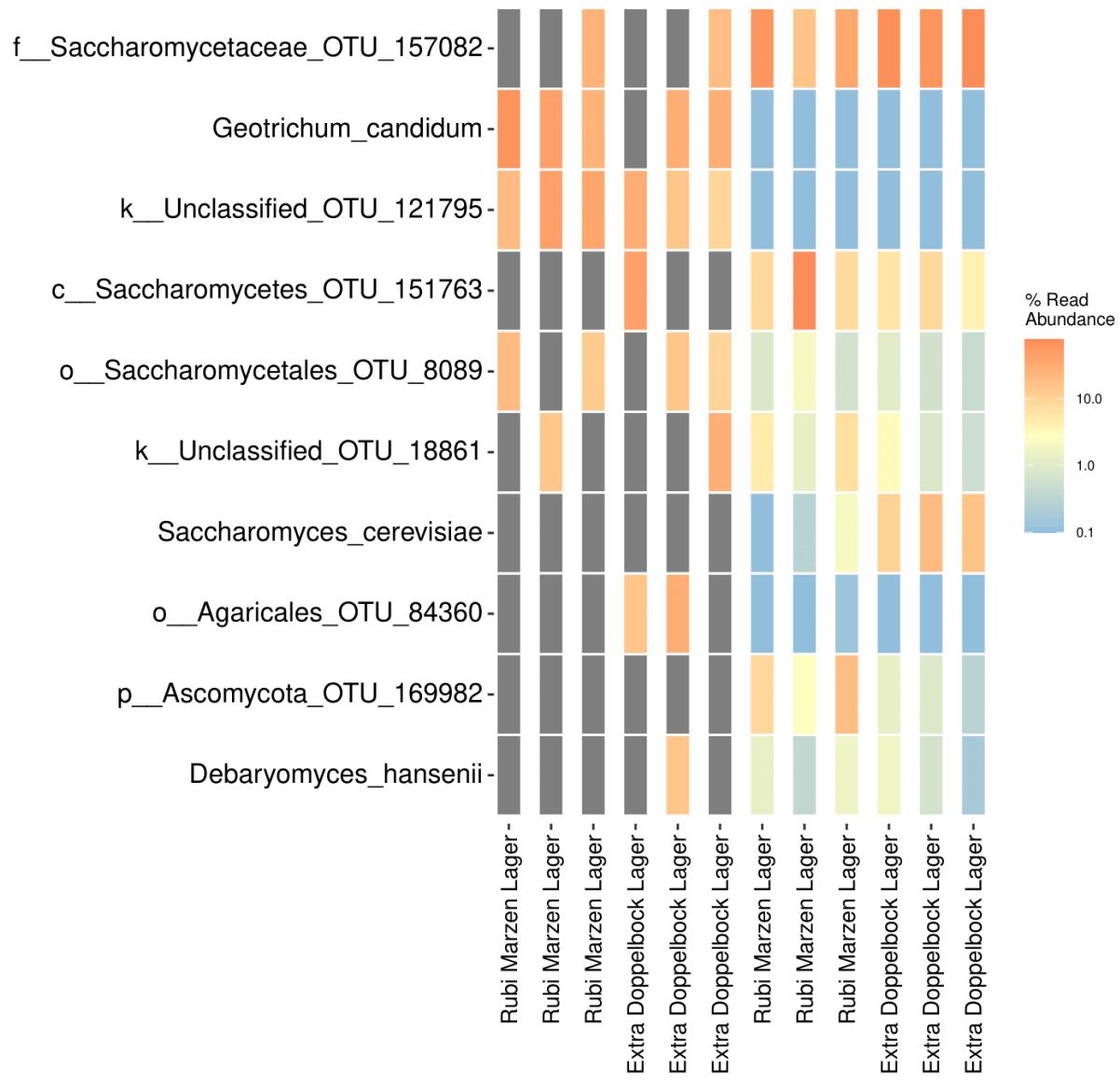


Figure 15: New Results

Relative abundance of various yeast and fungal operational taxonomic units (OTUs) in different beer samples.