User Guide for Coffee Fermentation Process Dashboard

> 💡 Please make sure you are already logged in when accessing the dashboard. Make sure you are also a user on the airtable.

Dashboard Link: https://airtable.com/appipeZrVM8r81BKm/pagA6B483AYyuSCoS

Introduction

The Coffee Fermentation Process Dashboard is designed to help coffee farmers monitor and analyze key metrics of their coffee fermentation process. This guide provides instructions on how to use the dashboard and explains how the information can be useful for optimizing coffee quality.

https://mcgill-my.sharepoint.com/personal/dhevin_desilva_mail_mcgill_ca/_layouts/15/embed.aspx?UniqueId=389d8c72-ac4a-45d1-bfa4-42348e81fbf1&embed=%7B%22ust%22%3Atrue%2C%22hv%22%3A%22CopyEmbedCode%22%7D&referrer=StreamWebApp&referrerScenario=EmbedDialog.Create

Accessing the Dashboard

https://airtable.com/appipeZrVM8r81BKm/pagA6B483AYyuSCoS

Dashboard Components

1. **Average Temperature (Temp)**
    - **Description:** Displays the average temperature recorded during the fermentation process for the selected batch.
    - **Usefulness:** Helps in ensuring the fermentation process stays within optimal temperature ranges to avoid spoilage and achieve desired coffee characteristics.
2. **Average pH Level (Avg PH)**
    - **Description:** Shows the average pH level recorded during the fermentation process.
    - **Usefulness:** Monitoring pH levels is crucial as it affects the flavor and quality of the coffee. Maintaining the correct pH level helps in achieving the desired acidity and balance.
3. **Average Brix Level (Avg Brix)**
    - **Description:** Indicates the average Brix level (sugar content) recorded during the fermentation process.
    - **Usefulness:** The Brix level is a measure of the sugar content in the coffee cherries. Monitoring this helps in determining the sweetness and ripeness of the beans.
4. **Average Humidity (Avg Humidity)**

- **Description:** Displays the average humidity level during the fermentation process.
- **Usefulness:** Controlling humidity levels is important to prevent mold growth and ensure consistent fermentation conditions.

5. **Average Drying Temperature (Avg Drying Temp)**
    - **Description:** Shows the average temperature during the drying process for the selected batch.
    - **Usefulness:** Ensures that the drying process is conducted at optimal temperatures to preserve the quality of the coffee beans.
6. **Average Drying Humidity (Avg Drying Humidity)**
    - **Description:** Indicates the average humidity during the drying process.
    - **Usefulness:** Proper humidity levels during drying prevent the beans from becoming too dry or too moist, which can affect their quality.

Visual Data Representations

1. **Number of Different Fermentations**
    - **Description:** A bar chart showing the count of different fermentation methods used across all batches.
    - **Usefulness:** Provides an overview of the most commonly used fermentation methods and helps in comparing their effectiveness.
2. **SCA Score vs. Harvest Date by Fermentation Type**
    - **Description:** A line chart comparing the SCA scores against the harvest dates, segmented by fermentation type.
    - **Usefulness:** Helps in analyzing how the harvest date and fermentation method impact the quality of the coffee as measured by SCA scores.
3. **SCA Score vs. Fermentation Type**
    - **Description:** A line chart comparing the SCA scores across different fermentation methods.

- **Usefulness:** Allows comparison of different fermentation methods to determine which one yields the best quality coffee.

4. **Average Fermentation Brix vs. SCA Score**
    - **Description:** A scatter plot showing the relationship between the average Brix levels during fermentation and the SCA scores.
    - **Usefulness:** Helps in understanding the correlation between sugar content during fermentation and the final quality of the coffee.
5. **Average Fermentation Temperature vs. SCA Score**
    - **Description:** A scatter plot showing the relationship between the average temperature during fermentation and the SCA scores.
    - **Usefulness:** Assists in identifying the optimal temperature range for fermentation that yields the highest quality coffee.
6. **Average Fermentation Humidity vs. SCA Score**
    - **Description:** A scatter plot showing the relationship between the average humidity during fermentation and the SCA scores.
    - **Usefulness:** Provides insights into how humidity levels during fermentation affect the quality of the coffee.

How to Use the Dashboard

1. **Select the Batch:** Choose the batch you want to analyze from the drop-down menu. If no batch is selected, all the data from the batches will be aggregated.
2. **Review Metrics:** Observe the key metrics (temperature, pH, Brix, humidity) to ensure they are within optimal ranges.
3. **Analyze Charts:** Use the visual charts to identify trends and correlations between different variables and the SCA score.
4. **Make Adjustments:** Based on the insights gained, adjust your fermentation and drying processes to optimize the quality of your coffee.