Maroon Shroom Beer

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Introduction

As the population of health conscious drinkers grow quickly in the past few years, the non-alcoholic beer market has expanded rapidly and is expected to continue increasing in the next decade. However, customer feedback regarding current products available on the market has shown a common issue of lacking flavor. In addition, low-alcohol/non-alcoholic beer is still widely perceived to be less tasty than normal beer, while taste is a crucial factor for choosing product.

Objectives

To address the issue of non-alcoholic beer lacking flavors, we're creating a beer product using shiitake mushroom and burlat cherry puree as main components to create a unique taste. This product will have a rich flavor profile while maintaining health benefits.

Materials & Consumers

Table 1—Materials cost per barrel

Material	Cost per barrel
Shiitake mushroom	$12.80
Burlat cherries	$5.20
Water	$0.40
Barley	$10.20
Dry hops	$13.40
Ale yeast	$24.00
S. ludwigii enzyme	$7.00
Electricity	$5.00
Bottles	$16.50
Total	**$94.50**
Revenue per barrel	**$495.00**

Figure 1—Customer Profile

Results

Figure 2—Maroon Shroom
Non-alcoholic, low-calorie, full-bodied tasting beer

Flavour To elevate the taste of our low-alcoholic beer, burlat cherries intensify the flavour profile with a dark fruity taste and mushroom enhances the natural umami present in beer.

Aroma The shiitake mushrooms give the beer an earthy, complex aroma that is naturally developed in the aging process of beer in barrels and gives more depth to the flavouring.

Nutrition Beyond being low-calorie, the cherries increase the antioxidant activity of our beer and shiitake mushrooms are used commonly in supplements for boosting immune and heart health.

The non-alcoholic beer market in the U.S. has experienced rapid growth in the past few years and is projected to have a lot of potential in the next few years.

- $300 M in sales over 2020-21
- 34.8% growth in U.S volume sales in 2020
- Projected to increase 31% by 2024

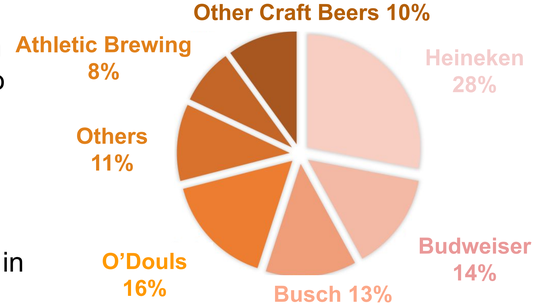

Figure 3—U.S Non-alcoholic Beer Market (2021)

Parameter name	1	w	x	y	z	w^2	w*x	w*y
Parameter value	0	0.148759	1.658613	1.271734	0.483962	0.542115	0	-0.671061
Parameter name	w*z	x^2	x*y	x*z	y^2	y*z	z^2	
Parameter value	-0.641176	-0.524839	-0.979933	-0.522095	-0.218403	0	0.141907	

w,x,y,z = Van cherry wt%, burlat cherry wt%, shiitake mushroom wt%, maitake mushroom wt%

Figure 4—Ridge Regression Ingredient Scoring Model
Parameters tested: Combination of two cherry types and two mushroom types
Sampling method: Randomly sampled skewed distribution ranging from 1-10.
Goal: Produce a predictive model for taste scaring based on different combination of ingredients. Use the model to verify taste results and predict a best combination.

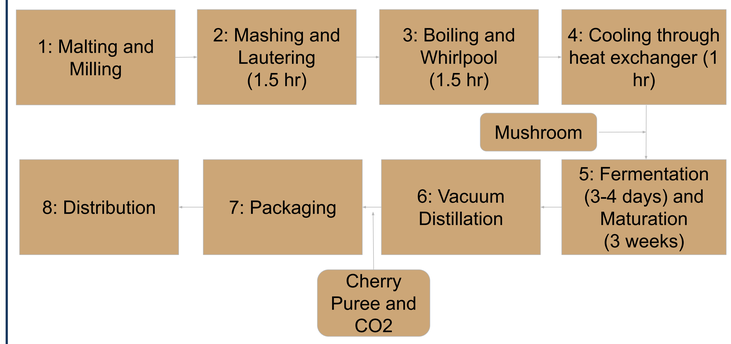

Figure 5 - Manufacturing Highlights
Three unique manufacturing process in our beer production: step-wise mashing, limited fermentation using S. ludwigii, and continuous vacuum distillation.

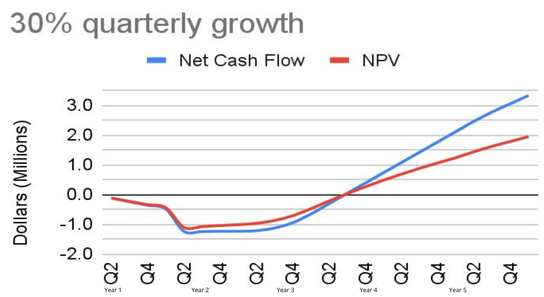

Figure 6 – Financial Outlook

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