

BOULDER TEA BREWERS

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Profit

Before Maximization

\$3,208.97

After Maximization

\$6,773.42

More than double the amount, with a more
than **%111** increase!

We have used every gram of ingredient in our inventory narrowing our slack to exactly

0g !

Optimization Reports

By using all our ingredients we save
\$5,509.06

To add, we were given a **\$1000** budget, and we still have more than **\$174** left.

BUT HOW?



INTRODUCING OUR NEW DELICIOUS TYPES OF TEA!

- Cinnabon Heaven - Calmness
- Cold Reliever - Tuity Fruity
- Sweet & Spicy - Floral
- Mint Magic - Lemon Mint
- Rare Combo - Sunshine
- Sweet Peppermint - Spicy Lemon
- Fitness

CINNABON HEAVEN

Cinnabon Heaven generates a profit of

\$3.72 per box

As a result, it is ranked

1st

Highest profit among all teas! It holds this title with **Peppermint Patty** tea which shares the same profit.



TUITY FRUITY

Tuity Fruity is popular among fruit fans, fitness enthusiasts, and celebrities.

This can be attributed to its photogenic looks, great taste, and the ability to serve it both hot and cold!

It generates a profit of

\$3.04 per box

As a result, it is ranked

2nd

Highest profit among all teas!



COLD



HOT



COLD RELIEVER

Since we are in the winter season and are in a middle of a COVID pandemic, we anticipate Cold Reliever to become one of our best sellers. It is the best drink and healing solution for colds and it could also help ease some COVID symptoms!

We believe Cold Reliever should be the highlight of our upcoming advertisements in order to maintain our competitive advantage.



FLORAL

Floral is the new tea we see as
“The Hidden Gem”

It is made of most of our floral ingredients and we believe it has a high potential of success similar to Tuity Fruity, due to its photogenic/colorful look and delicious taste.

For that, we would like our marketing team to put Floral tea under the spotlight both in advertisements and in e-commerce.

SOLVER MODEL

Target Cell (Max Profit):

= SUMPRODUCT(# of Boxes, Profit of Each Box)

Changing Cells (Number of Boxes)

Constraints:

Number of Boxes
(Changing Cells)
must be Integers

Amount Used \leq
Amount Available

Amount Produced
 \geq 200 (Min
Demand)

Non-negative
Numbers

TEA ANALYSIS

According to our data, our tea profit per box range from **\$0.34** to **\$3.72** with a mean of **\$1.77**

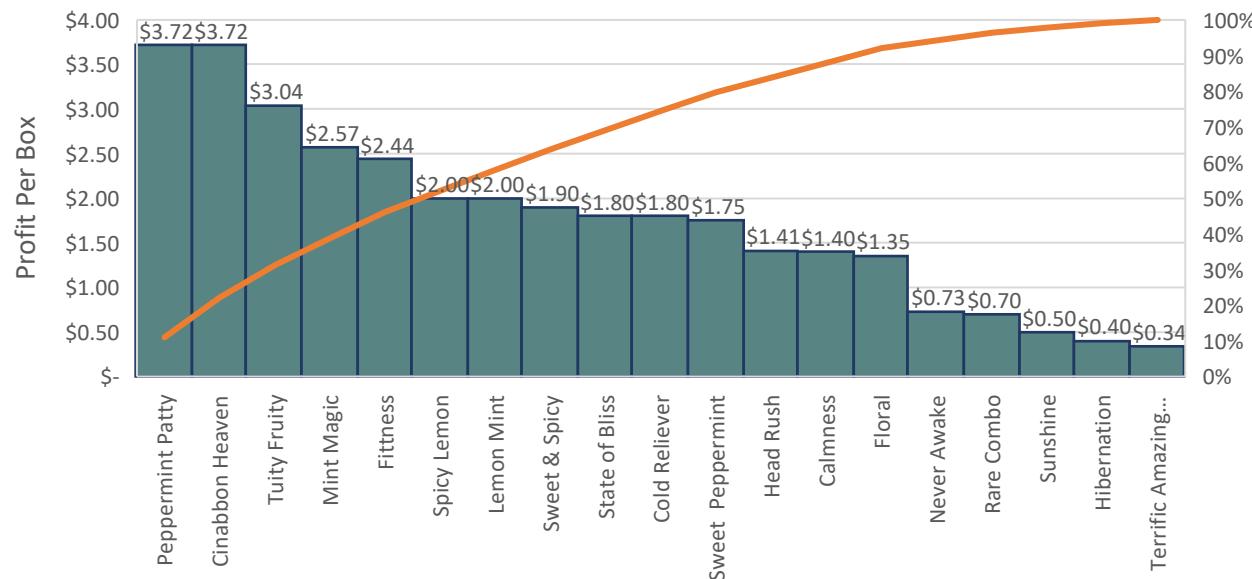
The teas with the highest profit are **Peppermint Patty** and **Cinnabon Heaven** while **Terrific Amazing Morning** lends the lowest profit.

As for the number of boxes, we are making mostly even numbers across the board by meeting or exceeding customer demand.

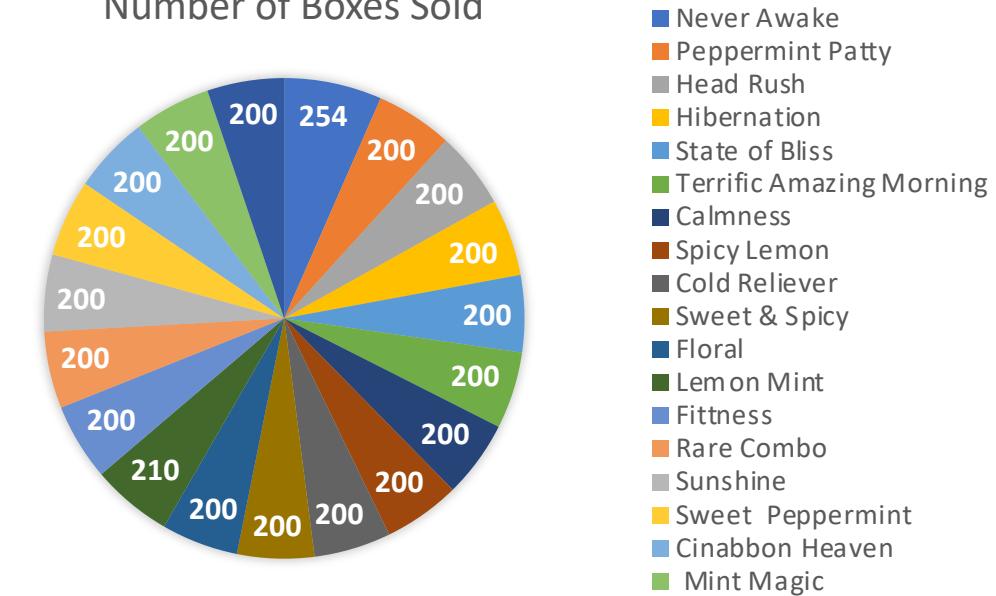
Profit Per Box

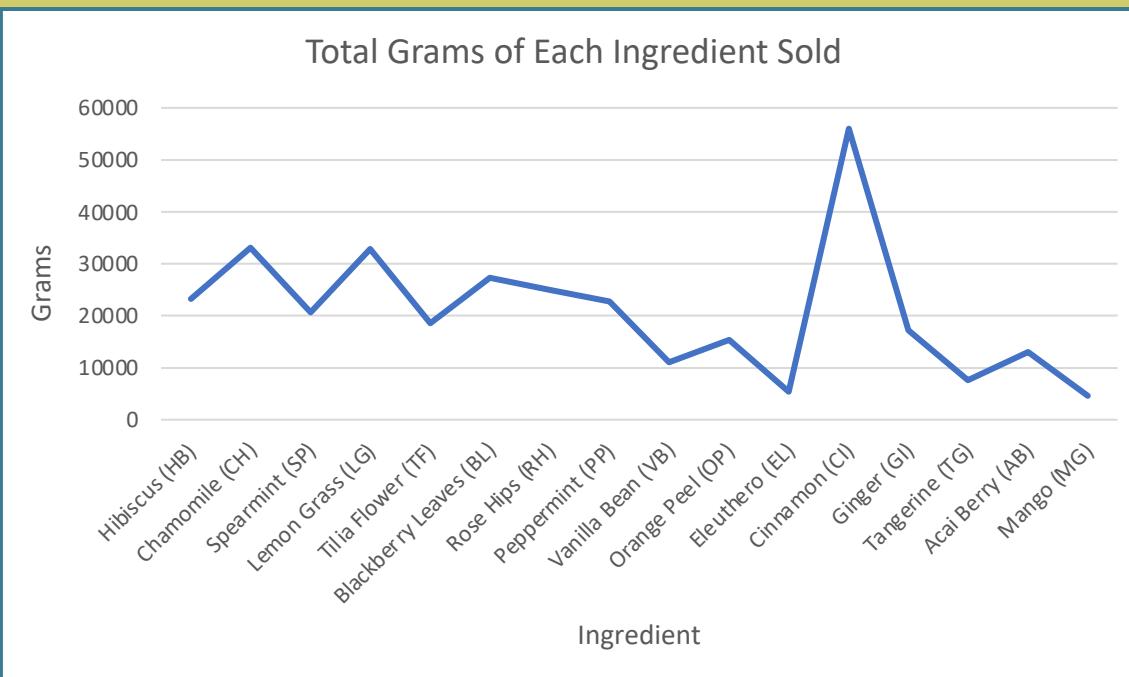
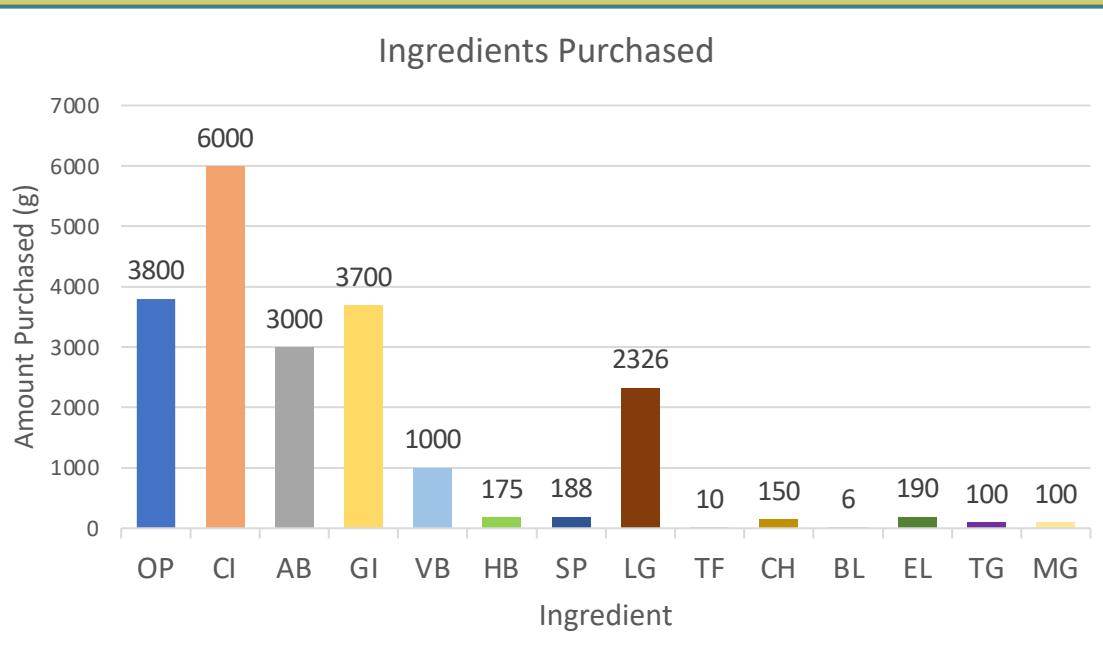


Profit of Tea Per Box



Number of Boxes Sold





INGREDIENT ANALYSIS

At **6,000** grams, Cinnamon was the ingredient we purchased and sold the most and used in **9** different types of tea

The only other ingredient that was used in **9** different types of tea was Lemon Grass which we bought **2,326** grams of and used **32,836** grams

Mango was the ingredient that was used the least amount of at **4,900** grams, and we only bought **100** grams of this ingredient

DESCRIPTIVE STATS

We can employ a Project Manager to lead the team in charge of the new teas project. The team could keep track of the descriptive statistics, analyze them, and update them when we change anything to see if we are improving by making that change or if we shouldn't make the change.

Profits of 1 box across all tea types

Profit	
Mean	1.766842
Standard Error	0.233431
Median	1.8
Mode	3.72
Standard Deviation	1.017503
Sample Variance	1.035312
Kurtosis	-0.30874
Skewness	0.461444
Range	3.38
Minimum	0.34
Maximum	3.72
Sum	33.57
Count	19

- Avg. Profit of just old teas is \$1.40,
Avg. Profit of just new teas is \$1.94

Approximately
<- symmetrically skewed ->
- Range of Profits is the same as Cost. However, the min and max of profits are both lower than cost

Cost of 1 box across all tea types

Cost	
Mean	3.733158
Standard Error	0.233431
Median	3.7
Mode	1.78
Standard Deviation	1.017503
Sample Variance	1.035312
Kurtosis	-0.30874
Skewness	-0.46144
Range	3.38
Minimum	1.78
Maximum	5.16
Sum	70.93
Count	19

Very large difference between the mean -> and median due the large range and standard deviation

Highly positively -> skewed

Amount purchased of individual ingredients

Amount Purchased (g)	
Mean	1481.786
Standard Error	518.585
Median	189
Mode	100
Standard Deviation	1940.367
Sample Variance	3765026
Kurtosis	0.510894
Skewness	1.216204
Range	5994
Minimum	6
Maximum	6000
Sum	20745
Count	14

Tea	Total Costs	Z-Score
Never Awake	\$ 1,211.58	1.997115554
Peppermint Patty	\$ 356.00	-1.8037834
Head Rush	\$ 818.00	0.248643393
Hibernation	\$ 1,020.00	1.146024806
State of Bliss	\$ 740.00	-0.09787022
Terrific Amazing Morning	\$ 1,032.00	1.199334593
Calmness	\$ 820.00	0.257528357
Spicy Lemon	\$ 700.00	-0.27556951
Cold Reliever	\$ 740.00	-0.09787022
Sweet & Spicy	\$ 720.00	-0.18671987
Floral	\$ 830.00	0.30195318
Lemon Mint	\$ 735.00	-0.12008263
Fitness	\$ 612.00	-0.66650795
Rare Combo	\$ 960.00	0.879475871
Sunshine	\$ 1,000.00	1.057175161
Sweet Peppermint	\$ 750.00	-0.0534454
Cinnabon Heaven	\$ 356.00	-1.8037834
Mint Magic	\$ 586.00	-0.78201249
Tuity Fruity	\$ 492.00	-1.19960582

Z – SCORES

The Z-score for the Never Awake tea is the highest of all the teas.

Cinnabon Heaven has the lowest Z-score below average.

Professional Recommendations

- ❖ We recommend our marketing team to put our new teas under the spotlight. Even though the new teas were mostly successful, we believe it has a higher potential and will help us maintain our **competitive advantage**.
- ❖ We can develop an **information system** that notifies us when ingredients are close to getting out of stock to restock them in a timely manner.
- ❖ We should have a special focus on Cinnamon since it is the ingredient we use the most.



THANK YOU FOR WATCHING