

# To Study the Evolution of Wine: Bottle to Can

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## Abstract

Glass bottles that we are so familiar with were introduced in the 17<sup>th</sup> century by the Romans, before that wines were produced and stored in huge clay pots. These pots were also transported to various countries to trade wine. Later, transportation became a tedious task in these clay pots because wine used to get cooked during transportation due to lack of temperature control. This led to the discovery of wooden barrels. They were easy to transport and also contributed in softening the harsh tannins in wine as well as gave a peculiar smoky flavour to the wine. The wine industry has changed and evolved over the past few decades. Wine industry in India is also trying to catch up with the global market. New trends are getting introduced regarding the way wine can be served to the consumers in more convenient and more attractive way. One of the new trends in wine, introduced in Indian market is 'Wine in a can'. This concept will change the perspective of people about wine. The concept of canned wines will be a great heads-up for the amateurs who are new to wines and are eager to learn. There are many people who dislike wines due to various reasons such as they are very expensive, low alcohol content; people don't like the taste of wine and most importantly lack of knowledge about wines. But with canned wines being introduced in the market more and more people would be curious to find out how a canned wine would really taste like. Cost of this product is so economical that it will be the major factor encouraging people to buy more and more canned wines.

**Keywords:** Can, Wine, Economical, Wooden Barrels, Cooked Wine, Tannins

## INTRODUCTION

Storing wine in a glass bottle was not introduced till mid-17<sup>th</sup> century. In fact, the storage vessels evolved by first storing in 'Kvevri' a huge earthen jug in which wine was made right from crushing grapes till aging. These

jugs were buried in the ground to maintain the required temperature for wine.

Later, clay flasks known as 'Amphorae' were introduced as they resembled modern day glass bottle with slim neck to reduce the amount of wine exposed to oxygen. These amphorae were easy to transport as they had handles near the neck. Over the period, people saw that at some places wooden barrels were used to store and transport beer so this method of storage was also adopted. More often than transport, the wine would be spoilt because; wine might get oxidized due to contact with oxygen this will spoil the flavor and during transportation the temperature required to keep the wine fresh was nearly impossible due to which the wine gets cooked and unfit for consumption.

The introduction of glass changed everything. Glass bottles were introduced in 17<sup>th</sup> century and are present till date and probably will be there in future. Old bottle of wine attracts many eyes because it has been aged for a long time and holds a special place at the table which might contain very complex flavors. A Glass bottle plays a vital role in bottle aging wines which helps minute particles of oxygen pass through the cork and contact with the wine. This helps in oxidation of wine which mellows down harsh tannins and makes the wine more palatable. In last few decades, driven by the demand for small format, convenient and environmentally sustainable packaging of wine the concept of canned wine was introduced. Primarily, an attempt of storing wine in a can was not a great success. It faced problems such as the instability of packaging, packaging diseased wine and too much oxygen in the package. However, these challenges were resolved and what we have today is a canned wine at an economical price and that can be carried anywhere without any concerns about breakage or spillage.

In India, there are so many people who still have misconceptions about wine and its taste. For beginners who are facing problems such as which wine to taste

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firsts, a bottle of wine is very expensive, carrying a bottle of wine with glasses is a very tricky task, etc. Wine in a can would be a great heads-up for such enthusiasts as well as people who are willing to try new things.

## History: The Early Days of Wine Transportation

Wine is difficult to transport since your storage container must accomplish the following four goals:

- The vessel needs to be sealed off from the air to stop oxidation.
- The container must be robust enough to resist breaking but light enough to be portable (especially when hand labor was the rule).
- Before being resealed, the vessel frequently needs to be opened.
- The container itself shouldn't have an effect on the wine (this needs to be taken into consideration primarily as compared to other three goals).

The vessel must also be kept in a setting with a steady temperature in addition to these goals. Wine will “cook” and lose flavor if heated for an extended period of time.

## The Kvevri – Invented in Georgia Circa 6000 BC

Wine was probably not transported in kvevri, also spelled qvevri. For climate control without electricity, they were quite huge and hidden in the earth. Although it is difficult to pinpoint exact dates for the invention of these pots, it is known for certain that the Ancient Georgians used these sizable, beeswax-coated earthenware jars as early as 6000 BC. They were utilized in every step of wine production, from grape crushing to maturing, and are the oldest storage vessel to date. The final product was a very tannin-rich wine that had been matured in earthenware.

Wine, olive oil, and other precious liquids were traditionally transported in amphorae in antiquity. Amphorae came in a variety of sizes, comparable to both the modern bulk transport types and the sizes of typical wine bottles today. Nearly all the wine-drinking and -producing civilizations in the Mediterranean and Mesopotamian regions gradually adopted these wax-lined (pine and bees wax were common) ceramic containers invented by the Egyptians. They were simple to make and, more significantly, simple to transport. Four functions were supplied by their round, tapered, two handle, long, slender neck design:

- The wine would have been exposed to less oxygen because to the long, thin neck.
- The amphora itself could be easily buried when cooled for long-term preservation thanks to the tapering bottom, which also allowed sediment to settle.
- The ships accommodated them properly.
- The handles made them easier to carry.

The amphora's tapering bottom also worked well to prevent its contents from splashing around when being transported by sea. This was done by placing each amphora partially in the sand after filling a ship's hold with it. The long neck of the amphora, which protects the wine from oxygen, and the punt, the concave bottom that most wine bottles have to collect sediment, are features that make the amphora resemble a contemporary wine bottle.

For many ancient people, sealing an amphora was a challenge, and the techniques changed over time. A clay stopper was once used to seal an amphora, but later seals made of reeds and leaves wrapped in semi-permanent wet clay were also employed. Subsequently, rags, wax, and today's preferred materials were tested by the Greeks and Romans.

## THE MOVE TO OAK BARRELS IN ROME

As the Roman Empire grew, it encountered different nations, many of which had developed technologies. The Romans discovered that people transported beer in wooden barrels that were fastened with metal hoops.

The Romans had to figure out how to transport wine over large distances by land as opposed to by water as they made their way further north. Wooden barrels offered a fantastic remedy. The Romans understood that aging wine in barrels had its own unique effects on the wine by enhancing flavor and tannins. Also, they had seen that wine transported over long distances in barrels frequently tasted better when it left; the use of oak was a happy accident.

In the centuries that followed, both winemakers and consumers became aware of the advantages oak provided for wine. Yet, both the quantity of oak trees in Europe and the wood's tight grain, which provides for a waterproof barrel, had a significant role in the decision to utilize oak over other woods.

## THE FAMILIAR GLASS BOTTLES ARRIVE

- The 17<sup>th</sup> century saw the invention of the glass bottle that is so common today. Although the shapes varied from one maker to the next, the fundamental concept remained the same. The wine bottles featured a long, narrow neck made of tough, black glass, and a cork sealed the mouth. Over time, the wine bottle's shape changed. During those years, the Belgium shape or onion shape was typical. The bottle shape eventually began to resemble the more recognizable style that we see today. The early 19th century saw the beginning of the contemporary bottle shape. In the 1820s, the first bottles with contemporary designs began to appear on the market. In the contemporary wine industry, there are five main bottle types that are particularly popular:
- Bordeaux Shape
- Burgundy Shape
- The Rhine Shape
- Chianti Shape
- Champagne Shape

## INDUSTRY TRENDS

Imagine being able to bring a nice wine with you when you go on a hike or go for a picnic. Certainly, you are welcome to bring a bottle and some wine glasses. Nonetheless, canned wines are the new, rapidly expanding, and increasingly popular segment of the wine industry.

### Are Canned Wines Made Same as Bottled?

To start the time-consuming process of making wine, grape varieties are selected when they are perfectly ripe and plucked, de-stemmed, and then pressed. Depending on whether a white or red wine is being produced, yeast must be added at a precise point in the process to start the fermentation process, which converts sugar to alcohol.

In order to develop a certain flavor, a winemaker may choose to age the wine for a set amount of time in stainless steel tanks, oak barrels, or other containers.

Canned wine may appear to have undergone a completely different procedure simply because it is stored in a different container, but it is actually prepared in the same manner. Although a winemaker may decide that some

types of wine are better suited for canning than others, the production process itself does not change.

### Will All Wines Perform Well in a Can?

While it might appear that drinking wine from a can is the most practical alternative, we might not be receiving what we're expecting.

It matters which grape types can be used to make canned wine. Wines that are fruitier, more fragrant, and brighter as well as those without complex characteristics will fare better in cans. Reds that are complex, robust, or oak-infused don't. An oaked buttery chardonnay wouldn't go well with a clear crisp essence of a can, despite the fact that most whites fare well in a can because they are a little more acidic and lively. An oak-aged tempranillo would not perform as well because of its diverse flavors as a rose does since it lacks harsh tannins and oak.

This explains why there are only a few options and mostly one sort of canned wine.

### Canned Wines May be Better than Bottled for One Reason

Cans may be more environmentally friendly than bottles, regardless of how it impacts the flavor or the aesthetics of tinned wine compared to bottled wine. Both aluminum cans and glass wine bottles can be recycled completely, but which is simpler? According to a wine industry estimate, in 2011 80% of wine bottles ended up in landfills rather than being recycled. Aluminum recycling doesn't need a lot of energy, and cans can be recycled indefinitely. As cans can be recycled and reused repeatedly, the majority of cans you see on the market are actually 100 percent recycled.

### Is it Possible to Age Canned Wine?

When a bottle of wine tells a tale, encapsulating the events of that particular vintage, it may be worthwhile to save it until a particularly special occasion. Yet, experts claim that depending on the type of wine, the majority of the wine available on retail shelves isn't truly supposed to be aged. Usually, the pricing will indicate whether the wine should be aged or drunk right away, along with the wine's color and variety. Due to their bright, fruity characteristics, Sauvignon Blanc, Moscato, or even rose

wines are often not meant to be kept in the bottle for an extended period of time.

The experts advise consuming wine in cans soon after they are made. The majority of winemakers are producing these light choices to be consumed during the year wine is produced because the cans aren't made to allow any form of aging..

## Is Aluminum CAN Better Option for Environment?

Cans burn less fuel since they are much lighter than glass. Several experts contend that once in circulation, recycling aluminum is simpler and more energy-efficient than recycling glass. Compared to recycling glass bottles, recycling can save up to 90% of energy. Nevertheless, producing the same amount of glass from sand can need 10 times as much electricity as producing a ton of virgin aluminum from bauxite.

The extraction of bauxite before it is transported to manufacturing facilities can be partly blamed for the greatly inflated energy consumption for raw aluminum. Up to 4 tonnes of bauxite are used to make 1 ton of aluminum, which is then crushed and roasted to eliminate unnecessary components.

Because of their tiny carbon footprint, cans are the obvious eco-friendly alternative if you can make sure they come from recycled sources. The bauxite mining business is expanding quickly, leaving havoc in its way and needing enormous energy consumption to transform it into usable aluminum, but, as a result of an ever-increasing demand for new tins.

## LITERATURE REVIEW

- How is Canned Wine Innovation Evolving?

Wine in cans is more environmentally friendly than wine in glass since it is easier to recycle, lighter, and more transportable. In on-premise establishments like bars and pubs, wine in cans can take up less room. They also address customer worries about waste and wellness because most cans are about the size of a half-bottle of wine or less, allowing for better portion control. Because you have to buy a complete bottle and you might wind up throwing half of it away, Mettyear notes that this deters novice wine consumers from trying new wines.

[Source - <https://www.theiwsr.com/how-is-canned-wine-innovation-evolving/> ]

- Canned Wines Market Size, Share & Trends Analysis Report by Product.

With a revenue share of more than 64% in 2020, the distribution channel sector for supermarkets and hypermarkets was the largest. Major product manufacturers are making their items available through offline sales channels due to the rise in supermarkets and hypermarkets around the world. To enhance customer penetration, major grocery chains are opening new outlets in numerous places. For instance, SPAR announced in January 2020 that their affiliated businesses are opening additional locations across Spain to meet the escalating consumer demand.

[Source - <https://www.grandviewresearch.com/industry-analysis/canned-wines-market> ]

- Quantitative Wine in a Can survey and Report (2018).

Another major factor driving the growth of the wine-in-a-can business is its portability and ease, which allow it to be served in settings where traditional wine in bottles or glasses cannot. Aluminum wine can packaging makes wine more portable and convenient, allowing for new wine consumption based on two new occasion dimensions: (1) place and (2) event. Location occasions include activities such as boating, beachgoing, hiking, camping, tailgating, pool parties, playing golf, and other outside activities where regular bottles are impractical. Single-serve wine should be made available for events like weddings, baby or bridal showers, graduation celebrations, and family barbecues.

[Source - [https://www.wicresearch.com/uploads/5/1/8/3/51833163/wicr-2018-1\\_fr.doc.pdf](https://www.wicresearch.com/uploads/5/1/8/3/51833163/wicr-2018-1_fr.doc.pdf) ]

- Wine in a can is edging out corks and glass bottles, and the global trend is now in India (Anoothi Vishal Updated: October 13, 2020 20:01 IST).

While market leader Sula had introduced the category in India even before Covid-19 struck, Fratelli had been planning this launch for the previous two years and hurried to complete the project after the pandemic started. With a price of 180 for a 330 ml can and an alcohol strength of 8% ABV, Dia's long-standing brand has debuted a canned version in two sparkling categories: red and white.

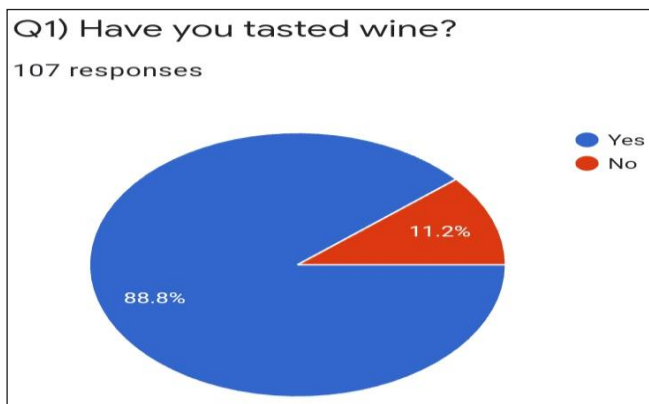
According to Rajeev Samant, CEO of Sula Vineyards, a more expensive still wine in a can will be introduced in the coming months. “The image that it is only cheap or inferior wine in a can is being challenged in the US. Cans are more convenient for customers, more environmentally friendly, easier to carry and store, and recyclable. He adds that he is counting on premium wines across Sula’s range in the new normal, when people have been preferring better quality wines for at-home consumption. “I am not going to do wines below ₹500. My focus now is wines in the ₹1,000-₹2,000 bracket,” he says.

[Source - <https://www.thehindu.com/life-and-style/food/raise-your-wine-in-a-can/article32842193.ece> ]

## OBJECTIVES

- To find out awareness of canned wine among people.
- To study potential market for canned wines.
- To study whether the canned wines taste same or better than the bottled wine.
- To study how the cost of canned wines will affect the preference of people.
- To find whether people will opt for canned wines than bottled wines.

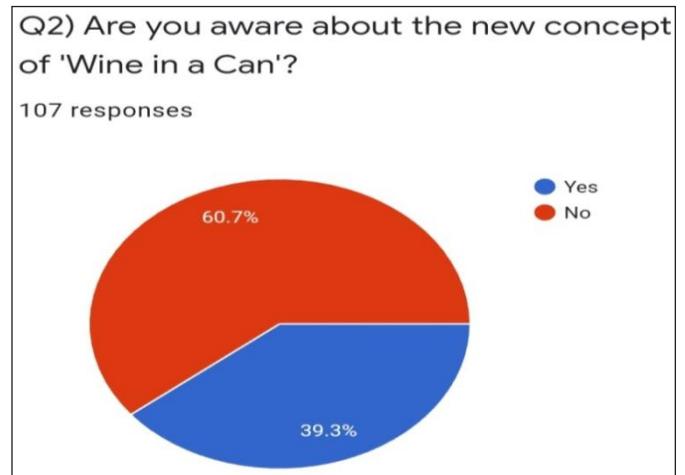
## DATA ANALYSIS



The purpose of this inquiry was to gather information on respondents’ wine consumption. Of 107 replies, it is evident that 95 respondents, or 88.8%, have had wine at least once or more times, while only 12 of the 107 respondents, or 11.2%, have never had wine.

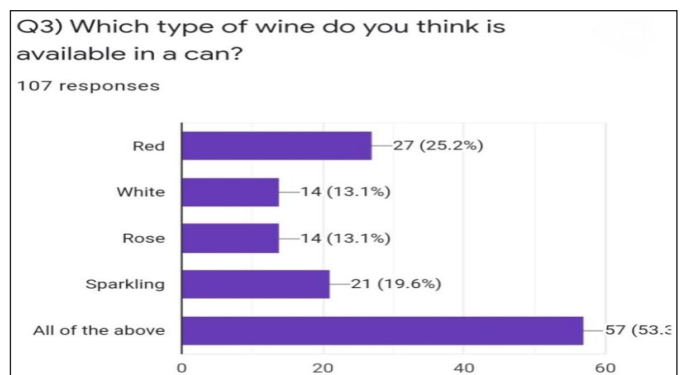
Yet while we can say that the remaining 88.8% (95 people) are at least aware of what a wine is and how exactly it tastes, this does not necessarily imply that they are fully

knowledgeable about wine. 95 persons who have tried wine, the bulk of whom being young people between the ages of 21 and 26. So we can say that people from teenage till their mid-20s accounts to the major chunk of response where they have tasted wine at least once or more than one time of 107 individuals, 65 individuals, or 60.7%, state that they are unaware of the notion of “Wine in a Can,” while 42 individuals, or 39.3%, indicate that they are.



In contrast, HM students and teachers are always reading new articles on food and drink; they travel, and they must always stay current in order to inform students about current trends.

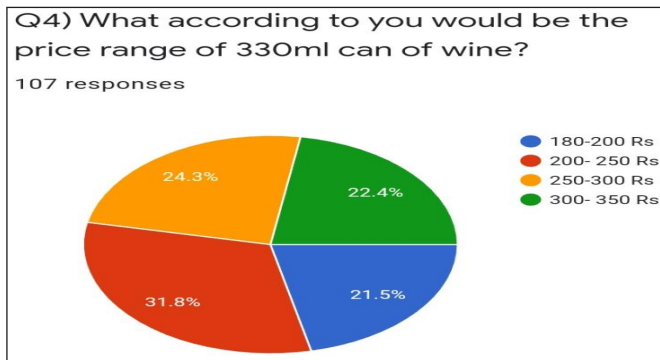
So, we can draw the conclusion that vineyards need to engage in more marketing to raise public knowledge of canned wines.



Red, White, Rosé, and Sparkling are the four main categories of wine. Many wineries have offered canned wines to the market based on these fundamental wine kinds.

We may therefore draw the conclusion that there is still confusion among consumers regarding which wine is

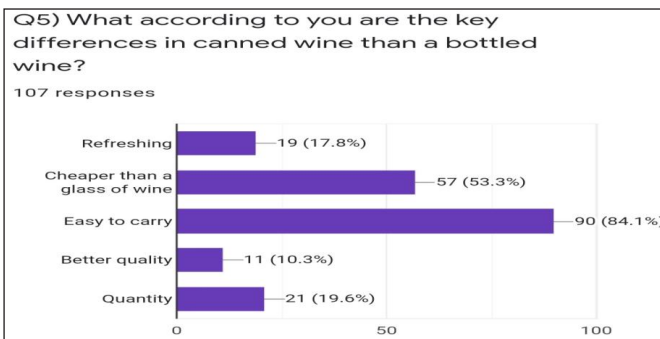
actually offered in a can and that various measures must be used to raise this understanding. But, a really positive trend is that more consumers are gravitating toward all varieties of wine that are accessible in cans.



According to the pie chart, 34 out of 107 respondents, or 31.8%, believe that a 330ml wine can should cost between 200 and 250 rupees, while 26 respondents, or 24.3%, believe that the price range should be between 250 and 300 rupees.

24 out of 107 respondents, or 22.4%, estimated that a can of wine would cost between 300 and 350 rupees, while 23 respondents, or 21.5%, estimated that a can of wine would cost between 180 and 200 rupees.

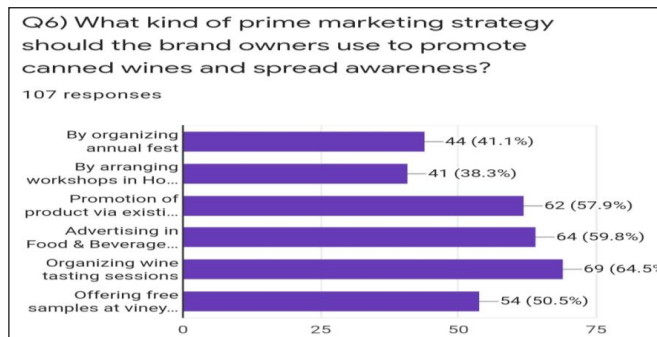
We may thus presume that those who stated that the price range will be between 200 and 250 Rs. at least have some familiarity with canned wines.



Whether or not they had ever tried canned wine, the question asked participants to list the key distinctions between wine in a can and wine in a glass bottle. The objective was to understand their point of view. 19.8% of respondents, or 19 persons, stated that canned wine would be more refreshing than bottled wine. This statement may be accurate because canned wines cannot be aged and should be enjoyed as soon as possible.

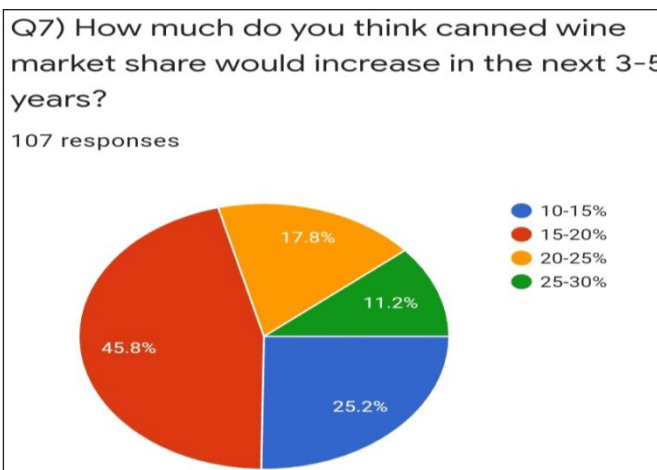
Despite our knowledge of canned wines, the chart indicates that the majority of individuals find that carrying a can of

wine is easier than carrying a glass bottle with glasses and a cork screw while they are traveling. We can also draw the conclusion that consumers prefer convenience over considerations of price, quality, and quantity as the primary distinctions between canned wine and bottled wine.



The accompanying pie chart shows that 44 respondents, or 41.1% of the total, believe that annual festivals at wineries should be held to promote canned wines and raise awareness. 38.3% of respondents, or 41 persons, believe that wineries should set up workshops at schools of hotel management to aid students in understanding and learning new material outside of the classroom as well as to inform them of newly released goods.

We can infer from this that consumers are open to experimenting with new products that are on the market; they simply lack the resources that manufacturers and other brand owners can provide.



As we can see, the majority of 49 respondents, or 45.8% of 107, believe that canned wine's market share should rise by 15-20% from where it is at the moment. 27 people, or 25.2% of them, believe that the market share will rise by 10-15% over the next three to five years.

The main factors influencing the expansion of the canned wine market are its high level of mobility and convenience as well as its optimal wine volume for single-serve. Additionally, the demand for canned wines is being driven by a growing customer preference for ready-to-eat and ready-to-drink items as a result of their busy lifestyles and demanding work schedules. Statistics indicate that through 2028, growth will occur at a pace of between 10 and 13 percent. So, it can be said that 25.2% of respondents were correct about the market share rise of canned wines during the next three to five years.

## FINDINGS

- After distributing the questionnaire to persons of different ages, it appears that those between the ages of 18 and 16 are the most responsive. Of 107 responders, the majority belong to this age group. Apart from these, respondents between the ages of 23 and 58 and 15 and under account for the remaining data.
- Of the 107 respondents, the majority, or 60.7% (65 individuals), indicated they were unaware of the canned wines that were sold in stores; just 39.3% (42 people), however, agreed.
- While very few persons indicated just white and only rosé wine are accessible in cans, more than half of respondents said that all types of wine (red, white, rosé, and sparkling) are available in cans. Quite a good amount of people said that red and sparkling wines are available in a Can.
- The majority of people (31.8%) believe that the price of 330ml of wine in a can would be between 200 and 250 rupees, while 24.3% believe that the price would be between 250 and 300 rupees. A can of wine is thought to cost between 300 and 350 rupees by 22.4% of respondents and 180 to 200 rupees per 330ml by 21.5%.
- The majority of respondents said that the main distinction between canned wine and bottled wine is that the former is much easier to transport and has almost no possibility of breaking, but when carrying a bottle of wine, you also need to carry wine glasses and a corkscrew. The arduous task of carrying a wine bottle requires constant caution.
- The vast majority of respondents believe that canned wine's market share will expand by 15-20% over the next three to five years, while 25.2% believe that canned wine's market share will remain at 10-15%. For the next three to five years, 17.8% of respon-

dents predict that canned wines will have a market share of 20–25%, and just 12 at the very least predict a 25–30% increase.

## SUGGESTIONS

- There are numerous different ways to conduct additional research on this specific subject.
- As of right now, the two main sources of packaging for any alcoholic or non-alcoholic beverage are aluminum cans and glass bottles.
- We may further this discussion by creating a new set of questions.
- Issues include whether recycling glass bottles and aluminum cans has a negative impact on the environment and whether aluminum cans are more environmentally friendly than glass bottles.
- Wineries can advertise new products through a variety of various marketing techniques.
- Vineyards can partner with schools of hotel management to offer faculty and staff members the opportunity to take part in a variety of internships and short courses.
- These internships, where students and faculty can work in different departments of a vineyard during breaks, can last for one to two months. The payment for the internship will entirely be based on government regulations with minimum pay.
- The brand owners of vineyards can advertise their products without focusing on a particular age group in this fashion, and students and instructors can learn a lot of new things in addition to the traditional pen and paper technique.

## CONCLUSION

From the above, we can say most people have tasted wine, but few people are aware about canned wines.

- People between the age group of 21-30 are more in number compared people of age from 30 and above. There are few respondents below 21; as legal age for drinking is 21 and above responses below 21 are not considered for the first question.
- Around 95 people have said that they have tasted wine and only 12 of them have not tasted wine. By this we can conclude that out of 107 majorities of them are aware about wine and how does it taste.

- Many people have said that they are not aware about canned wine; it is possible that these people have never tasted canned wine and it is also possible that they have not read about it in any article. Similarly, 39% people said that they are aware about canned wines so it is possible that they must have read about it in a magazine or maybe even tasted it.
- Looking at the difference between people tasting wine and their awareness about canned wines it is clear that people are just drinking alcohol for leisure purposes and not to increase their knowledge and awareness about new products in the market.
- According to the survey, we can see that majority of people are not aware about canned wines. It could be possible that many of them consume alcohol without actually knowing what they are having which leads to lack of knowledge and unawareness of what is happening in the market.
- To summarize this report, even after promoting canned wines majority people are still aware about it. Vineyards and their brand owners need to put in more efforts to make people aware about canned wine.

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