COURSE GUIDE

HCM 345
WINE AND FOOD PAIRING PRINCIPLES

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INTRODUCTION

Wine is the fermented juice of freshly gathered ripe grapes. It can also be made from other sugar-containing fruits. The combination of food and wine is one of life's great pleasures. A gourmet will seek out not only exotic foods and vintage wines, but also simple food that is well prepared and accompanied by an unpretentious, but quality wine. Over the years, traditions have developed a how-to approach to the marrying of wines and food. Food and its accompanying wine should harmonise well together. The combination should prove most successful so as to please the individual.

There are general guidelines on matching wine and food, hence, the need may arise to recommend to customers which wines to choose to accompany a meal. Such recommendations must consider the identification and style of the wine required as well as the extent to which the wine should be light or full. However, it must be known that customers are at complete liberty to select their wines or other drinks.
The wine/drink list is presented to a customer. The function of this list is similar to that of the menu as both are selling aids. It is therefore necessary that the service staff should have a good knowledge of all the wines and drinks available, as well as an extensive knowledge of which wines are most suitable to offer with certain foods.

ThisCourse Guide tells you briefly what the course is all about, what course materials you will be using and how you can work through the study materials. It suggests some general guidelines for the amount of time you are likely to spend on each unit of the course in order to complete it successfully.

It also gives you some guidelines on your tutor-marked assignments, which will be made available to you at the Study Centre. There are regular tutorial classes that are linked to the course. You are advised to attend these sessions.

WHAT YOU WILL LEARN IN THIS COURSE

In this course, you will learn about:

- vinification
- major wine producing wine countries
- classification of wines
- categories of wines
- components of wines
- general information required on wine
- the role of wine in society

- tasting of wine
- factors affecting the taste of wine
- decanting
- wine and food equivalent
- sensory evaluation of wine
- storage of wines
- spirits
- liqueurs

COURSE AIMS

The aim of the course is to give you an understanding of the meaning of wine and food pairing principles and how these principles can be applied to food and beverage service operations. It is also expected to help you develop skills and adequate knowledge you are expected to exhibit as a connoisseur or a sommelier.

COURSE OBJECTIVES

To achieve the aims set out, the course sets overall objectives. Each unit also has specific objectives. The unit objectives are specified at the beginning of a unit. You should read them before you start working through the unit. You may want to refer to them during your study of the unit to check your progress.

Below are the overall objectives of the course. By meeting these objectives, you should have achieved the aims of the course as a whole. On successful completion of this course, you should be able to:

- explain the concepts of vinification
- list the major wine producing countries and their grouping into new world and old world wine making countries
- explain the classification, categories and components of wines
- providegeneral information required on wine and the role of wines in the society
- discuss the principles of wine tasting and the factors that affect the taste of wine
- explain the meaning and importance of decanting
- discuss wine and food matching principles
- discuss sensory evaluation and storage of wines
- explain spirits and liqueurs.

WORKING THROUGH THIS COURSE

For a successful completion of this course, you are required to go through the study units, reference books, and other resources that are related to each unit.The tutor-marked assignments (TMAs) should be done immediately and submitted to the course facilitator.

The medium and time for the submission of the TMA will be specified later. This is a two- credit unit course, so you are expected to spend a minimum of two hours on it weekly. It is expected that you complete the entire course outline in 15 – 17 weeks.

Listed Below is the components of thiscourse,what you have to do and how you should allocate your time to each unit to complete the course successfully.

COURSE MATERIALS

Major components of the course are:

- Course Guide
- Study Units
- Textbooks and References
- Assignments
- Presentation Schedule

STUDY UNITS

The topics to be discussed in this course have been grouped into units and modules as shown below.

Module 1

Unit 1	Vinification
Unit 2	Major Wine Producing Countries
Unit 3	Classification of Wines
Unit 4	Categories of Wines
Unit 5	Components of Wines

Module 2

Unit 1	General Information Required on Wine
Unit 2	TheRole of Wine in the Society
Unit 3	Tasting of Wine
Unit 4	Factors Affecting the Taste of Wine
Unit 5	Decanting

Module 3

Unit 1 Wine and Food Matching
Unit 2 Sensory Evaluation of Wine
Unit 3 Storage of Wines
Unit 4 Spirits
Unit 5 Liqueurs

The units shall be treated in sequential order.

TEXTBOOKS AND REFERENCES

Dennis Lillicrap& John Cousins (2006).*Food and Beverage Service*.(7thed.). Hodder Arnold.

David Foskett& Victor Ceserani (2007).*The Theory of Catering*.(11thed.).Hodder Education.

John R. Walker(n.d).*Introduction to Hospitality*.4thed.

Bacon, S.D. (1962). "Alcohol in Complex Society." In: D.J. Pittman and C.R. Snyder (Eds).*Society, Culture and Drinking Patterns*. New York: John Wiley and Sons.

Barrows, S., Room, R. &Verhey, J. (Eds). (1987). *The Social History of Alcohol:*

Drinking and culture in modern society. Berkeley, CA: Medical Research Institute of San Francisco, Alcohol Research Group.

Akyeampong, E.K. (1996). *Drink, Power and Cultural Change: A social history of alcohol in Ghana, c.1800 to recent times*. Oxford: James Currey.

"Social and cultural aspects of drinking." A report to the European Commission, March 1998

PRESENTATION SCHEDULE

Specific dates for particular activities, such as submission of assignments, tutorial schedules and examination dates shall be made available to you at a later date. This will enable you plan your activities in the same line. The method of submitting your assignments and receiving other course materials shall be agreed upon on a later date.

When dates are given, remember you are required to submit all your assignments by the due date. You should guide against falling behind in your work.

TUTOR-MARKED ASSIGNMENT

Each unit of this course has a tutor-marked assignment section which you are expected to do at the end of the unit. You are required to keep an assignment file. Out of all the assignments you will do, each shall be marked and converted to three per cent; the best 10shall be selected to make up 30per cent.

FINAL EXAMINATION

The final examination for this course has a total value of 70per cent of the total course grade. It will cover all aspects of this course.

COURSE MARKING SCHEME

At the end of thiscourse, the evaluation shall be as follows.

Table 1: Course Marking Scheme

Assessment	**Marks**
Assignments	30%
Examination	70%
Total	**100%**

COURSE OVERVIEW

This table brings the units and the number of weeks you should spend to complete them. The assignments that follow them are also taken into consideration.

Table 2 Course Overview

Unit	Title of work	Week's activity	Assessment (end of unit)
	Module 1		
1	Vinification	1	Assignment 1
2	Major Wine Producing Countries	1	Assignment 2
3	Classification of Wines	1	Assignment 3
4	Categories of Wines	1	Assignment 4
5	Components of Wines	1	Assignment 5
	Module 2		
1	General Information Required on Wine	1	Assignment 6
2	The Role of Wine in the Society	1	Assignment 7
3	Tasting of Wine	1	Assignment 8
4	Factors Affecting the Taste of Wine	1	Assignment 9
5	Decanting	1	Assignment 10
	Module 3		
1	Wine and Food Matching	1	Assignment 11
2	Sensory evaluation of Wine	1	Assignment 12
3	Storage of Wines	1	Assignment 13
4	Spirits	1	Assignment 14
5	Liqueurs	1	Assignment 15
	Revision		
	Total	**15**	

HOW TO GET THE MOST FROM THIS COURSE

In distance learning, the study units replace the university lecturer. This is one of the great advantages of distance learning. You can read and work through the specially designed study materials at your own pace, and at a time and place that suits you best. The study unit will tell you when to read your other materials. Just as a lecturer might give you class exercise, your study units also provide exercises for you to do at appropriate points.

Each study unit follows a common format. The first item is an introduction to the subject matter of the unit. Next is a set of learning objectives. These objectives let you know what you should be able to do by the time you have completed the unit. You should use these

objectives to guide your study. When you have finished the unit, you must go back and check whether you have achieved the objectives. If you make a habit of doing this, you will significantly improve your chances of passing the course.

The main contentof the unit guides you through the required reading from other sources. This will usually be either from reading sectionor some other sources.

The following is a practical strategy for working through the course. Do not hesitate to contact when you need academic assistance. Below is a guideline on how to get the most from this course:

1. Read this course guide
2. Organise a study schedule. Refer to the course overview for more details. Note the time you are expected to spend on each unit and how the assignments relate to the unit. Important information e.g. details of your tutorials, date of the first day of the semester, are all available. You need to gather together all information in one place, such as your dairy or wall calendar. Whatever method you choose to use, write your dates for working on each unit.
3. Once you have created your own study schedule, do everything you can to stick to it. The major reason that students fail is that they fall behind with their coursework. If you get into difficulties with your schedule, please let your facilitator know before it is too late for help.
4. Turn to Unit 1 and read the introduction and objectives for the unit.
5. Assemble the study materials. You will always need both the study unit you are working on and one of your set textbooks on your desk at the same time.
6. Work through the unit. The content of the unit itself has been arranged to provide a sequence for you to follow. As you work through the unit, you will be instructed to read sections from your set books or other articles. Use the unit to guide your reading.
7. Well before the relevant due dates (about fourweeks before the dates) Access the assignment file to download your next required assignment. Keep in mind that you will learn a lot by doing the assignments carefully.
8. Review the objectives for each study unit and confirm that you have achieved them. If you feel unsure about any of the objectives, review the study material or consult your tutor.
9. When you are confident that you have achieved a unit’s objectives, you can then start on the next unit. Proceed unit by unit through the course and try to pace your study so that you keep yourself on schedule.

10. When you have submitted an assignment to your tutor for marking, do not wait for its return before starting on the next unit. Keep to your schedule. When the assignment is returned, pay particular attention to your facilitator's comments. Consult your tutor as soon as possible if you have any questions or problems.
11. After completing the last unit, review the course and prepare yourself for the final examination. Check that you have achieved the unit objectives and the course objectives.

FACILITATOR/TUTOR AND TUTORIALS

There are eighthours of tutorials provided for this course. As soon as you are allocated a tutorial group, you will be notified of the dates, time and location of these tutorials, together with the names and telephone numbers of your tutors.

Your tutor will mark and comment on your assignments, keep a close watch on your progress and on any difficulties you might encounter. You must mail your tutor-marked assignments to your tutor well before the due date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.
Contact your tutor if:

- You do not understand any part of the study units or the assigned readings.
- You have a question or problem with your tutor's comment on your assignment or with the grading of an assignment.

You should try your best to attend tutorials. This is the only chance to have face-to-face contact with your tutor, and ask questions which are answered instantly. You can raise any problem encountered in the course of your study. To gain the maximum benefit from course tutorials, prepare a list of questions before attending them. You will learn a lot from participating in discussions actively.

SUMMARY

As earlier stated, the course *HCM 345Wine and Food Pairing Principles*is designed to introduce you to the concepts, skills and knowledge required of you as a Sommelier or a Connoisseur. This course will as well equip you with the principles of wine and food pairing.By the time you go through all the modules and units, you will be well grounded in wine and food pairing principles.

We hope you enjoy your acquaintances with the National Open University of Nigeria (NOUN). We wish you success in the future!

MAIN COURSE

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MODULE 1

UNIT 1 VINIFICATION

CONTENTS

1.0 INTRODUCTION

The history of wine spans thousands of years and closely intertwined with the history of agriculture, cuisine, civilisation and humanity itself. Archaeological evidence suggests that the earliest known wine production occurred in Georgia around 8,000 BC, with other notable sites in Iran and Armenia dated 7,000 BC and 6000 BC respectively. Evidence of the earliest wine production in Europe were uncovered at archaeological sites in northern Greece (Macedonia), dated to 6,500 years ago. These same sites also contain remnants of the world's earliest evidence of crushed grapes. In Egypt, wine became a part of recorded history, playing an important role in ancient ceremonial life.

Wine was common in ancient Greece and Rome, and many of the major wine-producing regions of Western Europe today were established with Phoenician and later Roman plantations. Winemaking technology, such as the wine press, improved considerably during the time of the Roman Empire; many grape varieties and cultivation techniques were known and barrels were developed for storing and shipping wine.

In medieval Europe, following the decline of Rome and its industrial-scale wine production for export, the Christian church became a staunch

supporter of the wine necessary for celebration of the Catholic Mass. Whereas wine was forbidden in medieval Islamic cultures, its use in Christian libation was widely tolerated. Wine production gradually increased and its consumption became popularised from the 15th century onwards and eventually establishing growing regions throughout the world.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain vinification
- list the types of vinification
- discuss vine specie.

3.0 MAIN CONTENT

3.1 What is Vinification?

Vinification is the art of wine making. This lengthy and delicate process starts with selecting the right grapes to use in producing the liquor. It essentially consists of the transformation of grapes' natural sugars by yeast. The major process in this art is fermentation. The sugar of grape is converted to alcohol and carbon dioxide by yeast. This process is vital to the making of alcoholic beverages. Throughout the vinification process, the winemakers (vinters) express their individual talents by nurturing their raw materials, and helping them evolve into a vast and original ensemble of aromatic hues.

3.2 Types of Vinification

Generally, vinification is divided into two types:

- Production of still wine, which does not use the carbonation process, and
- Production of sparkling wine, which makes use of the carbonation process.

There are also:

- Classic vinification: This type of vinification process is geared towards producing white wines that are full of colour and structure, containing enough phenolic compounds to support prolonged aging in oak barrels.
- Technological vinification: This type of vinification process is geared towards producing fresh wines with intense fruity and floral flavours and light colour, suitable for earlier consumption. In this instance, fermentation with no skin contact is employed, with or without decanting and under strict temperature control.

3.3 Vine Specie

The vine is a climbing plant with a woody stem, the fruit of which is known as the grape. It is of the genus *vitis*, and of numerous species and varieties, the primary species being the *Vitisvinifera* of the old world. The vine species that produce grape suitable for wine production, and which stocks most of the vineyards of the world is named *V. vinifera*. Most species now planted in Europe and elsewhere have evolved from this specie through crossbreeding; to suit local soils and climates. The same grape may be given different names in different countries. However, a number of grapes have become known to have distinctive characteristics.

3.3.1 The Grapes

The grape consists of a number of elements:

- the skin which provides tannin and colour
- stalk which provides tannin
- pips which provide bitter oils
- pulp which contains sugar, water, fruit acids and pectins.

The yeast that is needed for the fermentation process is found on the outer skin of the grape fruit as a whitish bloom. The colour of wine comes from the skin. Hence, red wines are made from red grapes while white wines are made from white grapes. White wines can also be made from red grapes provided the skin is removed before fermentation begins.

The quality of the grapes determines the quality of the wine more than any other factor. Grape is usually affected by the variety, as well as the weather during the growing season, soil mineral and acidity, time of harvest, and pruning method.

Grape varieties are landmarks on the map of wine. The wine drinker finds it useful to know the variety used because this is a major clue to the taste and character of the wine in the bottle. A wine made from chardonnay, for example, will have certain taste characteristics, wherever in the world, it is made, but knowledge of the main grape varieties is a most useful tool in wine choice.

Despite the very large number of vine varieties, a few have been selected by winemakers as having special characteristics, and these have become increasingly international. These varieties all originate in classic European vineyards, and they are linked in the minds of wine lovers and winemakers across the world with classic French and other wines. Understanding the types of grapes used in wine and their characteristics is vital to getting a good understanding of wine.

There are over 5,000 varieties of wine grapes. Some of them include:

Auxerrois: Also known as Malbec or Cot. It creates a neutral fruity and soft wine.

Barbera: Barbera is a low-tannin grape known for its tarry flavour.

Cabernet Franc: A "parent" of the Cabernet Sauvignon grape. It is added in small amounts for flavour.

Chardonnay: This is a fresh, fruity grape grown in Burgundy, Champagne, California, Australia, and South Africa. It is one of the most popular and easiest to grow white grapes - it buds early, grows easily and has high ripeness levels.

Chenin Blanc: This grape makes a light, fruity wine.

Cinsaut: Also known (incorrectly) as *Hermitage*, this grape is mostly used for blending with other, stronger varieties.

Colombard: These grapes end up making a wine with "tropical fruit" overtones, a light wine to go with seafood.

Cortese: This the primary grape for Gavi wine;itripens early and makes a neutral white wine.

Gamay: This is the grape used in Beaujolais Nouveau wine, from France.

Gewurztraminer: The first part of the name literally means "spicey" in German. It has a floral taste with nutty tones.

Grande Vidure: This is also known as the Carmenére grape, this grape was best known for its use in Medoc wines.

Grenache: Grenache is most often used for rose wine. It is the second most planted grape in the world.

Pinotage: This wine was developed in the early 1900s and used primarily by South Africans.

Maréchal Foch: This is an early ripening grape, which has small berries in small clusters. The vines are hard, though, and make a good range of red wines.

Merlot: This is an early ripening grape, with gentle flavours of cherry, honey, and sometimes mint.

Muscat: This wine has a grapey-tasting; it contains grape that does not become ripe easily.

Nebbiolo: This is a late ripening grape that is known for being tannic, pruny, tarry and chocolaty.

Pinot Blanc: This grape has a flavour very much like Chardonnay wine.
Pinot Noir: These grapes are softer and earlier ripening than Cabernet grapes, and are sensitive to conditions.

SELF-ASSESSMENT EXERCISE

i. What is vinification?
ii. State the types of vinification.
iii. What is the vine specie?

4.0 CONCLUSION

We have explained what vinification is, the types of vinification, the vine specie and highlighted the role of the vine specie in wine making. A sommelier needs to have a good knowledge of the raw materials that go into wine making as well as the vinification method to have a good mastery of his carrier.

5.0 SUMMARY

Vinification is the art of winemaking. The making of good wine is dependent on the quality of the grape variety, type of soil, climate, preparation of vineyards, and method of winemaking.

Wine making essentially involves the conversion of grapes' natural sugar to alcohol and carbon dioxide by yeast in the process of fermentation.

The major types of vinification are production of still wine and production of sparkling wine. The most important winemaking grape variety is the *Vitisvinifera*.

6.0 TUTOR-MARKED ASSIGNMENT

1. List and describe some grape varieties.
2. Discuss the role of vine specie in winemaking.

7.0 REFERENCES/FURTHER READING

Foskett, D. & Ceserani, V. (2007). *The Theory of Catering.* (11th ed.). Hodder Education.

Lillicrap, D. & Cousins, J. (2006).*Food and Beverage Service* (7th ed.). Hodder Arnold.

Walker, J. R. (2005). *Introduction to Hospitality*. (4th ed.).

UNIT 2 MAJOR WINE PRODUCING COUNTRIES

CONTENTS

1.0 INTRODUCTION

In Unit 1, we learnt about vinification, types of vinification and the vine specie. In this unit, we shall look at the worlds of wine, their characteristics and differences.

Wine regions can be categorised into old worlds and new worlds. Old world wine regions date back to the Roman Empire era and include France, Italy, Germany, and Spain. These European regions had years to witness the impact of *terroir* (local soil) on wine production and refine their vinification methodology. They emphasise *terroir* and traditions in vinification.

The new world wine regions include Australia, America, Latin America, South Africa, and New Zealand. Without years of *terroir* knowledge, these regions rely on technology to obtain good yield and quality wines. For example, many Australian and Californian vineyards rely heavily on oak aging and natural compounds to enhance structure and flavour.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe the new world and the old world
- identify the characteristics of the new world wine
- differentiate between the worlds of wine.

3.0 MAIN CONTENT

3.1 The New World Winemaking Countries

New world wines are those wines produced outside the traditional winemaking areas of Europe, in particular from Argentina, Australia, Canada, Chile, New Zealand, South Africa and the United States.

Argentina

Argentina is the world's fifth biggest wine producer. It has a long tradition of winemaking under the Spanish, going back to 1557, but more recent immigrants, notably Italians and Germans, have influenced the industry. The long history of viticulture in Argentina has brought forth the evolution of many local varieties, but perhaps the most typically Argentine grape is the Torrontés, which makes an aromatic white wine. However, Argentines love red wine to go with their famous steaks. Malbec has proven to be the most successful variety in export markets, with Barbera and "Bonarda" (now known to be Corbeau, a minor variety from Savoie) being blended into more affordable wines.

Australia

Vine cuttings were brought from South Africa to Australia and this marked the beginning of wine production and wine exports. By the 1880s, Australian wines were winning prizes in Europe. With time, there was a revival of interest in table wines, which culminated in Australia selling more wine to the United Kingdom than did France in 2000.

Australian wines were at some time criticised for being over-oaked and over-ripe, but today, Australian winemaking is one of the most sophisticated in the world. Several regional specialties have emerged which are perhaps the finest fortified wines of the new world.

Canada

Canada followed a similar path to the eastern United States - early attempts to grow *Vitisvinifera* failed, leading to a significant export industry based on *Vitislabrusca* and *Vitisriparia*, fortified to disguise the 'foxy' aromas. The country had its own version of prohibition until 1927, and after its ended red tape inhibited the industry until 1974. In the following years, improved viticulture and grape varieties allowed a substantial expansion of the industry in the 1990s, centred around the parts of Southern Ontario warmed by the Great Lakes, and in the Okanagan Valley of southern British Columbia. While there has been some progress with red wines from the Bordeaux varieties and Pinot

Noir, Canada's most successful wines are ice wines made from grapes such as Riesling, Vidal, and even Cabernet Franc.

Chile

Many of Chile's vineyards are found on flat land within the foothills of the Andes. As in Argentina, Chilean viticulture dates back to the Conquistadores. It is the 10th biggest producer of wine in the world. Under the Pinochet reforms of the 1980s, investments were made in wineries and vineyards, and exports began in earnest in the mid-1990s. Chile is notable for being one of the few vine-growing regions to be free of phylloxera.

Mexico

Mexico is the oldest winemaking region in the Americas. In 1549, Spanish explorers and settlers came across a fertile valley in the present-day state of Coahuila where they encountered native vines and founded the Mission of "Holy Mary of the Vines." In 1597, the Hacienda de San Lorenzo was established by the Spanish settler Don Lorenzo García, where he founded, along with other Spanish missionaries, Casa Madero - the oldest winery house in the Americas. Several Mexican wines have achieved important international recognitions and received medals for their outstanding quality.

New Zealand

New Zealand viticulture was started in a small way by Croatian immigrants at the end of the 19th century, but it was not until the 1970s that it really got going. Various grapes were tried in the early years, but it was in the 1980s that New Zealand developed the pungent style of Sauvignon Blanc that became her trademark. Since then the Burgundy grapes of Chardonnay and Pinot Noir have been developed in cooler, more southerly vineyards, with considerable success.

South Africa

The end of apartheid sparked a wave of investment and innovation in the vineyards of the Cape. There are large areas of undistinguished grape varieties that can produce world-class wines. South Africa is second home to many known wines.

United States

Although wine is made throughout the United States, 90 per cent of it comes from California. Earliest grape vines were imported from New Spain, or Mexico, which in turn were brought by Spanish explorers and settlers. Prohibition had a devastating effect on commercial winemaking in United States, which only started to recover in the late 1960s and 1970s. In the years after Prohibition, the domestic market demand changed. Interest in traditional European varieties increased leading to the innovations that triumphed so spectacularly in Paris in 1976.

SELF-ASSESSMENT EXERCISE

i. What are new world wines?
ii. Mention the new world wine countries.

3.2 Characteristics of New World Wines

Style

Since new world vineyards are generally in hotter climates than those of Northern Europe, New World grapes tend to be riper. Thus, new world wines tend to be correspondingly more alcoholic and full-bodied.

Varietal labelling

Traditionally, new world wine used names of well-known European regions, such as Burgundy, Champagne, Sherry, Port, and Hock. This gave consumers a general idea of how the wine might taste. This changed as winemakers developed the confidence to develop their own styles of wine such as grange. One reason was that unlike Europe, there was no history of particular localities being associated with particular styles of wine, and winemakers might buy in grapes from many sources. Subsequently, new world winemakers have 'rediscovered' the art of blending wines. New world viticulturists now better understood the soils and climates of their vineyards; *terroir* has come to the New World.

Marketing

Being less dependent on geography, new world wines have placed more emphasis on branding as a marketing tool. With supermarkets selling an increasing proportion of wine in many markets, new world producers are better positioned to take advantage of this trend towards high volumes and low margins.

Ownership

The greater size of new world wine companies has made them attractive targets for multinational drinks companies seeking to exploit the trend towards drinking wine rather than beer or spirits.

3.3 The Old World Winemaking Countries

Old world wine refers primarily to wine made in Europe but can also include other regions of the Mediterranean basin with long histories of winemaking such as North Africa and the Near East. The phrase is often used in contrast to “new world wine” which refers primarily to wines from new world wine regions such as the United States, Australia, South America and South Africa. The term “old world wine” does not refer to a homogeneous style with “old world wine regions” each making vastly different styles of wine even within their own borders. Rather, the term is used to describe general differences in viticulture and winemaking philosophies between the old world regions where tradition and the role of *terroir* lead versus the new world where science and the role of the winemaker are more often emphasised. In recent times, the globalisation of wine and advent of flying winemakers have lessened the distinction between the two terms with winemakers in one region being able to produce wines that can display the traits of the other region—i.e. an “old world style” wine being produced in a new world wine region like California or Chile and vice versa.

The two most guiding influences of old world style winemaking are that of tradition and *terroir*. The former refers to the long history of a wine region, while the latter refers to geography and the unique characteristics of a place.

Some of the old world wine producing countries includes:

Austria	France	Romania	Greece
Bulgaria	Germany	Slovakia	Spain
Croatia	Italy	Turkey	
Czech Republic	Portugal	Switzerland	
England			

Differences between Old World Wine and New World Wine

Old world wine	**New world wine**
Wines come from the "classic wine making regions" in Europe. Wine has been made in Europe and along the Mediterranean for several millennia. Attracts higher prices.	Wines come from everywhere else. Started producing wine in the 15th, 16th or 17th centuries, following European exploration or colonisation. Wines are often cheaper.
Style: Old world wines are traditionally more '*terroir'* and structure driven	Wines are typically more 'fruity'; modern, squeaky clean fruit forward and in general more varietal driven.
Philosophy: Winemaking philosophies emanated from a sense of place, and the primordial role ascribed to *terroir* as well as 'mother-nature' in determining wine quality.	Placed less sanctity on the pre-eminence of '*terroir'*, and more on the preservation of varietal fruit character, believing that the appropriate harnessing of scientific and technological best practices in the vineyard and in the winery could iron out any *terroir* imperfections.
Quality: Tend to retain a more obvious minerality or savoriness, no matter how 'fruity' they become. Wines typically have lower alcoholic content.	Wines retain their more forward fruit, no matter how strongly they portray their sense of 'place'. Wines are typically of higher alcoholic content.
Regulation: Has to adhere to a detailed set of rules that govern what can be planted, density of planting, training and pruning methods, minimum ripeness at harvest, maximum yields, winemaking techniques and use of oak.	Very few restrictions exist, and winemakers are free to plant whatever grape varieties they wish and make the wine however they deem appropriate.

Today the dividing line is more blurred, as new world wine producers discover *terroir* and old world producers discover 'fruit', adopting many of the technological advances developed in the new world.

SELF-ASSESSMENT EXERCISE

i. In what areas are the characteristics of the new world wines considered?
ii. List any five old wine countries.

4.0 CONCLUSION

The new world wine region is made up of Argentina, Australia, Canada, Chile, New Zealand, South Africa and the United States. Some of the old world wine producing countries include France, Armenia, Austria, Bulgaria, Croatia, England, Germany, Italy, Spain.

The characteristics of new world wines are seen in style, varietal labelling, marketing and ownership. Differences between old world wine and new world wine are in the areas of style, philosophy, quality and regulation.

5.0 SUMMARY

No doubt, this unit has educated you on the new and old world as it concerns wine making. It has also tried to explain the characteristics of the new world wines, as well as the differences between the two worlds.

6.0 TUTOR-MARKED ASSIGNMENT

1. What does the term "new world wine" and "old world wine mean"?
2. Discuss the characteristics of new world wine.
3. Itemise the differences between new world wines and old world wines.

7.0 REFERENCES/FURTHER READING

Foskett, D. & Ceserani, V. (2007). *The Theory of Catering.* (11thed.). Hodder Education.

Lillicrap, D. & Cousins, J. (2006). *Food and Beverage Service.* (7th ed.). Hodder Arnold.

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UNIT 3 CLASSIFICATION OF WINES

CONTENTS

1.0 INTRODUCTION

In the last unit, we learnt about the worlds of wine, their characteristics and differences. In this unit, we will be dealing with the classification of wines.The classification of wine can be done according to various methods including, but not limited to, place of origin or appellation, vinification methods and style, sweetness and vintage, orvarietal used. Practices vary in different countries and regions of origin. Some classifications enjoy official protection by being part of the wine law in their country of origin, while others have been created by, for example, grower's organisations without such protection.

2.0 OBJECTIVE

At the end of this unit, you should be able to:

explain the criteria used in classifying wines.

3.0 MAIN CONTENT

3.1 Classification by Appellation

An appellation is a legally defined and protected geographical indication used to identify where the grapes for a wine were grown. Restrictions other than geographical boundaries, such as what grapes may be grown, maximum grape yields, alcohol level, and other quality factors, may also apply before an appellation name may legally appear on a wine bottle label. The rules that govern appellations are dependent on the country in which the wine was produced.

Historically, wines have been known by names reflecting their origin, and sometimes style. For example, Bordeaux, Rioja, Mosel and Chianti are all legally defined names reflecting the traditional wines produced in the named region. These naming conventions or "appellations" (as they are known in France) dictate not only where the grapes in a wine were grown but also which grapes went into the wine and how they were vinified. The appellation system is strongest in the European Union, but a related system, the American Viticultural Area, restricts the use of certain regional labels in America, such as Napa Valley, Santa Barbara and Willamette Valley.

In most of the world, wine labelled Champagne must be made from grapes grown in the Champagne region of France and fermented using a certain method, based on the international trademark agreements included in the 1919 Treaty of Versailles. However, in the United States, a legal definition called semi-generic has enabled United States winemakers to use certain generic terms (Champagne, Hock, Sherry, etc.) if there appears next to the term the actual appellation of origin.

More recently, wine regions in countries with less stringent location protection laws such as the United States and Australia have joined with well-known European wine producing regions to sign the Napa Declaration to Protect Wine Place and Origin, commonly known as the Napa Declaration on Place. This is a “declaration of joint principles stating the importance of location to wine and the need to protect place names”. The Declaration was signed in July 2005 by four United States winegrowing regions and three European Union winegrowing regions.

3.2 Regional Wine Classifications

Many regional wine classifications exist as part of tradition or appellation law. The most common of these is based on vineyard sites and include the Bordeaux Wine Official Classification of 1855. However, some regions classify their wines based on the style like the German wine classification system. Vineyard classification has a long history dating from some early examples in Jurançon in the 14th century, in 1644 when the Council of Würzburg ranked the city's vineyards by quality and the early five-level designation of vineyards based on quality in Tokaj-Hegyalja in 1700. Other well-known classifications include:

- classification of Saint-Émilion wine of Bordeaux
- classification of Graves wine of Bordeaux
- Cru Bourgeois of Bordeaux (Médoc)
- classified estates of Provence.

3.3 Classification by Vinification Methods and Style

Wines may be classified by vinification methods. This method of classifications gives rise to having:

- red wine
- white wine
- sparkling/semi-sparkling wine
- still wine
- organic wine
- table wine
- cooking wine.

The colour of wine is not determined by the juice of the grape, which is usually clear, but rather by the presence or absence of the grape skin during fermentation.

Style

Attempts have been made to classify wines by style, which is difficult to define. Subjectively, it involves a combination of the colour, taste, alcoholic strength and several other factors. These are influenced by such factors as the grape variety or varieties used; climate and soil conditions in the region of production, as well as the method of vinification. By this method, there are:

- dessert wine
- fortified wine
- fruit wines
- rosé wines**.**

3.4 Classification by Vintage or Varietal

A vintage wine is one made from grapes that were all, or primarily, grown in a single specified year, and are accordingly dated as such. Consequently, it is not unusual for wine enthusiasts and traders to save bottles of an especially good vintage wine for future consumption. However, there is some disagreement and research about the significance of vintage year to wine quality. Most countries allow a vintage wine to include a portion of wine that is not from the labelled vintage.

A varietal wine is wine made from a dominant grape such as a chardonnay or a cabernet sauvignon. The wine may not be entirely of that one grape and varietal labelling laws differ. In the United States, a

wine needs to be composed of at least 75 per cent of a particular grape to be labelled as a varietal wine. In the European Union, a minimum of 85per cent is required if the name of a single varietal is displayed, and if two or more varietals are mentioned, these varietals combined must make up 100per cent and they must be listed in descending order. For example, a mixture of 70per centchardonnay and 30 per cent viognier must be called chardonnay-viognier rather than viognier-chardonnay.

SELF-ASSESSMENT EXERCISE

State the criteria used in classifying wines.

4.0 CONCLUSION

Wines are classified based on established and accepted criteria. Some of these classifications enjoy legal protection and form part of the wine laws of their various countries while some others do not enjoy this protection, particularly those created by grower's organisations.

5.0 SUMMARY

In this unit, we have discussed the criteria used in the classification of wines. The classification of wine is based on four main criteria:

a. appellation
b. region
c. vinification method
d. vintage.

All these criteria enjoy legal protection except some of them created by grower’s organisations.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the various considerations in the classification of wines.

7.0 REFERENCES/FURTHER READING

Foskett, D. & Ceserani, V. (2007). *The Theory of Catering.* (11th ed.). Hodder Education.

Lillicrap, D. & Cousins, J. (2006). *Food and Beverage Service.* (7th ed.). Hodder Arnold.

UNIT 4 CATEGORIES OF WINES

CONTENTS

1.0 INTRODUCTION

In the last unit, we discussed the criteria used in the classification of wines. In this unit, we shall be looking at the categories of wines as well as wine listing.

There are hundreds of wine types in the world, each with its own flavours and styles. Most people know about the popular varieties of wine - chardonnay, cabernet and merlot.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe the different categories of wine
- state the ways wines are listed.

3.0 MAIN CONTENT

3.1 Red Wines

Red wine is red. Its colour can be derived from a vast assortment of grape varietals ranging from grapes that are reddish, deep purple, and even a beautiful blue on the colour scale. These grapes give rise to a wine that is colour classified with such descriptors as garnet, almost black, dark red, light red, ruby red, opaque purple, deep violet, maroon and the list goes on. The grape skins are responsible for the red wine's distinct colour spectrum. The skins are in contact with the grape's juice during the fermentation process, allowing the dispersion of both colour and tannins. The individual wine's particular red hue depends on the grape type used in the process and the length of time the skin's pigmentation is in contact with juice. There are about 50 red wine varietals that consistently manifest themselves in today's world wine market.

Wine producers worldwide are constantly developing reds that are smoother, more rounded and juicier.

Red wine style

As with all wines, the particular winemaker will have adequate "say" in the style of wine he will produce. Red wines are often classified by "body-type." This has to do with mouth-feel and tannin structure. There are:

- light-bodied
- medium-bodied
- full-bodied

A light-bodied wine will have fewer tannins present and less presence on the palate. These wines tend to be less demanding partners with flavour-filled foods. An example of a light-bodied red wine would be one derived from the Gamay grape varietal, such as France's famed young red wine: Beaujolais Nouveau. In general, light-bodied wines tend to "feel" more like water in the mouth.

A medium-bodied red wine will contain more tannins than light-bodied wine. Typical examples of medium-bodied red wines includeMerlot, Shiraz or Chianti.

Full-bodied red wines boast the highest tannin (and often alcohol) content. Prime examples of full-bodied reds are France's esteemed Bordeaux wines, California's key cabs and Italy's sizzling super

Tuscans. Full-bodied wines feel heavier and more like milk. This effect is due in large part to the higher tannin (and alcohol) content.

3.1.2 White Wines

White wine is not white at all, but yellow, golden or straw-like in colour. Its colour can be derived from an assortment of grape varietals. White wines are made from the grape juice and grape skin of green, gold or yellowish coloured grapes or from just the juice (not the skin) of select red grapes. They are more refreshing, lighter in both style and taste than the majority of their red wine counterparts,
White wine styles vary from bone dry to golden sweet.

3.1.3 Sparkling and Still Wines

Sparkling wines

Sparkling wine is a wine with significant levels of carbon dioxide in it making it fizzy. The carbon dioxide may result from natural fermentation, either in a bottle in a large tank designed to withstand the pressures involved or as a result of carbon dioxide injection.

Sparkling wine is usually white or rosé however, there are many examples of red sparkling wines such as Italian Brachetto and Australian sparkling Shiraz. The sweetness of sparkling wine can range from very dry “brut” styles to sweeter “doux” varieties.

The classic example of a sparkling wine is Champagne; however, this wine is exclusively produced in the Champagne region of France.Other sparkling wines are produced in other countries and regions, such as Espumante in Portugal, Cava in Spain, Franciacorta, Trento, OltrepòPaveseMetodoClassico and Asti in Italy (the generic Italian term for sparkling wine being Spumante) and Cap Classique in South Africa. Most countries, reserve the word “Champagne” for a specific type from the Champagne region of France.

The French terms *Mousseux*or *Crémant* are used to refer to sparkling wine not made in the Champagne region. German and Austrian sparkling wines are called Sekt. The United States is a significant producer of sparkling wine with producers in numerous states. Recently the United Kingdom, which produced some of the earliest examples of sparkling wine, has started producing sparkling wines again.

Categories of sparkling wine

Sparkling wines and Champagnes are categorised as:

- extra brut,
- brut
- extra dry
- sec and
- demi-sec

This categorisation depends on their sugar levels. These classifications can be somewhat confusing, but keep in mind, that in wine terms “dry” is the opposite of “sweet.”

Extra brut - is “extra” dry
Brut – dry (most popular style and very food-friendly)
Sec – medium dry
Demi-sec – pretty sweet (pair with fruit and dessert)

Champagne and sparkling wines are also categorised as “vintage” or “non-vintage” (NV on the label) meaning they either come from a single year or are a blend of several different years. The “vintage” Champagnes are typically pricier, as the non-vintage Champagne and sparkling wines make up the majority of the market.

Semi-sparkling wines

Semi-sparkling wines are defined as those with between 1 and 2.5 atmospheres of pressures. These wines have less carbon dioxide than regular sparkling wine. Their bubbles develop during second fermentation in tanks. This fermentation is interrupted before the wines are fully sparkling. They are produced in many countries.

3.1.4 Still Wine

Still wines are wines that have not gone through the sparkling wine methods and have no effervescence. This is the largest category of wine. Their alcoholic content may be between eight per cent and 15per cent by volume. They can be red, white or rosé.

3.1.5 Organic Wine

These are wines made from grapes grown without the aid of artificial insecticides, pesticides or fertilizers. They are also known as ‘green’ or ‘environmentally friendly’ wines. The wine itself will not be adulterated in any way, save for minimal amounts of the traditional preservatives, sulphur dioxide which is controlled at source.

3.1.6 Dessert and Fortified Wine

a. Dessert wines

A dessert wine is one that is potent, sweet, and full of flavour. Because of their sweet flavour, the wine complements a dessert. Often, extra spirits are added to raise the alcohol content. In general, dessert wines are thicker, richer, and sweeter than table wines. The grapes are picked late in the harvest to preserve residual sugars.

They come in small bottles and are served in tiny glasses. An average pour is two ounces. Therefore, you notice that dessert wines are sold in the smaller 375ml bottles (as well as in larger bottles).

Like dinner wines, white dessert wines are generally served chilled. Red dessert wine are served at room temperature or slightly chilled. Dessert wines are especially good with fresh bakery sweets and fruits. It is best to save heavier tastes for winter, lighter tastes for summer.

These wines contain flavours like peach, almond, oak, and herbs, which allow them to show off their flavour, and add a tang to even the lightest dessert. Adding them to a sweet cream or paste dessert always creates a wonderful combination. Examples include fortified wines like port and sherry, and late harvest wines, which originated from grapes that have shriveled a bit, concentrating their sweetness. As a rule of thumb, a dessert wine should always be sweeter than the dessert it accompanies.

Some of the world’s greatest fortified wines include Madeira, vermouth, Marsala, sherry, cream sherry, and port.

Types of dessert wine

Late harvest:

In Sauternes,late harvest allows the sugars to condense in the grapes and then, a noble rot forms on the grapes. It sounds disgusting, but it makes some of the best wines in the world.

Ice wines

The grapes used for these wines freeze at the end of harvest. They yield only a small amount of sugary juice because of this when pressed. The water is frozen. They are grown in cold regions like Canada and Germany.

b. Fortified wines

Fortified wines are wines that have been strengthened by the addition of alcohol, usually a grape spirit. Their fermentation process is stopped by this addition of a spirit, such as brandy, or additional spirit added after fermentation. They are often sweeter and generally more alcoholic wines. Fortified wines are known on Europe as liqueur wines or *vin de liqueur*. Their alcoholic strength may be from 15 per cent to 22 per cent.Examples includePort, Madeira and Sherry.

3.1.7 Alcohol-free, De-alcoholised and Low Alcohol Wines

These wines are made in the normal way and the alcohol is removed by either hot-treatment distillation or cold filtration process/reverse osmosis. The hot-distillation process removes not only the alcohol content but also most of the flavour.

The cold-filtration process removes the alcohol by mechanically separating or filtering out the molecules of alcohol through membranes made of cellulose or acetate. At a later stage, water is added in an attempt to preserve much of the flavour of the original wine.

The alcohol-free wine has a maximum of 0.05 per cent alcohol
De-alcoholised wine contains a maximum of 0.50per cent alcohol while
Low alcohol wine contains a maximum of 1.2per cent alcohol.

3.1.8 Aromatised/Aromatic wines

These are wines fortified and flavouredwith herbs, roots, flowers and barks. They may be sweet or dry. Aromatic wines are also known as aperitifs. They are generally consumed before meals as digestive stimulants. Examples include:

- Vermouths
- Chamberyzette
- Dubonnet
- St. Raphael

3.1.9 Table Wines

These wines have an alcohol content that is less than 14per cent in the United States. In Europe, light wine must be within 8.5per centand 14per centalcohol by volume. Thus, unless a wine has more than 14per centalcohol, or it has bubbles, it is a table wine or a light wine.

Table wines are usually classified as white, red, or rosé, depending on their colour. In Europe *vins de table* (in French), *vino da tavola* (in Italian), *Tafelwein* (in German) or *vino de mesa* (in Spanish), which translate to 'table wine' in English, are cheaper wines that often on the label do not include the information on the grape variety used or the region of origin.

3.1.10 Cooking Wine

This usually refers to inexpensive grape wine or rice wine (in Chinese and other East Asian cuisine). It is intended for use as an ingredient in food rather than as a beverage. Cooking wine typically available in North America is treated with salt as a preservative andfood colouring. In other countries, good quality sherry wine is used for cooking, providing nice flavour to the dish and a tasty sauce.

When a usual wine bottle is opened and the wine is exposed to oxygen, a fermentative process will transform the alcohol into acetic acid resulting in wine vinegar. This does not happen in fortified wines, as they are already fermented. The salt in cooking wine inhibits the growth of the microorganisms that produce acetic acid. This will preserve a bottle of cooking wine, which may be opened and used occasionally over a long period.

Cooking wines are convenient for cooks who use wine as an ingredient for cooking on rare occasion. However, they are not widely used by professional chefs, as they believe the added preservative significantly lowers the quality of the wine and subsequently the food made with that wine. Most professional chefs prefer to use inexpensive but drinkable wine for cooking, and this recommendation is given in many professional cooking textbooks as well as general cookbooks. Many chefs believe there is no excuse for using a low quality cooking wine for cooking when there are quality drinkable wines available at very low prices.

Cooking wine is considered a wine of such poor quality, that it is unpalatable by itself and intended for use only in cooking. There is a school of thought that advises against cooking with any wine one would find unacceptable to drink.

3.2 Wine Listing

Wines are normally listed in three main ways, these are:

- by place of origin
- by type
- by grape

Place of origin

This is a traditional approach. Here, the wines are presented based on their country or region of origin. This can further be broken down such that within the country or region, the wines are presented area by area. Example of this listing is:

Champagne and Sparkling

France	Spain
South Africa	Germany
Italy	England
Australia	Portugal

It usual to list white wines first followed by rosé wines, and then the red wines.

By type

This is a modern approach, which lists wines by type. For example:

- sparkling wines
- white wines
- rosé wines
- red wines
- dessert wines

Within this grouping, the wines can further be presented by country, region or style. If the presentation will be by type and style, the list could appear thus:

White wines	**Red wines**
grapy whites	fruity reds
grassy-fruity whites	claret style reds
richer whites	herby-spicy reds

It is better to list the wines from the lighter to the fuller wines.

By grape

In this type of listing, the grapes are usually listed in alphabetical order. Under each heading, the wines made from that grape are listed.

Examples of the grapes are:

White grapes	**Red grapes**
Chardonnay	Canernet sauvignon
Cheninblanc	Pinot noir
Pinot blanc	Sangiovese
Riesling	Zinfandel

SELF-ASSESSMENT EXERCISE

i. Mention some categories of wine.
ii. List the criteria for listing wine.

4.0 CONCLUSION

Red wine is red. Its colour can be derived from a vast assortment of grape varietals ranging from grapes that are reddish, deep purple, and even a beautiful blue on the colour scale.White wine is not white at all, but yellow, golden or straw-like in colour. Its colour can be derived from an assortment of grape varietals.

Sparkling wine is a wine with significant levels of carbon dioxide in it making it fizzy.Still wines are wines that have not gone through the sparkling wine methods and have no effervescence.

Organic wines are wines made from grapes grown without the aid of artificial insecticides, pesticides or fertilizers.A dessert wine is one that is potent, sweet, and full of flavour. It is because of their sweet flavour the wine complements a dessert.

Fortified wines are wines that have been strengthened by the addition of alcohol, usually a grape spirit.

Alcohol-free, de-alcoholised and low alcohol wines are made in the normal way and the alcohol is removed either by hot-treatment distillation or cold filtration process/reverse osmosis.The alcohol-free wine has a maximum of 0.05 per cent alcohol. De-alcoholised wine contains a maximum of 0.50per cent alcohol while.

Low alcohol wine contains a maximum of 1.2per cent alcohol.

Aromatised wines are flavoured and fortified wines.Table wines are wines that have alcohol content within 8.5per cent and 14per cent alcohol by volume.

Cooking wine refers to inexpensive grape wine or rice wineintended for use as an ingredient in food rather than as a beverage.

5.0 SUMMARY

In this unit, we have categorisedwines for ease in differentiating them, and understanding their special features. The considerations in wine listing will also help in adequate presentation of wine. You are therefore equipped better to know when and where each wine comes from.As a connoisseur, you need to have a good knowledge of the categories of wine.

6.0 TUTOR-MARKED ASSIGNMENT

1. List the various categories of wine.
2. Discuss any three categories of wine.

7.0 REFERENCES/FURTHER READING

Lillicrap,D. & Cousins,J. 2006).*Food and Beverage Service*.(7th ed.).Hodder Arnold.

Walker, J. R. (2005). *Introduction to Hospitality.(* 4th ed.).

UNIT 5 COMPONENTS OF WINE

CONTENTS

1.0 INTRODUCTION

We discussed the categories and listing of wine in the previous unit. In this unit, we shall be looking at the components of wine.The subject of wine is quite interesting. Apart from its flavour, its structure is also important. The structure of wine has to do with the components that make up a wine, which in turn affect the drinkability and longevity of the wine. An appreciation of the balance of these components will go a long way in helping your understanding and enjoyment of wine.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list the components of wine
- explain the effect of these components on the drinkability and longevity of wine.

3.0 MAIN CONTENT

3.1 The Components of Wine

3.1.1 Tannins

The tannins in wine are derived from the pips, skins and stalks. They are vitally important if a wine is intended to age, as they are a natural

preservative. The tannins give structure and backbone to the wine. They can be sensed by a furring of the mouth, or puckering of the gums, a sensation very similar to what happens on drinking stewed tea. This is notsurprising, as this effect is also due to tannins, released from the tealeaves after stewing in the hot water for too long.

Tannins are of more importance in the ageing of red wines rather than white. The tannins act as a preservative, and as they fade over many years, the simple, primary fruit flavours have time to develop into the more complex flavours that are found in fine, aged wines.

An ideal level of tannins in a wine ready for consumption is the amount just sufficient to provide structure, and not dominate the palate. For this reason, tannins are still important in red wines not intended for long ageing, as they give grip or structureto these wines also. Tannins may also have different qualities, and may be described as harsh or soft.

3.1.2 Acidity

All fruit require acidity, be it an apple, lemon, mango or grape. Acidity is what gives fruit its refreshing, flavour and some sensation. Without acidity, fruit would seem overly sweet and cloying, a little like the sensation derived from drinking the sugary fruit syrup in which some canned fruit is presented. Just like fruit, wine also requires acidity. Too little, and it will seem dull, flabby or perhaps cloying, particularly if it is a sweet wine. Too much, and the wine will be sharp, harsh and undrinkable. Acidity can be detected by the sharpness of the wine in the mouth, particularly around the edges of the tongue near the front.

Some acids, such as acetic acid, are known as volatile acids, and in small amounts, these can really lift the flavours in the wine. Too much acidity will cause the wine to resemble furniture polish, acetone or even vinegar. Higher acidity denotes a wine from a cooler region, such as Northern France, England or New Zealand. Low acid wines come from countries with warmer weather, such as Australia, where acidity in the harvested grapes is often low enough to warrant chemical acidification.

3.1.3 Alcohol

Alcohol is the product of fermentation of the natural grape sugars by yeasts, and without it, wine simply does not exist. The amount of sugar in the grapes determines what the final alcohol level will be. In cool climates, such as Germany, where the vines struggle to ripen their grapes, sugar levels will be minimal, and consequently such wines often only reach seven or eight per cent strength. In very warm climates, however, the final alcohol level will be determined not so much by the

amount of sugar but rather by the yeasts themselves. Once the alcohol level reaches about 14per cent the yeasts can no longer function and rapidly die off. For this reason, wines with strength of more than 15per cent are almost certainly fortified.

The conversion of sugar to alcohol is such a vital step in the process of making wine. Hence, the control of fermentation is given much attention by the modern winemaker. Fermentation generates heat, and a cool, controlled fermentation will result in very different flavours in the wine (in particular, it protects fresh, delicate fruit flavours) when compared with wines where fermentation is allowed to run riot.

Although fermentation will start naturally as a result of yeasts naturally present on the grapes in the vineyard, some winemakers prefer to remove the element of chance this involves, by kick-starting fermentation using cultured strains of yeast. This use of cultured yeast strains could also cause problems. They have been blamed for some unusual characteristics in wine, such as banana flavours in some wines.

3.1.4 Sugar

If fermentation is arrested, either as a result of the yeasts failing in gradually increasing alcohol level in the ferment, or as a result of man's intervention, there will consequently be some remaining sugar in the wine. Even when the work of yeast is unhindered, most wines still have at least 1g/L of residual sugar. This is because some sugar compounds are resistant to the action of the yeasts.

Clearly, the level of sugar in the wine determines how sweet it tastes. This is quite subjective, however, as even wines that taste very dry have some degree of residual sugar. Most dry wines have less than 2g/L of sugar, although levels of up to 25g/L may be present in wines which still taste dry due to the presence of acidity and tannin alongside the sugar. The bottom line remains that the greater the amount of residual sugar, the sweeter the wine.

3.1.5 Oak

Many wines are matured in oak barrels, and some are even fermented in oak. Oak from different sources will impart different characteristics on the wine. Generally, oak maturation gives aromas of butter, toffee, caramel, vanilla, spice and butterscotch.

French oak may give more buttery aromas, whereas American oak gives stronger vanilla and spice aromas. However, the aromas most times depend on:

- how much oak is used
- how much of it is new as opposed to re-used
- how long the wine stays in contact with the wood
- whether the wine is merely aged in oak or whether the fermentation takes place in it
- how the oak has been treated, and so on.

For instance, barrels that have been "toasted" will have aromas of smoke and toast. Barrels that have been steamed during manufacture, however, may give more oatmeal aromas.

3.1.6 Botrytis

The result of the fungus *Botrytis cinerea*–"Noble Rot" has a peculiarly beneficial effect on the grapes. It tends to occur in vineyards next to large bodies of water, where morning mists dampen the grapes in the morning. Such locations include Sauternes in Bordeaux, and around the Neusiederlersee in Austria. Following this, the mists are burnt from the ground by the afternoon sun. In conditions, which are too damp, where the mists persist all day, the grapes are much more likely to be affected by Grey Rot, a destructive fungal infection.

Grapes affected by Botrytis look terrible, discoloured and shrivelled, but they are the starting point for making some fabulous wines. The Botrytis has the effect of reducing water content in the grapes, concentrating the grape sugars. The wine that results has a rich, luscious texture, with sweet, concentrated fruit flavours.

3.1.7 Yeast

In many wines, the yeasts themselves are the cause of certain flavours. When a wine has completed fermentation, it remains cloudy and contaminated with dead yeast cells. Many different techniques are employed to clarify the wine from its lees (the collection of dead yeasts).

Wines that remain on the lees for a long time, however, will take on extra richness and texture, with bready, biscuit aromas (and flavours). This technique is employed to add an extra dimension to many Champagnes, as well as Muscadet, white Burgundy and many other white wines. Some vignerons practice batonnage (stirring of the lees) in order to accentuate this effect.

3.1.8 Flavour

After the assessment of all the components present in wine, it is still necessary to examine the flavours that are present in the wine. In young wines, at least, the flavour is directly related to the grape variety used.

SELF-ASSESSMENT EXERCISE

i. List the components of wine.
ii. Mention the effect of tannin on wine.

4.0 CONCLUSION

The components that make up wine have vital roles to play in the eventual outcome of the wine making process as well as in the drinkability of the wine.

5.0 SUMMARY

In this unit, you have learnt the various components of wine, whichinclude tannins, acidity, alcohol, sugar, oak, botrytis and flavour.Tannins are a natural preservative and they give structure and backbone to the wine.The level of sugar in the wine determines how sweet it tastes.

The aromas oak impacts on wine depend on how much oak is used; how much of it is new as opposed to re-used; how long the wine stays in contact with the wood; whether the wine is merely aged in oak or whether the fermentation takes place in it; and how the oak has been treated.

Grapes affected by Botrytis look terrible, discoloured and shrivelled, but they are the starting point for making some fabulous wines.

6.0 TUTOR-MARKED ASSIGNMENT

1. List and explain the components of wine.
2. Itemise the factors aromas from oak depend on.

7.0 REFERENCES/FURTHER READING

Alster,C. (2007).“Types of Wine - How External Factors Can Affect Your Wine.”EzineArticles.com.

Lillicrap,D. & Cousins,J. (2006).*Food and Beverage Service*.(7th ed.).Hodder Arnold.

MODULE 2

UNIT 1 GENERAL INFORMATION REQUIRED ON WINE

CONTENTS

1.0 INTRODUCTION

There are various information that are required to be given on wine to help the customers in making decision as to choice of drink. Such information includes the wine itself and the alcoholic strength. Most times the wine label contains most of this information.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the various information that are required to be given on the wine list or wine label
- interpret the information given on the wine label.

3.0 MAIN CONTENT

3.1 Wines

The required information on wine includes the following:

- bin number
- vintage
- name of wine
- alcoholic strength
- country and area of origin
- ½ bottle, bottle or magnum
- quality indication
- price
- shipper
- supplier
- château/estate bottled
- varietal (type of grape)
- descriptive notes as appropriate.

3.2 Alcoholic Strength

The alcoholic strength of wine and other drinks is expressed as percentage (%) alcohol by volume (ABV). This is measured by the Organisation Internationale Métrologie Légale (OIML) Scale, which is the universally accepted scale for the measurement of pure alcohol in a liquid. Thus a liquid stated to have 30 per cent alcohol by volume will have 30 per cent of its content as pure alcohol. The alcoholic content of most drinks is now shown on the labels.

Figure 1 shows a typical United States wine label.

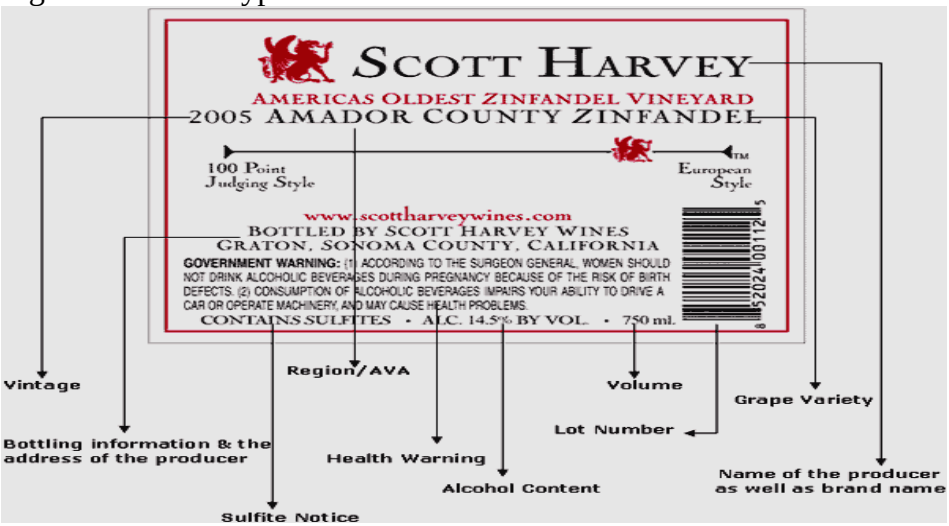
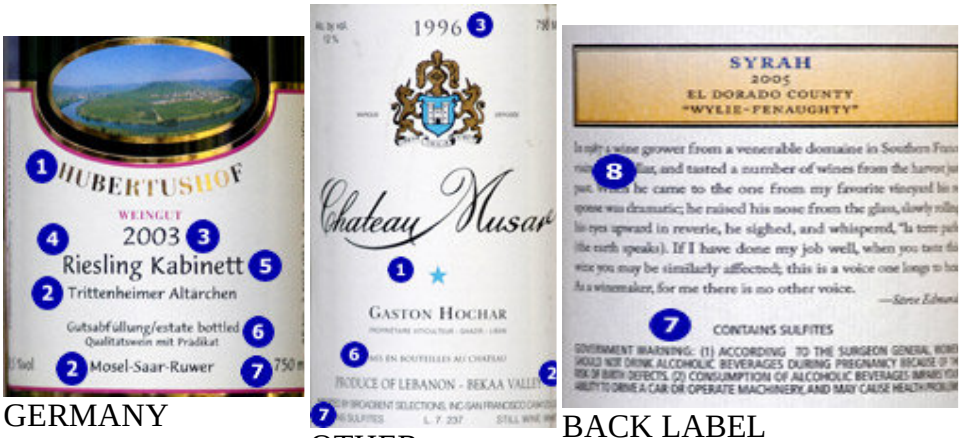


FIG. 1.1: A Typical United States Wine Label

Note that most of the information needed on wine has been supplied on this wine label.



GERMANY OTHER BACK LABEL

Fig. 1.2: Examples of Wine Labels

Figure 1.2 shows more examples of wine labels. Follow the numbers from each label to the related numbers in the text for a quick explanation of every label line. Though these labels represent different countries with different sets of labelling regulations, it is seen that they all provide the same general information, with only relatively minor differences in format and content.

1. **Winemaker or winery:** The company or firm that produced the wine or, in some cases, the wine's trademark name.
2. **Appellation:** The country or region where the grapes for this wine were grown. This may be as broad as "California" or as narrow as a specific vineyard like *Trittenheimer Altärchen.* Note, however, that the California wine pictured here lists a narrower appellation ("El Dorado County") and takes advantage of the option to denote its specific vineyard source ("Wylie-Fenaughty") as well. The German wine also mentions its region ("Mosel-Saar-Ruwer"). In most countries, wine-growing regions ("appellations") are defined by law, and wines made in these regions will carry legal language on the label such as "Appellation Controlée" in France or *DenominazionedellaOrigineContrallata* (DOC) in Italy. Most regulations allow up to 15 percent of the wine to be made from grapes grown outside the area.
3. **Vintage:** This is the year in which the grapes were harvested, not the year in which the wine was bottled, which for some wines may be years later. Note that some countries add the local word for "vintage" to the label: "Cosecha" in Spain, "Vendemmia" in Italian. (Most national wine laws require that at least 85 per cent

of the wine be harvested in the year of vintage; up to 15 per cent may be blended in from other years.)

4. **Variety:** The specific kind of grapes from which the wine was made. Not all wines disclose varietal content, for example, most French and Italian wines. This is because wine laws require the wines of each region be made from traditional varieties such as Cabernet Sauvignon, Merlot, Cabernet Franc, Petite Verdot and Malbec in Bordeaux, for example; Sangiovese and others in the case of Chianti, and the indigenous grapes Obidiah and Merwah in the offbeat Lebanese white wine from Chateau Musar pictured under "Other."Most countries allow the use of some non-varietal grapes in the blend. In most states of the United States, for example, only 75 per cent of the wine's content must be of the named varietal. In Europe and Australia, the rule is usually 85 per cent.
5. **Ripeness:** In a tradition known primarily in Germany and, in somewhat different form, Austria, some wines use special terminology to reflect the ripeness of the grapes and the quality of the finished wine. The German wine pictured, for instance, is a *Kabinett,* the lowest ripeness level in *QualitätsweinmitPrädikat*, the highest quality level. Some German wine labels will also show "Trocken" ("dry") or *Halbtrocken* (half dry) to denote wines vinified to less natural sweetness.
6. **Estate bottling and winery information:** If the wine is "estate bottled" (made from grapes grown and harvested in the winery's own vineyards), this will be disclosed with language on the label such as the French *Mise en bouteille(s) au Chateau*; the German *Gutsabfüllung*; or the English estate bottled or grown, produced and bottled.
7. **Other required information:** This may vary widely depending on national regulations. German wines, for example, carry an "Amptliche Prüfungs Nummer (AP Number)," the serial number it received during official testing (barely visible on the right in the pictured label). French wines may carry their ranking from traditional classifications (such as "Grand Cru" or "Premier Cru" on qualifying Burgundies). The back labels of wines sold in the United States are typically decked out with required consumer warnings such as the notorious "Surgeon General's Warning" and notices that the wines contain sulfites. Wine labels also carry small print disclosing the wine's approximate alcoholic content and the size of the bottle, as highlighted on several of the labels photos. Imported wines in the United States normally bear the name and other information about the company that imported the wine.
8. **Optional information:** Additional information that may range from winemaker's notes or detailed analytical and tasting

information to advertising hype are often featured on labels, especially the back label.

SELF-ASSESSMENT EXERCISE

Mention the general information required on wine.

4.0 CONCLUSION

The vital information required on wine labels has been discussed. Information brings knowledge. Lots of the prints on wine labels convey lots of information. It is important that the sommelier or conossoir arm themselves with adequate knowledge to be able to impress and serve customers better.

5.0 SUMMARY

The major information required on wine is normally covered by the information on the wine label. This most times includes:

- wine maker
- appellation
- vintage
- variety
- ripeness
- estate bottled or not
- alcoholic strength.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the general information required on wine.

7.0 REFERENCE/FURTHER READING

Lillicrap, D. & Cousins, J. (2006). *Food and Beverage Service*. (7th ed.). Hodder Arnold.

UNIT 2 THE ROLE OF WINE IN THE SOCIETY

CONTENTS

1.0 INTRODUCTION

In Unit 1, we learnt about the general information required on the wine. This information will help you to interpret the information on wine labels. In this unit, we shall be discussing the role of wine in the society.

Wine was regarded as an important product of civilisation, which brings significant benefits to human body. At the same time, it has been discovered that wine has great potential to harm if not properly used.

From the ethnographic material available, it is clear that in all cultures where more than one type of alcoholic beverage is available, drinks are classified in terms of their social meaning, and the classification of drinks is used to define the social world. Few, if any, alcoholic beverages are “socially neutral;” every drink is loaded with symbolic meaning; every drink conveys a message. Alcohol is a symbolic vehicle for identifying, describing, constructing and manipulating cultural systems, values, interpersonal relationships, behavioural norms and expectations. Choice of beverage is rarely a matter of personal taste.

A United States survey examined perceptions of the situational appropriateness of various types of alcoholic drink, finding that wine, but not spirits or beer, is considered an appropriate accompaniment to a meal; wine and spirits, but not beer, are appropriate drinks for celebrations, while beer is the most appropriate drink for informal, relaxation-oriented occasions.

Scientists have discovered that wine can be physically beneficial. Wine can be dangerous, too, and out-of-control consumption can be a problem. How societies balance the benefits and the dangers of alcohol is the subject of constant revealing debate.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the functions of wine
- discuss wine and health
- list the health components in wine.

3.0 MAIN CONTENT

3.1 Functions of Wine

A look into the past will reveal that all the writings our ancestors left behind as a witness of their times and their cultures, among all beverages created by man, wine is the one, which has been more frequently, mentioned and it occupies a place of absolute importance.

Wine is rarely drunk to quench thirst. Wine has always played a primary role in social and cultural events among the people in which it was present.

3.1.1 Situation Definer

At the simplest level, drinks are used to define the nature of the occasion. In many Western cultures, for example, champagne is synonymous with celebration, such that if champagne is ordered or served at an otherwise “ordinary” occasion, someone will invariably ask “What are we celebrating?”

3.1.2 Religious Importance

In many religions and secret cults society, wine is considered a ritual element. For example, in Christianity, wine is essential in celebrating Eucharist; it is considered sacred, which therefore goes beyond the simple concept of beverage. Dionysus, Bacchus, and Liber are the examples of the ancient Greek and Roman gods of wine. These gods embodied many of the qualities, which Greeks and Romans saw in wine itself:

- life and death
- nature and civilisation

- male and female.

3.1.3 Social Importance

Like food, wine has a social role to play:

- wine is a beverage of communion, friendship, aggregation and union
- the most important moments in the life of men are still today celebrated by wine
- it is consumed as a beverage to wish good luck for agreements
- it is used to celebrate special events.

3.1.4 Wine as a Spiritual Component

- It brings people together.
- It can reduce sadness and increase happiness.
- Wine amplifies a sense of well-being.
- Wine can bewitch and bewilder, transfix and inspire.

By evoking these simple social and emotional responses, wine can be said to be a spiritual component.

3.1.5 Wine as a Global Commodity

Wine runs the gamut from mass production to artistic craftsmanship, and so offers insight at every level to successes and failures in human organisation, determination and vision.

The wine business, from agriculture to winemaking to sales and education, is rich in powerful personalities. Wine offers culture and connoisseurship, while touching on art and philosophy.

SELF-ASSESSMENT EXERCISE

Mention the functions of wine.

3.2 Health Benefits of Wine

The benefits of wine to human bodyare numerous. Wine is good for the heart; wine in moderation might help one shed weight, reduce forgetfulness, boost your immunity, and help prevent bone loss. The benefits of wine may include the following.

Wine reduces forgetfulness

Wine could preserve the memory. When researchers gave memory quizzes to women in their 70s, those who drank one drink or more every day performed better than those who drank less or not at all. Wine helps prevent clots and reduce blood vessel inflammation, both of which have been linked to cognitive decline and heart disease. Alcohol also seems to raise higher density lipoprotein (HDL), the so-called good cholesterol, which helps unclog the arteries.

Wine keeps weight down

Studies have shown that people who drink wine daily have lower body mass than those who indulge occasionally; moderate wine drinkers have narrower waists and less abdominal fat than people who drink liquor. Alcohol may help the body to burn extra calories after taken a glass. Beer seems to have a similar effect.

Wineboosts body's defences

In a British study, those who drank roughly a glass of wine a day reduced by 11 per cent their risk of infection by *helicobacter pylori* bacteria, a major cause of gastritis, ulcers, and stomach cancers. As little as half a glass may also guard against food poisoning caused by germs like salmonella when people are exposed to contaminated food, according to a Spanish study.

Wine guards against ovarian problems

When Australian researchers recently compared women with ovarian cancer to cancer-free women, they found that roughly one glass of wine a day seemed to reduce the risk of the disease by as much as 50 per cent. Earlier research at the University of Hawaii produced similar findings. Experts suspect this may be due to antioxidants or phytoestrogens, which have high anticancer properties and are prevalent in wine. And in a recent study conducted by University of Michigan, a red wine compound helped kill ovarian cancer cells in a test tube.

Focus on wine positive benefits regarding cancer has centered on the antioxidant properties of resveratrol, found in grapes; with some laboratory results showing a protective quality that inhibit cancerous changes in cells. The research is ongoing with no conclusive results though some studies suggest that moderate wine consumption may lower the risk for lung, ovarian and prostate cancer.

Wine helps build stronger bones

On the average, women who drink moderately seems to have higher bone mass than abstainers. Alcohol appears to boost estrogen levels; the hormone seems to slow the body's destruction of old bone more than it slows the production of new bone.

Heavy alcohol consumption has been shown to have a damaging effect on the cellular processes that create bone tissue. Long-term alcoholic consumption at high levels increases the frequency of fractures. Studies from St. Thomas' Hospital in London and the *Epidimiologie de l'Ostioporose* (EPIDOS) medical group in France suggest that moderate wine consumption may offer positive benefits to women, particularly elderly women, in retaining bone density and reducing the risk of developing osteoporosis.

Wine prevents blood-sugar problem

Premenopausal women who drink one or two glasses of wine a day are 40 per cent less likely than women who do not drink to develop Type-2 diabetes, according to a 10-year study by Harvard Medical School. While the reasons are not clear, wine seems to reduce insulin resistance in diabetic patients.

Research has shown that moderate levels of alcohol consumed with meals, does not have a substantial impact on blood sugar levels. A 2005 study presented to the American Diabetes Association suggests that moderate consumption may lower the risk of developing Type-2 diabetes.

Wine aids digestion and absorption

Wine can improve digestion. It can also increase the body's absorption of calcium, magnesium, phosphorus and zinc. All these important minerals help prevent osteoporosis. Red wine also contains iron, a necessary mineral for oxygen transportation in the body.

3.3 Health Component of Wine

The health benefits of drinking wine come from the chemical makeup of the wine, not necessarily the alcohol. Alcohol is the by-product of fermentation, which on its own has tremendous health benefits (if taken in moderation).

Alcohol

The alcohol itself may help to raise the good cholesterol and inhibit the formation of blood clots. This is called vasodilatation, meaning the opening of the blood vessels and increasing blood flow. Alcohol cannot be dismissed as one of the health benefits of drinking wine.

The real benefits

The real benefits in red wine are the ingredients derived from the grapes themselves. The best part of the grape is the skin. Since the skins are used in the process of fermentation, their benefits get absorbed into the red wine.

The skin contains over 400 health-promoting substances like tannins, phenols, flavonoids, bioflovanoids, vitamins, minerals, antioxidants and polyphenols like quercetin, resveratrol, oligomericproanthocyanidins (OPCs) and catechins. They all work together to raise the level of high-density lipoprotein(HDL) cholesterol and lower the low-density lipoprotein(LDL) cholesterol.

Most of these act like antioxidants in the blood. Antioxidants reduce free radicals in the body which cause damage, help create conditions for disease and cause aging. Specifically, they donate electrons to “unstable” molecules, which are literally bouncing around in the blood putting small bits in your blood vessels while damaging healthy cells. This action alone helps the body to repair the damage tissue. It is this 'damage' that we call the “signs of aging.”

i. Resveratrol

Resveratrol is the main component of the red wine. It is also found in the skins of grapes. Resveratrol is the antibody the producedby grapes to fight disease, fungi or injury. They repair cells, reduce inflammation, and act as antioxidants in slowing the aging process. Where free radicals damage healthy cells, which are what causes aged skin, resveratrol not only combats the free radicals but also repairs the damaged cells.

The best way to absorb resveratrol in humans appears to be buccal delivery that is without swallowing, but by direct absorption through the inside of the mouth. The way wine drinkers swish the wine in their mouth before swallowing is what make the combination so effective.

ii. Flavonoids and bioflavonoids

These two are really the same. Their purpose in plants is to create the blue and yellow pigments in flowers and leaves - but they do so much more. Research has shown them to have both anti-inflammatory, antioxidant and anti-allergy abilities.
All together, these ingredients makeup the health benefits of drinking wine. The only thing healthier than adding red wine to your diet is quitting smoking. While white wine does have its benefits, it cannot hold a candle to the power grape skins add to the health benefits of drinking wine.

iii. Tannins

Tannins are what give wine its bitter and dry taste. They are found in the skin and seeds of the grapes. They are proanthocyanidins (often referred to as OPC's). Tannins work like antioxidants; they prevent hardening of the arteries, and inhibit the growth of plaque on the teeth. Winemakers often go to great lengths to reduce the number of tannins in wine. Press wine, on the other hand, is extremely high in tannins because the winemakers do not deseed the grapes; rather, they press and break the seeds during winemaking.

iv. Quercetin

This is another pigment in red grapes. Also found in apples, green onions and green tea, quercetin works as an anti-inflammatory, an antihistamine and an antioxidant. Research is currently under way to see how quercetin fights cancer cells.

SELF-ASSESSMENT EXERCISE

i. List the health benefits of wine.
ii. Mention the health components in wine.

4.0 CONCLUSION

The health effects of wine (and alcohol in general) are the subject of considerable in this unit. There is evidence that a regular, moderate intake of alcohol can have beneficial health effects. These findings do not represent a reason to take up drinking if you currently abstain, but they do represent a reason to cut back if you imbibe heavily. Suffice to say that none of the above evidence should induce abstainers to take up drinking just for the health benefits.

Nearly all researches into the positive medical benefits of wine consumption make a distinction between moderate consumption, heavy and binge drinking. What constitutes a moderate, healthy level of consumption will vary from individual according to age, gender, genetics, weight and body stature as well as the situation-i.e. the food being consumed as well as any other drugs currently in the individual's system, etc.

5.0 SUMMARY

In this unit, wine has been shown as a situation definer and a global commodity, which also performs religious, social and spiritual functions. Wine also contains health components that deliver some health benefits when taken in moderation. You were exposed to the health benefits of drinking wine, specifically red wine. Taken in moderation, as all the studies report, the red wine benefits can dramatically improve health.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the role of wine in the society
2. Explain the health benefits of wine.

7.0 REFERENCES/FURTHER READING

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Barrows, S., Room, R. &Verhey, J. (Eds). (1987).*The Social History of Alcohol: Drinking and Culture in Modern Society*. Berkeley, CA.: Medical Research Institute of San Francisco, Alcohol Research Group.

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UNIT 3 TASTING OF WINE

CONTENTS

1.0 INTRODUCTION

In the last unit,, we discussed the functions of wine as well as its health benefits and the health components in wine. In this unit, we shall be looking at the tasting of wine. A sommelier is expected to have a good knowledge of the characteristics of wines offered. It is through the aromas of wine that wine is actually tasted. The human tongue is limited to the primary tastes perceived by taste receptors on the tongue-acidity, bitterness, saltiness, sweetness and savoriness. The wide arrays of fruit, earthy, floral, herbal, mineral and woodsy flavour perceived in wine are derived from aroma notes interpreted by the olfactory bulb.

2.0 OBJECTIVES

At the end of the unit, you should be able to:

- explain the meaning and types of wine tasting
- describe the tasting stages and steps
- list the characteristics assessed in of wine tasting
- enumerate the advantages of wine tasting.

3.0 MAIN CONTENT

3.1 What is Wine Tasting?

Wine tasting is the sensory examination and evaluation of wine. The practice of wine tasting is as ancient as its production. Today, a more formalised approach to wine tasting is in use and formal terminologies for describing the range of perceived flavours, aromas and general characteristics of a wine have been established. Modern professional wine tasters use the constantly evolving terminologies.

3. 1.1 Types of Wine Tasting

There are various types of wine tasting, these include the following.

Blind tasting

This is a tasting method in which the wine is served without the tasters knowing anything about the wine e.g. the bottle or the label. Sometimes, the wine could be served from a black wine glass to mask the colour of the wine. This is to avoid impartial judgement about the wine, as it has been established that a taster's judgement can be prejudiced by knowing details of a wine, such as geographic origin, price, reputation, colour, or other considerations.

Vertical tasting

In a vertical tasting, different vintages of the same wine type from the same winery are tasted. This emphasizes differences between various vintages.

Horizontal tasting

In a horizontal tasting, the wines are all from the same vintage but are from different wineries. Keeping wine variety or type and wine region the same helps emphasize differences in winery styles.

Vertical and horizontal wine tastings are wine tasting methods that highlight differences between similar wines.

When it comes to wine tasting, there are factors that have to be considered:

- perception
- expectancy.

People expect expensive wine to have more desirable characteristics than cheaper wine. When given wine that they are falsely told is expensive, people virtually always report that it has better taste than the very same wine when they are told that it is inexpensive.

Similarly, people have expectations about wines because of their geographic origin, producer, vintage, colour, and many other factors. For example, when Brochetis served, a white wine, it usually receives all such descriptions as "fresh, dry, sweet, and lively."If the same wine is served, dyed red received the usual red terms: "intense, spicy, supple, and deep."

Tasting flights

Tasting flight is a term used by wine tasters to describe a selection of wines, usually between three and eight glasses, but sometimes as many as fifty, presented for the purpose of sampling and comparison.

SELF-ASSESSMENT EXERCISE

i. What is wine tasting?
ii. Mention the types of wine tasting.

3.3 Tasting Stages

There are four recognised wine tasting stages:

- appearance
- "in glass" the aroma of the wine
- "in mouth" sensations
- "finish" (aftertaste)

The results of the four recognised stages in wine tasting are combined to establish the following properties of a wine:

- complexity and character
- potential (suitability for aging or drinking)
- possible faults

A wine's overall quality assessment, based on this examination, follows further careful description and comparison with recognised standards, both with respect to other wines in its price range and according to known factors pertaining to the region or vintage such as:

- if it is typical of the region
- if it diverges in style

- if it uses certain wine-making techniques, such as barrel fermentation or malolactic fermentation
- or any other remarkable or unusual characteristics.

Whereas wines are regularly tasted in isolation, a wine's quality assessment is more objective when performed alongside several other wines, in what are known as tasting "flights." Wines may be deliberately selected for their vintage ("horizontal" tasting) or proceed from a single winery ("vertical" tasting), to better compare vineyard and vintages, respectively. Alternatively, in order to promote an unbiased analysis, bottles and even glasses may be disguised in a "blind" tasting, to rule out any prejudicial awareness of either vintage or winery.

3.4 Steps in Wine Tasting

In wine tasting, wine is often perceived before being drunk to identify some components of the wine that may be present. Different terms are used to describe what is being perceived. The most basic term is aroma, which generally refers to a "pleasant" smell as opposed to odour, which refers to an unpleasant smell or possible wine fault. The term aroma maybe further distinguished from bouquet, which generally refers to the smells that arise from the chemical reactions of fermentation and aging of the wine. Wine tasting entails the following steps.

1. Look at the wine

Tilting the glass a bit can make it easier to see the way the colour changes from the center to the edges. Holding the glass in front of a white background, such as a napkin, tablecloth, or sheet of paper, is another good way to make out the wine's true colour. Look for the colour of the wine and the clarity.

What colour is it? Look beyond red, white or blush. If it is a red wine is the colour maroon, purple, ruby, garnet, red, brick or even brownish? If it is a white wine, is it clear, pale yellow, straw-like, light green, golden, amber or brown in appearance?

Intensity, depth or saturation of colour is not necessarily linear with quality. White wines become darker as they age while time causes red wines to lose their colour turning more brownish, often with a small amount of harmless, dark red sediment in the bottom of the bottle or glass. This is also a good time to catch a preliminary sniff of the wine so you can compare its fragrance after swirling. This will also allow you to check for any offensive odors that might indicate spoilt (corked) wine.

2. Swirl the wine in your glass

This is to increase the surface area of the wine by spreading it over the inside of the glass allowing them to escape from solution and reach your nose. It also allows some oxygen into the wine, which will help its aromas open up.

3. Note the wine's viscosity

This shows how slowly the wine runs back down the side of the glass while one is swirling. More wines that are viscous are said to have "legs," and are likely to be more alcoholic. Besides its colour, it is not related to a wine's quality but may indicate a more full -bodied wine.

4. Sniff the wine

Initially you should hold the glass a few inches from your nose. Then let your nose go into the glass. What do you smell?

5. Take a sip of wine, but do not swallow

The difference between drinking and tasting is expectorating! Roll the wine around in your mouth exposing it to all of your taste buds. You will only be able to detect sweet, sour, salty, and bitter. Pay attention to the texture and other tactile sensations such as an apparent sense of weight or body.

6. Aspirate through the wine

With your lips pursed as if you were to whistle, draw some air into your mouth and exhale through your nose. This liberates the aromas of the wine and allows them to reach your nose where they can be detected. The nose is the only place where you can detect a wine aroma. However, the enzymes and other compounds in your mouth and saliva alter some of a wine's aromatic compounds. By aspirating through the wine, you are looking for any new aromas liberated by the wine's interaction with the environment of your mouth.

7. Take another sip of the wine

This time, especially if you are drinking a red wine, introduce air with it. In other words, slurp the wine without making a loud slurping noise. Note the subtle differences in flavour and texture.

8. Note the aftertaste when you spit

How long does the finish last? Do you like the taste?

9. Write **down what you experienced**

You can use whatever terminology you feel comfortable with. The most important thing to write down is your impression of the wine and how much you liked it. Many wineries provide booklets and pens so that you can take your own tasting notes. This will force you to pay attention to the subtleties of the wine. In addition, you will have a record of what the wine tastes like so that you can pair it with meals or with your mood. Wines have four basic components:

- taste
- tannins
- alcohol
- acidity.

Some wines also have sweetness, but the latter is only appropriate in dessert wines. A good wine will have a good balance of all four characteristics.

- Aging will soften tannins.
- Acidity will soften throughout the life of a wine as it undergoes chemical changes, which include the breakdown of acids.
- Fruit will rise and then fall throughout the life of a wine.
- Alcohol will stay the same.

All of these factors contribute to knowing when to drink/decant a wine. Malolactic fermentation (the natural or artificial introduction of a specific bacterium) will cause white wines to taste creamy or buttery. Aging in oak will cause wines to take on a vanilla or nutty flavour. Other common taste descriptors are minerality, earthiness and asparagus.

10. Match the glassware to the wine.

Match the glassware to the wine. Stemware/drink ware comes in a variety of shapes and sizes. The more experienced wine drinkers and connoisseurs often enjoy wines out of stemware or bulbs that are tailor-made for a specific varietal. When starting out, there is a basic rule of thumb; larger glasses for reds, and smaller glasses for whites.

3.5 Components of Aroma

There are volatile and non-volatile compounds that contribute to the makeup of a wine aroma. During the fermentation and for the first few months of a wine's existence, chemical reactions among these compounds occur frequently and a wine aroma will change more rapidly during this period than at any other point. As a wine ages and matures, changes and developments in aroma will continue to take place but at a slower and more gradual pace. Volatile aroma compounds are present in the skin and juice of a grape berry and will vary in composition according to the individual grape variety.

The act of tasting wine is essentially the act of smelling these vaporised aroma compounds. Olfactory receptors cells, each sensitive to a different aroma, pick up these compounds and transfer the information to the brain by way of the olfactory bulb.

Study of the compounds responsible for aroma and flavour, as well as their correlation with a wine's quality, is ongoing. As understanding of these compounds grows, there is concern that wines in the future could be "manipulated" through the use of chemical additives to add complexity and additional aromas to wine (such as creating a manufactured perfume). In 2004, a winery in South Africa was found to have added illegal flavouring to their Sauvignon blanc to enhance the aroma.

Some of the identified aroma compounds include the following.

- Methoxypyrazine: This is a grassy, herbaceous aroma compound associated with *Cabernet Sauvignon* and *Sauvignon blanc*.
- Monoterpenes: This isresponsible for the floral aromatics of varieties like Gewürztraminer, Muscat and Riesling. Includes geraniol, linalool and nerol.
- Norisoprenoids-Carotenoid: This is derived aromatic compound that includes megastigmatrienone, which produces some of the spice notes associated with Chardonnay and zingerone responsible for the different spice notes associated with Syrah.
- Thiols-sulfur: This contains compounds that can produce an aroma of garlic and onion that is considered a wine fault (mercaptans). They have also been found to contribute to some of the varietal aromas associated with Cabernet Sauvignon, Gewürztraminer, Merlot, Muscat, Petit Manseng, Pinot blanc, Pinot gris, Riesling, Scheurebe, Semillon and Sylvaner.

Esters

Some of the aromas perceived in wine are from esters created by the reaction of acids and alcohol in the wine. Esters can develop during fermentation, with the influence of yeast, or later during aging by chemical reactions.

3.6 Characteristics Assessed during Tasting

a. Varietal character

This describes how much a wine presents its inherent grape aromas.

b. Integration

This is a state in which none of the components of the wine (acid, tannin, alcohol, etc.) is out of balance with the other components. When a wine is well balanced, the wine is said to have achieved a harmonious fusion.

c. Expressiveness

Expressiveness is the quality the wine possesses when its aromas and flavours are well defined and clearly projected. The complexity of the wine is affected by many factors, one of which may be the multiplicity of its flavours.
The connectedness of the wine, a rather abstract and difficult to ascertain quality, describes the bond between the wine and its land of origin (*terroir*).

3.7 Advantages of Wine Tasting

The advantages of tasting wine include:

- to develop learning from experience
- to help in the assessment of the quality of a wine in terms of value when making purchasing decisions
- to monitor the progress of a wine being stored to determine the optimum selling time as part of protecting investment
- helps in describing the wine when explaining its qualities or deficiencies to a customer
- provides a personal record of wines tested to reinforce learning and experience.

SELF-ASSESSMENT EXERCISE

i. What characteristics are assessed during wine tasting?
ii. Mention the tasting stages of wine.

4.0 CONCLUSION

Wine tasting is a skill that when employed, brings out all there is to know about the taste of the wine. The taste of wine is all wrapped around the volatile and non-volatile compounds, which contribute to the makeup of wines' aroma.

5.0 SUMMARY

In this unit, we have discussed the various types of wine tasting, which include blind, vertical and horizontal. Recognised wine tasting stages include appearance, in glass, in mouth and finish. You learnt that wines have four basic components: taste, tannins, alcohol and acidity. Characteristics assessed during tasting are-varietal character, integration and expressiveness. We also discussed several advantages of wine tasting.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define the term "wine tasting."
2. Outline the types of wine tasting.
3. Discuss the various steps in wine tasting.
4. Itemise the advantages of wine tasting.

7.0 REFERENCES/FURTHER READING

Jackson, R. S. (2009). *Wine Tasting: A Professional Handbook.*

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UNIT 4 FACTORS AFFECTING THE TASTE OF WINE

CONTENTS

1.0 INTRODUCTION

In the previous unit, we looked at wine tasting, the types of wine tasting as well as the steps and stages in wine tasting, the characteristics evaluated and the advantages of wine tasting. In this unit, we shall be discussing the factors affecting the taste of wine.

Taste, also called smatch or gestation, is one of the traditional five senses. It refers to the ability to detect the flavour of substances such as food, certain minerals, poisons, etc. In the tasting of wine, the tasters employ their taste organs to qualify the wine. Various factors have been recognised as having effect on the final taste of wine. These factors will be considered in this unit.

2.0 OBJECTIVE

At the end of this unit, you should be able to:

- state the various factors that influence the taste of wine.

3.0 MAIN CONTENT

3.1 Factors Affecting the Taste of Wine

3.1.1 The Vine

The single most influential factor affecting the taste of wine is the grape variety or varieties from which it is made. It is impossible to put a definitive figure on the number of varieties of wine grapes in the world. Italy alone has more than 1,000 varieties. Each variety has its own distinct character and part of the fun of getting to know them is choosing a word which precisely describes the smell and taste of a particular grape.

3.1.2 Vineyards and Vinification

Climate, altitude and soil composition all have a part to play in determining flavour. A few extra degrees of warmth can introduce more exotic, tropical flavours. Altitude promotes higher acidity, which also affects taste. There can be significant flavour differences between the same varieties grown in different parts of the same country, especially if a number of different latitudes are involved. Vines cooled by sea breezes ripen more slowly and evenly than those on hot, insulated, inland vineyards do. All these factors have a profound effect on flavour. Generally, wines produced in hot climates have a higher alcohol content and lower acidity content than wines produced in cooler climates.

The concept of *terroir* is important to grasp, as it is central to an ongoing debate as to how much of the distinctive character of a wine stems from the specific environment in which it grows. Its literal meaning is “soil” and in broad terms, the word refers to a regional, or even a particular vineyard character which “sings” in the wine, and represents the combined effects of soil and other factors such as climate and exposure. More specifically, some tasters swear they can taste, for example, slate in a glass of Mosel, or flint in Chablis. There is no conclusive scientific evidence yet to support the notion that a patch of earth could make its presence so acutely felt in the glass, but there is general agreement that certain vineyard sites do have tangible characteristics, which it is possible to spot despite vintage variations.

3.1.3 Technology

Technology has made it possible to produce wine in a particular style, irrespective of its origins. Some branded wines, for which consistency is very important, rely on the increasing ability of technology, including special yeasts and fermentation techniques, to create uniformity of flavour despite the vagaries of vintage or even variety. In many evolving wine regions, expertise from abroad improves and raises the profile of local wines, but in others serves purely to create international appeal.

3.1.4 Oak

The vanilla aromas and toasty flavours, which are present in wine, which has been fermented and/or aged, in a barrel are instantly recognisable. The mighty oak has always been associated with wine production.

The inside of a barrel is finished by firing, on a range of lightly toasted to charred. This will have its own effects on the wine, which will be stored in them. The age of the barrel, the intensity, which decreases with time, and its size, all affect wine in their own way. Very large barrels influence texture more than taste so that wines fermented or aged in them may display more subtle effects of oak, such as a creaminess of taste, or roundness of texture.

The use of wood chips to flavour everyday wines provides a quick and inexpensive fix, at around five per cent of the cost of a new barrel. The winemaker’s decision is not, however, based only on price. Some grape varieties are better suited to oak than others are, and vintage characteristics also have a part to play, as does wine style. The differences between a gently oxidised tawny port, aged entirely in cask, and a deeper-coloured, fruity vintage Port, aged in bottle, are striking.

3.1.5 Time

As wine gets older, it changes dramatically in taste. Harsh tannins polymerise and soften, brash acidity and raw alcohol interact to form compounds called esters, and primary fruit flavours evolve into complex bouquets. When mature fruit and alcohol are in balance, the wine can be said to have reached a platform of drinkability, which may last for a number of years. At the end of this period, the wine is at the end of its useful life, and should be drunk up before it begins to taste dried out.

3.1.6 Soil

Wines have the attributes of the soil that their grapes come from. Clayey soils stick to the hand and are astringently 'sticky' in the mouth, limestone soils make wines with 'curves' (galbe) and gravelly soiled wines are free-flowing just like letting a fistful of gravel fall from your hand.

3.1.7 Other Factors

Other factors that affect the taste of wine include:

- yeast and fermentation
- vintage
- method of shipping and transportation
- storage temperature
- decanting.

SELF-ASSESSMENT EXERCISE

i. List the factors that affect the taste of wine.
ii. Outside those listed above; state other factors that will influence the taste of wine.

3.2 External Factors Influencing the Taste of Wine

3.2.1 Temperature

The temperature at which wine is served affects its taste. At warmer temperatures, wines were much less astringent. Colder temperatures accentuate the hardness of tannins. Stipulating the right temperature to serve a wine by type does not go far enough. It is essential to decide on the right temperature for each wine.

3.2.2 Noise Interference

The taste of wine is affected by noise. Noisy environment makes wine seem less aromatically intense.

3.2.3 Colours

Colour of one's immediate surroundings is very important when tasting wine. Neutral colours cause less "interference" when tasting wines.

3.2.4 Foods

Some foods also affect the taste of wine. In a bid to match texture, volume and flavour in food and wine pairing, some foods make some wines appear much lower in acidity and also rounder and riper.

3.2.5 Shape and Structure

Wines do have their own shape and structure and we need to consider this when matching foods with wines.

SELF-ASSESSMENT EXERCISE

What are the external influences on the taste of wine?

4.0 CONCLUSION

Internal influences on the taste of wine include the grape variety used, the vineyard and vinification, technology, oak, time. External influences on the taste of wine are: temperature, noise, colour, food, shape and structure of the wine.

5.0 SUMMARY

It has been shown in this unit that there are both internal and external influences on the final taste of wine. These factors should be taken into consideration in the production and tasting of wines to control or eliminate their influences.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the internal and external influences on the taste of wine.

7.0 REFERENCES/FURTHER READING

Lillicrap, D. & Cousins, J. (2006). *Food and Beverage Service.* (7th ed.). Hodder Arnold.

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UNIT 5 DECANTING

CONTENTS

1.0 INTRODUCTION

In the last unit, we discussed the internal and external influences on the taste of wine. In this unit, we shall be looking at the art of decanting and its effect on wine. Who actually owns a decanter nowadays? People who live in stately homes, or perhaps the proprietors of antique and curiosity shops? Anyone who wants the best from their wine should own one. Decanting wines is not just for show, and even in this modern age of industrial, fined and filtered wines, some wine will still benefit from spending some time in a decanter. Decanting is known to improve the smell and taste of wine.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the importance of decanting wines
- explain how wine is decanted.

3.0 MAIN CONTENT

3.1 Meaning of Decanting

Decanting means the transfer of contents of a wine bottle into another receptacle (the decanter) before serving.

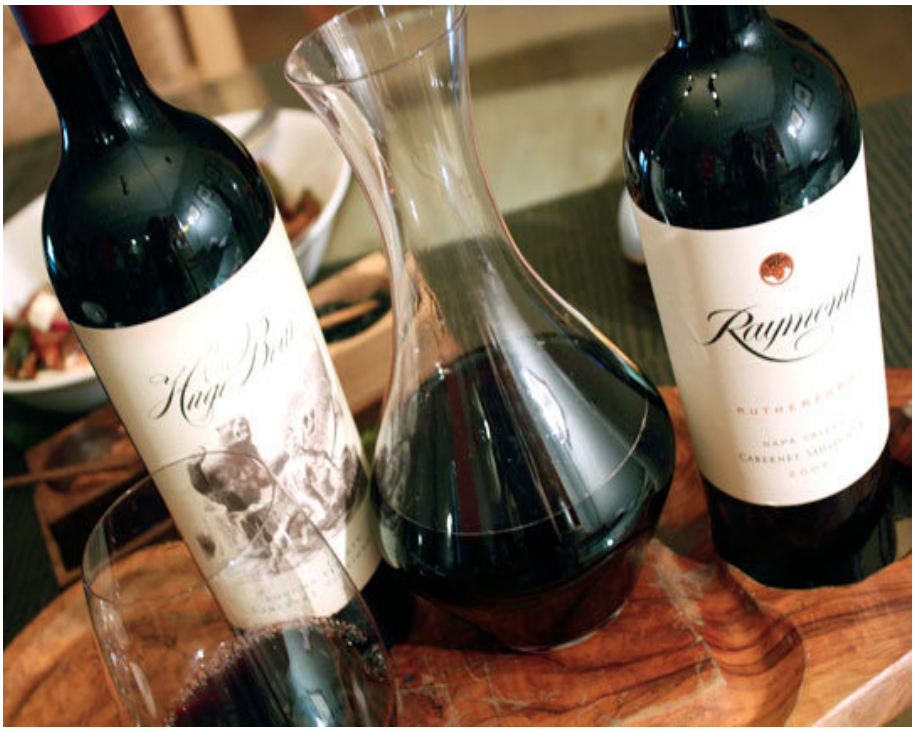

FIG. 5.1: Example of a Decanter

3.2 Why Do We Decant?

In times gone by, before so many wines were routinely fined and filtered to a clear state, it was quite common for wines poured from both barrel and bottle to contain a considerable degree of solid matter. In order to avoid bringing an unsightly looking wine to the table, it was quite the norm to decant the wine into a suitably resplendent receptacle. The need for such a receptacle led to the development of the many and varied elegant decanters, which are available today. The presentation of wine in a beautiful crystal decanter adds to the ambience of a beautifully set table and prepared dinner.

Most wines on the shelves today, however, have no real need for decanting. The winemaking process ensures the wine is thoroughly clarified before it is bottled. A process of fining which involves passing egg whites, bentonite clay or other unsavoury substances through the fine to collect solid matter, and mechanical filtration were applied. Although these wines are often best served from the bottle, many others still benefit from decanting.

Wines, which have aged in bottle, typically red wines rather than white, will generally throw sediment by perhaps 10 years of age or more. Not only is this sediment displeasing to the eye, it can also be quite

unpleasant in the mouth. More than any other wines, these ones deserve decanting.

Young wines also benefit from decanting. The aim is not to take the wine off its sediment, as there is rarely any such sediment in young wines, but rather to aerate the wine. The action of decanting itself, and the large surface area in contact with the air in the decanter, alters the wine. Decanting softens its youthful bite and encourages the development of the more complex aromas that normally develop with years in bottle. For this reason, even inexpensive wines plucked from the shelves of the local supermarket can benefit from decanting, if a first taste reveals a tannic and youthful structure.

Therefore, the essence of decanting is as listed below:

- Decanting separates the wine from the sediment, which not only would not look nice in your glass, but would also make the wine taste more astringent.
- Decanting the wine ensures that the sediment stays in the bottle and you get a nice clear wine in the decanter, and subsequently in your glass.
- Decanting aerates the wine. Many young wines can be tight or closed on the nose or palate. As the wine is slowly poured from the bottle to the decanter, it takes in oxygen, which helps open up the aromas and flavors. Highly tannic and full-bodied wines benefit most from decanting.

3.3 How to Decant a Wine

Assuming that we are decanting a wine to remove it from its sediment, there is a simple procedure to follow. If decanting a wine is simply to aerate it and perhaps liven it up a little, this procedure does not really matter. Simply pour the wine into any suitable receptacle with minimal fuss.

First, take the wine from where it has been stored, hopefully lying on its side in a suitably cool, dark environment. If you suspect a considerable amount of sediment, as may occur with older wines, it is advisable to stand the bottle upright for a day or so prior to decanting, thus allowing the sediment to fall to the bottom of the bottle.

When the time comes to decant the wine, assemble the few things, which you will need. These are corkscrew and bottle together with a suitable receptacle, together with a suitable source of light. A small candle or a small torch or anything similar will do.

First, remove the entire capsule from around the neck of the bottle, using a knife or other instrument. It is important to remove the whole capsule, and not just the top, as you need to have a clear view into the neck of the bottle whilst decanting. This will allow you observe the wine coming through the neck for sediment. To enhance your view of the wine in the neck, position the light source shining through the neck from behind. Once done, you are ready to pour.

Hold the receptacle in one hand and the bottle in the other, and with a smooth and steady action, pour the wine into the decanter. Do not rush when decanting, rather use a gentle, steady movement, to avoid disturbing the sediment in the wine.

Keep the neck of the bottle over the light source, so that you can observe for an arrowhead of sediment moving into the neck of the bottle. This is your cue to stop pouring.

If you have done it all correctly, the result should be a full carafe or decanter of clear wine, with just half a glass or so of sediment-laden wine remaining. This remaining portion makes a great addition to the gravy, should you be decanting the wine as an accompaniment to a roast dinner. Do not fret too much if you have not achieved a clear pour, as a small amount of very fine sediment is not a great concern - as long as the large, unpalatable pieces have been removed.

SELF-ASSESSMENT EXERCISE

i. What is decanting?
ii. Why do we decant a wine?

4.0 CONCLUSION

Wine decanting is very beneficial to the sommelier. Old wines that have been cellared properly will contain sediment due to the aging process. By properly decanting the wine, the sediment will remain in the bottle.
Young full-bodied red wines can benefit from decanting. When the wine is exposed to oxygen, the aromas present in the wine are released. The decanter in this case should be a wide bottomed decanter. Wide body decanters provide more surface area for oxygen to allow aromas from the wine to be released.
The presentation of wine in a beautiful crystal decanter adds to the ambience of a beautifully set table and prepared dinner.

5.0 SUMMARY

In this unit, you have learnt what is meant by decanting a wine, reasons for decanting a wine and process of decanting a wine.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define the term “decanting”.
2. State the reasons for decanting wines.
3. Explain the process of wine decanting.

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MODULE 3

UNIT 1 WINE AND FOOD PAIRING

CONTENTS

1.0 INTRODUCTION

The combination of food and wine is one of life's great pleasures. It is as old as wine making. The flavour of wine consumed on its own will taste different from when it is consumed with food. Wine and food pairings is an individual choice. Every person's sense of taste is different. In general, each person should decide for him or herself what combinations of wine and food taste good. Pairing wine with food is more complicated than "red with beef and white with fish." Ultimately, a wine should complement the food and cleanse the palate. Food and its accompanying wine should harmonise well together, with each enhancing the others performance.

2.0 OBJECTIVE

At the end of this unit, you should be able to:

state the guidelines for pairing wine with food.

3.0 MAIN CONTENT

3.1 Characteristics of Wine and Food Considerations

Table 3.1 shows the characteristics of wine and their food considerations.

Table 3.1: Wine Characteristics and their Food Considerations

Characteristics	Food Considerations
Acidity	This can be used to match or contrast acidity in foods. For example, crisp wine can go well with lemon or tomato.
Age/maturity	The more a wine matures, the more delicate it becomes with complex and intricate flavours. This goes better with grills and roasts. Stronger tasting foods could overpower the wine.
Oak	The more oaked wines go better with more robust and flavoured foods.
Sweetness	It is expected that the wine should taste sweeter than the food so that it does not taste flat or thin with the food. Sweet foods need to be contrasted to blend well with the sweeter wine. For example,acid in foods can harmonise well with sweetness in wine.
Tannin	Tannic wines match well with red meats and semi-hard cheese; but not with egg dishes and salty foods.
Weight	Big rich wines go well with robust/flavoursome meat dishes; but not light –flavoured foods, which they easily overpower.

3.2 Tradition for Matching Wine and Food

Over the years, traditions have developed a how-to- approach to the pairing of wines and foods. Generally, the following traditions apply:

- White wine is best served with white meat, shellfish and fish.
- Red wine is best served with red meat.
- The heavier the food, the more robust the wine should be.
- Champagne can be served throughout the meal.
- Port and red wine go well with cheese.
- Dessert wines best complement desserts and fresh fruits that are not highly acidic.
- When a dish is cooked with wine, it is best served with that wine.
- Regional food is best complemented by wines from the region.

- Wines should never accompany salads with vinegar dressings, chocolate dishes or curries, as the taste will clash or be overpowering.
- Sweet wines should be served with foods that are not too sweet.

3.3 Other Rules in Wine and Food Pairing

The most important rules when it comes to wine and food pairing are:

1. Drink and eat what you like

Choose a wine that you would want to drink, rather than hoping a food match will improve a wine made in a style you do not like. That way, even if the pairing is not perfect, you will still enjoy what you are drinking; at worst, you might need a sip of water or bite of bread between the dish and the glass. The same holds true for the food. After all, if you detest eating liver, there is no wine pairing with it on earth that will work for you.

2. Look for balance

Consider the weight—or body, or richness—of both the food and the wine. The wine and the dish should be equal partners, with neither overwhelming the other. If you balance the two by weight, you raise the odds dramatically that the pairing will succeed. This is the secret behind many classic wine and food matches.

3. Match the wine to the most prominent element in the dish

This is critical to fine-tuning wine pairings. Identify the dominant character; more often, it is the sauce, seasonings or cooking method, rather than the main ingredient. Consider two different chicken dishes: chicken Marsala, with its browned surface and a sauce of dark wine and mushrooms, versus a chicken breast poached in a creamy lemon sauce. The caramelised, earthy flavours of the former tilt it toward a soft, supple red, while the simplicity and citrus flavours of the latter call for a fresh white.

4. Structure and texture matter

Ideally, a wine’s components are in balance, but you can affect that balance, negative or positive, with the food pairing. Elements in a dish can accentuate or diminish the acidity and sweetness of a wine, and the bitterness of its tannins.

High levels of acidic ingredients, such as lemon or vinegar, for example, benefit high-acid wines by making them feel softer and rounder in comparison. On the other hand, tart food can turn balanced wines flabby.

Sweetness on the palate can make a dry wine taste sour, but pairs well with a bit of sweetness in the wine; as long as a wine balances its sugar with enough natural acidity (such as German Rieslings and demi-sec Champagnes), it can work very well with many dishes.

Tannins interact with fats, salt and spicy flavours. Rich, fatty dishes such as steak diminish the perception of tannins, making a robust wine such as a Cabernet seem smoother, as do lightly salty foods like Parmigiano-Reggiano cheese. However, very salty foods increase the perception of tannins and can make a red wine seem harsh and astringent; salt likewise accentuates the heat of a high-alcohol wine. Very spicy flavours also tend to react badly with tannins and high alcohol, making the wines feel hotter; such dishes fare better with fruity or lightly sweet wines.

5. Look for flavour links

This is where pairing can be endless fun. The aromatics of wine often remind us of foods such as fruits, herbs, spices and butter. You can create a good match by including ingredients in a dish that echo—and therefore emphasize—the aromas and flavours in a wine. For a Cabernet, for example, currants in a dish may bring out the wine's characteristic dark fruit flavours, while a pinch of sage could highlight hints of herbs.

On the other hand, similar flavours can have a "cancellation effect"—balancing each other out so that other aspects of a wine come out more strongly. Serving earthy mushrooms with an earthy red might end up giving more prominence to the wine's fruit character.

6. Consider age of the wine

Aged wines present a different set of textures and flavours. As a wine matures, the power of youth eventually subsides; the tannins soften, and the wine may become more delicate and graceful. Fresh fruit flavours may give way to earthy and savory notes, as the wine takes on more complex, secondary characteristics. When choosing dishes for older wines, tone down the richness and big flavours and look for simpler fare that allows the nuances to shine through. For example, rather than a grilled, spice-rubbed steak with an older Cabernet, try lamb braised for hours in stock.

SELF-ASSESSMENT EXERCISE

i. List the wine characteristics considered in food pairing.
ii. List the rules in wine-and-food pairing.

4.0 CONCLUSION

The art of wine and food pairing is one, which can bring our experience of both the food and the wine to new levels. There is something almost magical about the interaction of some food and wine, creating a synthesis that is beyond either alone. However, while the right wine and food pairing can increase one's pleasure, matching the wrong food and wine can cause the diminution of either or both.

Wine and food matching is the process of pairing food dishes with wine to enhance the dining experience. Feel free to drink whichever wine you want with whatever food you want, but remember a perfect pairing is a highly enjoyable experience. Always remember also that the goal in food and wine pairing is the enjoyment of the food and wine. You and your guest will be the judge of this experience.

5.0 SUMMARY

In this unit, you have learnt about few important points to bear in mind when thinking about which wine works well with which food. These include the following.

- Keep your guests' tastes in mind - will they enjoy the wine you are considering?
- When pairing wine and food, there are just a few combinations to avoid.
- Watch out for problem foods. Do you need to serve more than one wine to get around this?
- Do not be swayed by the opinions of others. Riesling with beef is fine, if that is what you enjoy.

Wine characteristics considered in food pairing are acidity, age/maturity, sweetness, oak, tannin, and weight.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the main considerations in wine and food pairing.

7.0 REFERENCES/FURTHER READING

Lillicrap, D. & Cousins, J. (2006). *Food and Beverage Service*. (7th ed.). Hodder Arnold.

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UNIT 2 SENSORY EVALUATION OF WINE

CONTENTS

1.0 INTRODUCTION

In Unit 1, we discussed wine and food pairing. In this unit, we shall be discussing sensory evaluation of wine. The attributes of a wine rely on the sensory acuity of the winemaker or the winemaker's team. Depending on the winery operations or the style of wine made, the winemaker can be viewed as the expert creating an artisan wine or producing a commercial alcoholic beverage designed to appeal to many consumers. The globalization of the wine market now enables more consumers to taste wines produced in foreign regions. Winemakers producing popular wines have been challenged by evolving consumer needs, values, and motivations for drinking wines, consumption habits, and greater product competition.

Sensory evaluation provides tools to assist winery operations by characterising wine sensory properties thus providing better understanding of consumer preferences and designing better wine styles.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain sensory analysis of wine
- state the sensory characteristics of wine
- itemise the challenges of sensory evaluation.

3.0 MAIN CONTENT

3.1 Sensory Analysis

Sensory analysis or sensory evaluation is a scientific discipline that applies principles of experimental design and statistical analysis to the use of human senses (sight, smell, taste, touch and hearing) for the purposes of evaluating consumer products. The discipline requires panels of human assessors, on whom the products are tested, and recording the responses made by them. By applying statistical techniques to the results, it is possible to make inferences and insights about the products under test. Most large consumer companies have departments dedicated to sensory analysis.

Sensory analysis can mainly be broken down into three sub-sections:

- effective testing (dealing with objective facts about products)
- affective testing (dealing with subjective facts such as preferences)
- perception(the biochemical and psychological aspects of sensation).

Effective testing

This type of testing is concerned with obtaining objective facts about products. This could range from basic discrimination testing (e.g. aretwo or more products differ from each other?) to descriptive profiling (e.g. what are the characteristics of two or more products?). The type of panel required for this type of testing would normally be a trained panel.

Affective testing

Also known as consumer testing, affective testing is a type of testing concerned with obtaining subjective data, or how well products are likely to be accepted. Usually large (50 or more) panels of untrained personnel are recruited for this type of testing, although smaller focus groups can be utilised to gain insights into products. The range of testing can vary from simple comparative testing (e.g. which do you prefer, A or B?) to structured questioning regarding the magnitude of acceptance of individual characteristics (e.g. please rate the “fruity aroma”: dislike|neither|like).

Perception

Perception involves the biochemical and psychological theories relating to human (and animal) sensations. By understanding the mechanisms

involved, it may be possible to explain why certain characteristics are preferred over others.

SELF-ASSESSMENT EXERCISE

i. What is sensory evaluation?
ii. State the three sub-sections of sensory evaluation.

3.2 Practical Sensory Evaluation Procedures

There are many sensory methods available such asdifference testing, consumer preference and acceptance testing, descriptive analysis, assessment of wine quality using the Australian 3/7/10 system, and estimation of the presence and intensity of off-flavours in wine which arise post-bottling (e.g. cork taint, random oxidation). Performing some of these tests might not be feasible in a small- to medium-sized winery. However, they are offered as a service by other companies if needed.

Difference testing

Difference testing is a way to determine if a sensory difference actually exists between the wine samples. The degree or nature of the difference might not be able to be quantified, yet difference testing is important to determine if different winemaking processing techniques or operations have had an impact on the sensory properties of a wine. For example, difference tests may be performed to determine whether different fermentation conditions or new vineyard treatments alter the character of a wine. This is something particularly important to producers who aim for consistency.

Selection of the appropriate difference test depends on many factors, including the objectives of the test, the number of available tasters and the volume of wine needed for the test.

There are four suitable types of difference tests: triangle, duo-trio, paired comparison and same/different tests. Once a difference has been established, a paired preference test can also be performed.

***Triangle* tests**

These are useful as a multi-purpose difference test to be used throughout the winemaking process when comparing two wines for a difference. The taster is presented with three wines; two are the same and one is different. The taster is required to select the sample, which is different. *Triangle* tests are often preferred as they require fewer tasters to perform

the assessment as there is a greater likelihood that a result will be genuine and not due to a chance effect.

Duo-trio **tests**

These tests are often used instead of a *triangle* test to compare unknown differences between wines. Tasters are presented with a reference wine, and then two test wines; one test wine, which is the same as the reference and the other, is the wine to be tested. Tasters are asked to identify the sample that is the same as the reference wine. This test might be preferred as the taster has a reference wine to compare to, which generally tasters find easier to evaluate. It can also be better for assessing red wines by palate, as there is less taster fatigue. However, more tasters are required to perform the test.

Paired comparison **tests**

These are tests used when there is a known difference in chemical composition of the wines, which requires a sensory assessment (i.e. a wine is higher in residual sugar, but is it sweeter?) Tasters are presented with two wines and asked to identify which sample is higher in the attribute. This test can be useful when assessing alternative wine blends. The test requires the same amount of wine and tasters as the duo-trio test.

S*ame/different* test

This is similar to the *paired comparison* test. However, it is used when the difference between two wines is unknown. Tasters are asked to identify whether they think the two samples presented are the same or different. These tests are easy to set up, but more tasters are required to perform them. The tasters must perform the test at least twice, receiving a different randomised serving order each time.

Preference test

Once a significant difference has been established between two wines a preference test can be performed. This is useful in situations where winemakers are trying to assess which blend or which yeast fermentation they prefer. It is important to note that a preference test should be performed separately and after a difference test. It may be tempting to combine the two but this should be avoided as results can be misleading. In determining preference, it is also important for the tasters to consider (and possibly discuss) the desired wine style required before tasting the wine. The preference decision should not be a personal preference, but a preference for the wine, which best suits the desired

wine style. Preference testing can also be done to establish consumer preference

Descriptive analysis

Descriptive analysis determines the most prominent traits of the wine. It involves trained panels (six-30 people) who evaluate products by rating the intensity of various characteristics on a scale. Statistical analyses are applied to look for differences among various products for characteristics of interest.

SELF-ASSESSMENT EXERCISE

i. List the various sensory evaluation procedures.
ii. Mention the four types of difference tests.

3.3 Sensory Tools to Characterise Wine

Sensory evaluation is a scientific discipline used to evoke, measure, analyse, and interpret reactions to stimuli perceived through the senses. Sensory tests are conducted according to protocols minimising physiological and psychological biases that could affect the sensory response of the sensory panel lists. The sensory characteristics of wine are:

- sight/appearance
- odour
- taste

Sight

Sight is the first tool you will use in the wine tasting process. The visual clues that one receives from looking at a glass of wine can be illuminating. One can learn about the probable age, overall condition, as well as the probable "weight" of the wine from merely studying the wine closely. The best possible way to examine wine is over a neutral, preferably white background, lit by natural lighting above.

Odour

Odour is the second and most important tool in the tasting process. The human sense of smell is capable of detecting more than 10,000 different odors, with a "trained" nose capable of recognising more than 1,000 specific aromas. The human sense of smell is also considered the strongest trigger for memories, especially "taste" memories. After

examining the wine, the next step is to smell the aroma of the wine, again looking for clues about the wine.

Taste

Taste is the third and last tool in the tasting process. The human sense of taste is based entirely on the taste buds present on the tongue, which are capable of perceiving four basic flavour components: sweet, sour, bitter and salt. While the sensation associated with taste oftentimes seems grander than the four aspects listed, the taste buds are only designed and arrayed to recognise these four simple traits.

The human body provides two pathways to the olfactory epithelium, the organ that senses smell. One is directly through the nostrils. The other is through passageways in the roof of the mouth that lead indirectly into the nasal passage.

Use the taste buds to focus on the following aspects of a wine character.

- The **structure** of a wine is defined by the overall weight/body of the wine combined with the presence of a substance called tannin.
- The **balance** of a wine is defined by the ratio of sweet to sour and whether a wine's base flavour is harmonious with all of its components.
- The **weight/body** of a wine is evident by the fullness, or lack of fullness in the mouth. Wines that seem "heavy" on the palate are illustrating a trait of full-bodied wines.
- The **level of tannin** in a wine is indicated by the presence of "bitterness" on the sides of the tongue. Tannin will give the impression of dryness in the mouth. Suck briefly on a used tea bag and you will know exactly what the sensation of tannin is like.
- For **balance**, look for the sensations of sweet and sour on the tongue. Some grapes have a greater potential for acidity, but that acidity is usually kept in check either by a winemaker's ability to bring out the natural fruit sweetness in the variety, or perhaps by leaving a small amount of residual sugar in the wine. Wines that are too sharp or wines that leave a cloying feeling on the palate illustrate wines that may be out of balance.

SELF-ASSESSMENT EXERCISE

List the sensory characteristics of wine.

3.4 Practical Sensory Evaluation Considerations

1. Tasters should taste the wine "blindly"

The identification of the wines to be tasted should not be known to the taster(s). Wines should be presented in a different, randomised order for each taster, with no clues as to their identity. This ensures that the biases of all tasters are minimised, if not eliminated.

2. Have at least two independent tasters

Quality control assessments, such as wine additive taint screening or cork taint checking, require at least two tasters who have strengths in that type of assessment, (e.g. cork taint recognition) to evaluate the wine. If the two tasters do not agree, more rigorous testing might need to be applied.

Knowledge of winemakers and other staff members' sensory strengths and weaknesses is important for this type of testing. Variation among tasters in their ability to perceive different aroma and flavour compounds can be quite large. For example, some wine tasters might have a high threshold for "Brett" flavour compounds, but be very sensitive to cork taint or oxidation.

It is important to note that sensory testing does not have to be limited to winemakers. Any company staff member including administration and cellar door staff can potentially be used for sensory analysis provided they are familiar with the type of test, and their individual strengths and weaknesses have been evaluated. It is therefore, strongly recommended that the cellar floor staff members be trained in sensory evaluation.

This has two benefits: it will increase the number of tasters available for sensory evaluation and make the cellar floor staff members more aware of taints and faults, which is an important skill for people working with your product every day.

3. Repeat the tasting

When performing a difference test a single tasting by each taster might not provide the most accurate information about a wine due to the chance of tasters guessing the correct answer. Having tasters repeat the tasting exercise can decrease this chance of guessing. Difference tests also require a certain number of answers or responses to determine statistical significance and for this, the greater the number of responses the better. An easy way to increase the number of responses without increasing the number of tasters is to have each taster repeat the tasting

exercise. This is simple to do as tastings can be organised so that the same sample comparison is presented twice, with the wines presented in a different order each time.

4. Minimise presentation effects

Fatigue, adaptation, suppression/ masking of flavours and visual biases are all effects that can be decreased with correct presentation of the samples. Ideally, samples should be pre-poured at a constant tasting volume (30mL) and temperature (approx. 20ºC), into covered glasses, preferably coded with three digit random numbers. The samples should be presented in a random order, which differs for each taster. Tasters should taste within a set period (e.g. one hour), and if this is not possible, the samples should be re-poured (but not by the taster). This is standard practice in scientific sensory assessments and should be practiced in commercial tastings.

5. Minimise talking during tasting

To prevent tasters influencing the judgement of each other, tasters should not communicate until they have made, and written down, their judgement. To ensure tasters do not communicate during tasting, tasters should taste in isolation, either at different times, i.e. one person goes into the sensory lab as one goes out, or they could taste in different physical areas. If this is not possible, tasters should at least face away from each other and avoid eye contact and talking during the tasting. Use of tasting sheets is also suggested as they make the taster write down a response, and enable tasters to taste and record their results in a standardised format each time. Tasting sheets also enable easy collation of results, and can be filed so there is a record of all tastings.

6. Reduce physiological effects

Fatigue, degree of tiredness, hunger and other issues of emotional state will affect taster performance. Generally, it is recommended to carry out assessments in the morning, with no tasting held for at least half an hour after smoking, eating or drinking. To reduce effects of fatigue and adaptation, ideally a maximum of six to seven wines should be presented at any one session, with tasters having a short rest if more samples are to be assessed.

7. Establish if a difference exists before deciding on preference

Before considering preference testing, establish if there is a significant sensory difference with a difference test. Preferences are an important part of sensory testing and a winemaker will often need to state their

preference to aid decision making. Before doing this though, it is essential to ensure that a real difference actually exists between the wines. If there is no sensory difference, or if personnel cannot reliably and repeatedly detect a difference between samples, their preferences are meaningless, and probably due to random choice.

Challenges of sensory evaluation

- Variation among tasters - every taster has strengths and weaknesses
- Assessments based on a personal standard or benchmark
- Bias due to preconceptions when not tasting the wine "blindly"
- The "cellar palate" phenomenon
- Small, insignificant differences may be dwelled upon if the individual is particularly sensitive in that area
- Decisions being influenced by position in company hierarchy and seniority.

3.5 Faults in Wine

A wine fault or defect is an unpleasant characteristic of a wine often resulting from poor winemaking practices or storage conditions, and leading to wine spoilage. Many of the compounds that cause wine faults are already naturally present in wine but at insufficient concentrations to adversely affect it. In fact, depending on perception, these concentrations may impart positive characters to the wine. However, when the concentration of these compounds greatly exceeds the sensory threshold, they replace or obscure the flavours and aromas that the wine should be expressing. Ultimately, the quality of the wine is reduced, making it less appealing and sometimes undrinkable.

There are many causes for the perception in wine faults ranging from poor hygiene at the winery, excessive and/or insufficient exposure of the wine to oxygen, and excessive or insufficient exposure of the wine to sulphur. Other causes include overextended maceration of the wine either pre or post fermentation, faulty fining, filtering and stabilisationof the wine, the use of dirty oak barrels, over extended barrel aging and the use of poor quality corks. Outside of the winery, other factors within the control of the retailer or end user of the wine can contribute to the perception of flaws in the wine. These include poor storage of the wine that exposes it to excessive heat and temperature fluctuations as well as the use of dirty stemware during wine tasting that can introduce materials or aromas to what was previously a clean and fault-free wine.

SELF-ASSESSMENT EXERCISE

i. List the challenges of sensory evaluation.
ii. What is wine fault?

4.0 CONCLUSION

Sensory evaluation is used in the winemaking process to aid decision-making and to evaluate the quality of a wine. To ensure that production decisions are made based on real sensory differences between wines, it is vital to ensure that sensory assessment is performed in a suitable but scientific manner. Sensory assessment should accommodate for the high degree of variability in tasters responses, as one person's perception of a wine will be different from another.

5.0 SUMMARY

In this unit, you have learnt that sensory evaluation of wine involves tasting and testing the different characteristics of the wine. You were exposed to various tests and parameters employed to achieve the evaluation. Considerations and challenges involved in wine sensory evaluation were also considered.

6.0 TUTOR-MARKED ASSIGNMENT

1. What is sensory evaluation?
2. Discuss the sub-sections of sensory evaluation.
3. Explain the sensory evaluation considerations.
4. Itemise the challenges of sensory evaluation.

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UNIT 3 STORAGE OF WINES

CONTENTS

1.0 INTRODUCTION

In the previous unit, we looked at the sensory evaluation of wine. In this unit, we shall be discussing the storage of wine. Storage is an important consideration for wine that is being kept for long-term aging. While most wine is consumed within 24 hours of purchase, fine wines are often set aside for long-term storage. Wine is one of the few commodities that can improve with age and increase in value. It is therefore important that wine is stored in conducive conditions to avoid deterioration in quality.

2.0 OBJECTIVES

At the end of this unit, you shouldbe able to:

- state the factors that affect wines in storage
- enumerate the places to store wine
- discuss bottle orientation in wine storage and length of storage.

3.0 MAIN CONTENT

3.1 Factors Affecting Wine Storage

The factors affecting wine in storage include the following.

Light

Strong, direct sunlight or incandescent light can adversely react with phenolic compounds in wine and create potential wine faults. Delicate, light-bodied white wines run the greatest risk from light exposure, as they are often packaged in darkly tinted wine bottles that offer some protection from the light. Wines packaged in clear, light green and blue coloured bottles are the most vulnerable to light and may need extra precautions for storage. In the cellar, wines are stored in corrugated boxes or wooden crates to protect the wines from direct light.

Humidity

Some degree of humidity is required to keep wines with cork enclosures from drying out. Even when wine bottles are stored on their sides, one side of the cork is still exposed to air. If the cork begins to dry out, it can allow oxygen to enter the bottle, filling the ullage space and possibly causing the wine to spoil or oxidise.
Excessive humidity can also pose the risk of damaging wine labels, which may hinder identification or hurt potential resale value. Some wine experts opine that 75 per cent humidity is ideal for storage. However, there is very little significant research to definitively establish an optimal range.

Concern about humidity is one of the primary reasons why wine experts recommend that wine should not be kept in a refrigerator since the refrigeration process often includes dehumidifying, which can quickly dry out corks.

Some wine experts debate the importance of humidity for proper wine storage. Claims have been made that the relative humidity within a bottle be maintained at 100 per cent regardless of the closure used or the orientation of the bottle. However, some experts hold that low humidity can still be detrimental to premium wine quality due to the risk of the cork drying out. As a way of maintaining optimal humidity, it is recommended that half an inch of gravel be spread on the floor of a wine cellar and periodically sprinkle it with some water.

Temperature

Wine is very susceptible to changes in temperature; hence, temperature control is an important consideration in wine storage. If the wine is exposed to too high a temperature (in excess of 77°F (25°C)) for long periods of time, it may become spoilt or "cooked" and develop off flavours that taste raisiny or stewed.

The exact length of time that a wine is at risk of exposure to high temperatures will vary depending on the wine. For example, some wines such as Madeira is exposed to high temperatures during its winemaking. It is therefore able to sustain exposure to high temperatures more easily than other more delicate wines. If the wine is exposed to too cold temperature, the wine can freeze and expand, causing the cork to be pushed out. This will allow more exposure of the wine to oxygen.

Dramatic temperature swings can also cause adverse chemical reactions in the wine that may lead to a variety of wine faults. Most experts recommend that wine be kept at constant temperatures between 50° and 59°F (10° and 15°C) with 52°F (11°C) being the most ideal temperature for storage and aging.

In general, a wine has a greater potential to develop complexity and a more aromatic bouquet if it is allowed to age slowly in a relatively cool environment. The lower the temperature, the more slowly a wine develops. On the average, the rate of chemical reactions in wine doubles with each 18°F (8°C) increase in temperature. An expert even believes that wine can be exposed to temperatures as high as 120°F (49°C) for a few hours and not be damaged.

Vibration

Although anecdotal information regarding the contributions of vibration in wine storage states that it contributes to the accelerated aging of wine with adverse effects, this remains a research area with relatively little data. In a particular study, vibrations of different frequencies have been shown to have their own distinct effect on the chemistry of the wine though the authors have not stated whether the effects are detrimental to the quality of the wine or if the effects are caused by other aging factors.

3.2 Bottle Orientation during Storage

Most wine racks are designed to allow a wine to be stored on its side. The thinking behind this orientation is that the cork is more likely to stay moist and not dry out if it is kept in constant contact with the wine. Some wineries package their wines upside down in the box for much the same reason.

Research in the late 1990s suggested that the ideal orientation for wine bottles is at a slight angle, rather than completely horizontal. This allows the cork to maintain partial contact with the wine to stay damp but also keeps the air bubble formed by a wine's ullage at the top rather than in the middle of the bottle if the wine is lying on its side. Keeping the ullage near the top, it has been argued, allows for a slower and more

gradual oxidation and maturation process. This is because the pressure of the air bubble that is the ullage space rises and falls depending on temperature fluctuation.

When exposed to higher temperatures, the bubble's pressure increases (becomes positive relative to the air outside of the bottle, and if the wine is tilted at an angle, this compressed gas will diffuse through the cork and not harm the wine. When the temperature falls, the process reverses. If the wine is completely on its side, then, this action will eject some wine through the cork. Through this "breathing" which can result from variations in temperature, oxygen may be repeatedly introduced into the bottle and as a result can react with the wine. An appropriate and constant temperature is therefore preferred. Additionally, oxidation will occur more rapidly at higher temperatures and gases dissolve into liquids faster, the lower the temperature.

While most wines can benefit from lying on their side, Champagne and other sparkling wines tend to age better if they are kept upright. This is because the internal pressure caused by the trapped carbonic gas provides enough humidity and protection from oxygen. A study found that Champagne stored on its side aged more quickly because oxygen was allowed to seep in after the Champagne corks lost their elasticity due to contact with the moist wine.

SELF-ASSESSMENT EXERCISE

i. List the factors that affect wine in storage.
ii. Mention the types of wine storage.

3.3 Length of Storage

Wine can be stored for short term or long term.

Short-term storage

Short-term storageis for wine that can be consumed within six months, or bottles that are just from the store and intended to be consumed shortly or bottles that have been pulled from longer storage to be available for spur of the moment consumption.

The closest you can duplicate the conditions necessary for long-term storage, the better. However, small wine racks kept in your kitchen, dining room, pantry or where ever are a satisfactory solution in the short term.

Keep the bottles stored so that:

- store the bottle is on its side so the cork stays moist
- store the wines are at the lowest stable temperature possible
- ensure that the location is free of vibration
- ensure that the location is not a storage area for other items with strong odor

Refrain from placing your rack on top of the refrigerator, close to the light and vibrates from the refrigerator compressor.

Long-term storage

Long-term storageis for wine that one will keep for more than six months before consumption. If one plans to collect fine wines with benefit from bottle maturity (over six months), proper storage is critical. Before choosing a space, be sure it is big enough to house future purchases. In some cases, empty space beneath a stairway is sufficient, or one may find it necessary to allow room for hundreds of wines stored as both individually racked bottles and full cases.

One will need something that is temperature-controlled, humidity, protects from vibration and UV rays. Dark, cool, stable environments work best for wine.

Storing opened wine bottles

Keeping the wine as the winemaker intended overnight is no easy feat, given how rapidly a wine can degrade when exposed to oxygen. The biggest challenge with storing opened wine is the acetic bacteria often present and active in open bottles. Wine does not oxidise in the chemical way, but generally rather more rapidly as the bacteria feed, turning your wine to vinegar.

A typical wine left overnight without any special handling will not be drinkable due to oxidation. On the other hand, a wine that was not fully opened before may well be better in a night to continue evolving. There are four complementary solutions all of which minimise the effect of oxidation on the wine.

- Vacuum corking: Vacuum corking works for the short term, longer if the wine started a little closed in the first place. The problem with this is that while some wines seem to benefit this way, others turn flat and dull.

- Gassing: Laying down a gas blanket works better, but a wine will still react a little with the "neutral" gas or continue interacting with the air mixed in earlier.
- Storage in a smaller bottle: A small bottle, of course, reduces the amount of oxygen in the bottle, but pouring into the smaller bottle is tedious and exposes the wine to more air.
- Refrigeration: Refrigeration is controversial. Some feel that refrigeration "kills" a wine, even white wine. However, when storing opened red wine, it needs to be allowed to warm up before drinking. Place it into the fridge soon after opening.

3.4 Places to Store Wine

Since the end of the 20th century, there has been growth in industries relating to wine storage. Some wine connoisseurs may prefer to store their wine at home in a dedicated room or closet. Other options involve purchases and rentals at off-site wine storage facilities that are specifically designed for the task. Wine can be stored in the following places:

3.4.1 Wine Cellar

A wine cellar is a storage room for wine in bottles or barrels, or more rarely in carboys, amphorae or plastic containers. In an active wine cellar, important factors such as temperature and humidity are maintained by a climate control system. In contrast, passive wine cellars are not climate-controlled, and are usually built underground to reduce temperature swings. An aboveground wine cellar is often called a wine room, while a small wine cellar (less than 500 bottles) is sometimes termed a wine closet.

Active versus passive

Wine cellars can be either active or passively cooled. Active wine cellars are highly insulated and need to be properly constructed. They require specialized wine cellar conditioning and cooling systems to maintain the desired temperature and humidity. In a very dry climate, it may be necessary to actively humidify the air, but in most areas, this is not necessary.

Passive wine cellars must be located in naturally cool and damp areas with minor seasonal and diurnal temperature variations—for example, a basement in a temperate climate. Passive cellars may be less predictable, but cost nothing to operate and are not affected by power outages

Purpose Wine cellars protect alcoholic beverages from potentially harmful external influences, providing darkness and a constant temperature. Wine is a natural, perishable food product. Left exposed to heat, light, vibration or fluctuations in temperature and humidity, all types of wine can spoil. When properly stored, wines not only maintain their quality but many actually improve in aroma, flavour, and complexity as they mature.

3.4.2 Wine Caves

These are subterranean structures for the storage and aging of wine. They are an integral component of the wine industry worldwide. The design and construction of wine caves represents a unique application of underground construction techniques.

The storage of wine underground offers the benefits of energy efficiency and optimum use of limited land area. Wine caves naturally provide both high humidity and cool temperatures; key to the storage and aging of wine.

3.4.3 Wine Accessory

A wine accessory is generally any equipment that may be used in the storing or serving of wine. Wine accessories include many items such as wine glasses, corkscrews, and wine racks.

Wine racks

These are storage devices that hold wine bottles in an orientation facilitating long-term wine aging. Most wine racks are designed for a bottle to be stored on its side, with a slight slant downward towards the bottle's neck. This ensures that wine is always in contact with the cork, preventing the cork from drying out and the subsequent ingress of oxygen, which would ultimately spoil the wine. Wine racks can be made of many materials such as wood, steel, and stone, holding just several bottles to thousands. These racks also serve as decorative pieces in many homes.

SELF-ASSESSMENT EXERCISE

i. Name the places wine can be stored.
ii. What are wine accessories?

4.0 CONCLUSION

No matter how good a wine, or how great it is, maturing potential, if stored incorrectly, will never realise its full potential.

5.0 SUMMARY

Our discussion in this unit centres on ideal wine storage conditions. You have learnt that a relative humidity of around 70 per cent is generally thought to keep corks damp and labels clear of mould. Wines should be stored free from light and vibrations.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the factors that affect wine in storage.
2. Explain why bottle orientation is important in storage.
3. Describe the places wine can be stored.

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UNIT 4 SPIRITS

CONTENTS

1.0 INTRODUCTION

In the previous unit, we discussed the storage of wines. In this unit, we shall be discussing spirits. Alcohol has been used medicinally throughout human history. Its medicinal properties are mentioned 191 times in the Old and New Testaments of the Bible. As early as the turn of the century, there was evidence that moderate consumption of alcohol was associated with a decrease in the risk of heart attack. The evidence of health benefits of moderate consumption has continued to grow over time.

2.0 OBJECTIVES

At the end of the unit, you should be able to:

- state the types of spirits
- explain how spirits are produced
- discuss the regulation of spirits
- enumerate the tips for staying healthy with alcohol.

3.0 MAIN CONTENT

3.1 Definition and Types of Spirit

Spirits are unsweetened, distilled alcoholic beverages intended for human consumption. An alcoholic beverage is a drink containing ethanol, commonly known as alcohol. Spirit drinks possess particular organoleptic qualities and have a minimum alcoholic strength of 15 per centalcohol by volume (ABV). They are produced by the distillation of a fermented base product. Distilling concentrates the alcohol and

eliminates some of the congeners. Spirits can be added to wines to create fortified wines, such as port and sherry.

Types of spirits

All spirits are grouped into two broad categories:

- clear spirits
- dark spirits.

All distillates come off the still as clear liquids. The taste, smell, and appearance of the final product depend on how the distiller processes the liquid.

The clear spirits

Clear spirits are the ones that can be seen through. They appear clear. Depending on the foods from which they were distilled, some have a specific flavour. Examples include:

- **Gin** comes in two basic styles. There is the original Dutch *jenevre* (juniper, or *genievre* in French), a distillate of malt spirits that include juniper berries. London dry gin is a clear spirit that is redistilled with juniper berries and further flavoured with aromatic botanicals (plant products).
- **Rum** is distilled from molasses or sugar cane. All rums start out as clear spirits; some are aged in barrels. Aging turns the rum golden, amber, or very dark.
- **Sake** is a clear spirit distilled from rice wine.
- **Tequila** is distilled from the fruit of the blue agave plant. Like rum, all tequilas start out clear, but some turn golden or amber with aging.
- **Vodka** is a true neutral spirit, crystal clear, with no discernible flavour or aroma. Modern vodka producers, however, may flavour their vodkas, changing the taste and sometimes the colour to match the colour of the fruit juice or synthetic flavouring.

The dark spirits

With the exception of brandy, which is distilled from wine, dark spirits are beverages distilled from grains. Like clear spirits, the dark spirits start out clear, but aging in barrels and the addition of colouring agents such as caramel (burnt sugar) to maintain colour consistency from year to year turns them characteristically golden amber. Examples are:

- **Brandy** is a spirit distilled from wine or a mash (fermented mass) of any fruit, most commonly grapes.
- **Whiskey** is a spirit distilled from grain, such as barley, corn, rye, or wheat. A straight whiskey is made from the distillate produced by one operation of a still and added neutral spirits. A blended whiskey contains several straight whiskeys and added neutral spirits.
- **Bourbon** and **Tennessee whisky** are distilled spirits made only in the United States; by law, they must be made of 51 per cent corn.
- **Canadian whisky** is a distilled spirit made in Canada, generally from a mix of grains, primarily corn, plus rye, wheat, and barley.
- **Irish whisky** is a distilled spirit made in Ireland from a mix of grains dominated by barley.
- **Scotch whisky** is a distilled spirit made in Scotland from a mix of grains, primarily barley, plus "small grains"— so-called because they are used in limited amounts. The small grains usually include oats.

SELF-ASSESSMENT EXERCISE

i. What are spirits?
ii. List the types of spirits.

3.2 Production of Spirits

All spirits are produced by distillation. In the processing of alcoholic beverages, the distillation is not used as a true purification method but more to transfer all volatiles from the source materials to the distillate. The history of distillation dates back to 2,000 years when it was used in China to make perfumes, and by the Arabs to make spirit-based drinks.

The principle of distillation is that ethyl alcohol vapourises at a lower temperature (78 per cent) than water (100 per cent). Thus, when a liquid containing alcohol is heated in an enclosed environment, the alcohol will form steam first and can be taken off, leaving water and other ingredients behind. This process raises the alcoholic content of the resulting liquid.

There are two main methods of producing spirits:

- pot still method
- patent still method.

The pot still method is used for full, heavy flavoured spirits such as brandy, while the patent still method is used in producing the lighter spirits such as vodka.

Bases for spirits

The spirit drinks are produced from various bases. In each case, the base is a fermented liquid (alcoholic wash). The table below shows some of the bases and the spirits produced from them.

Spirit	**Base**
Whisky, gin and vodka	Barley, maize or rye (i.e. beer)
Brandy	Wine
Calvados	Cider
Rum	Molasses
Tequila	Pulque

SELF-ASSESSMENT EXERCISE

i. What is a base?
ii. Name the two methods used in spirits production.

3.3 Regulation of Spirits

The regulation of spirits is under the authority of National Agency for Food and Drug Administration (NAFDAC). It comes under the following headings.

Prohibition:

1. (1) No person shall manufacture, import, export, advertise, sell or distribute spirit drink specified in schedule I to these Regulations in Nigeria unless it has been registered in accordance with the provision of these regulations.

(2) No person shall sell any spirit drink unless the main panel of the label carries a
Declaration of the actual percentage by volume of absolute alcohol contained therein.

2. Use and limit

The use and limits of food additives or food colours in the manufacture of spirit shall be as prescribed by the Agency.

3. Restrictions on sale of alcoholic Spirit

No alcoholic spirit with an alcoholic content below 37.0 per cent shall be sold except the label shall bears a declaration of the alcoholic content together with a statement that the product is "under strength."

4. Packaging/labelling

In addition to compliance with the Pre-packaged Food (labelling) Regulations 2004, the following shall apply:

(a) The name of every spirit drink shall indicate the accurate nature.
(b) Where a name has been established for the spirit drink in these Regulations, such a name shall only be used.
(c) Where no common name exists for the spirit drink an appropriate descriptive name shall be used.
(d) A coined or fanciful name may be used, provided, the name is not misleading and is accompanied by an appropriate descriptive term.

5. Advertisement of spirit

In addition to compliance with the Food Products (advertisement) Regulations 2004, the following shall apply:

(a) The content of advertisements of spirit drink shall not be misleading and shall be free of health claims;
(b) Radio, television or print media, advertisements of spirit drink shall not be permitted in children's programmes nor shall children, sportsmen or expectant mothers be used as models;
(c) Gift items promoting spirit drinks shall not be directed at children and sportsmen.

6. Specifications for alcoholic spirit

Alcoholic spirit manufactured, distributed, imported, exported, sold, or advertised in Nigeria shall conform to the specifications provided in Schedule II – V of these regulations.

7. Penalty

(1) Any person who contravenes any of the provisions of these regulations shall be guilty of an offence and liable on conviction in case of:

(a) an individual, to imprisonment for a term not exceeding one year or to a fine of N50,000 or to both imprisonment and fine;
(b) body corporate, to a fine not exceeding N100,000.

(2) Where an offence under these regulations is committed by a body corporate, firm or other association of individuals:
(a) every director, manager, secretary or other similar officer of the body corporate; or
(b) every partner or officer of the firm; or
(c) every trustee of the body concerned; or
(d) every person concerned in the management of the affairs of the association; or
(e) every person who was purporting to act in a capacity referred to in paragraphs (a) to (e) of this regulation is severally guilty of that offence and liable to be proceeded against and punished for that offence in the same manner as if he had himself committed the offence, unless he proves that the act or omission constituting the offence took place without their knowledge, consent or connivance.

8. Forfeiture

In addition to the penalty specified in Regulation 7 of these regulations, a person convicted of an offence under these regulations shall forfeit to NAFDAC the spirit drinks and whatsoever is used in connection with the commission of the offence.

SELF-ASSESSMENT EXERCISE

i. What authority regulates sale and consumption of spirits in the country?
ii. Mention the headings under which spirits regulation falls.

3.4 Spirits and Health

The health benefits of moderate alcohol consumption have long been known. One of the earliest scientific studies on the subject was published in the *Journal of the American Medical Association* in

1904.Moderate drinking can be healthy—but not for everyone. One must weigh the benefits and risks.

Alcohol's link with health is two-faced; the face it shows depends largely on who is drinking and how much is being consumed. For most moderate drinkers, alcohol has overall health benefits. While moderate drinking can increase the risk of colon and breast cancer, these risks are trumped by the boost in cardiovascular health—especially in middle age, when heart disease begins to account for an increasingly large share of disease and deaths.

Non-drinkers, however, should not feel the need to start drinking to improve their health. Heavy drinkers, with their increased risk of cancer, heart disease, high blood pressure, cirrhosis, and dependence should cut back or stop drinking altogether. A pregnant woman should also avoid alcohol, since it can cause brain damage to the unborn child.

Another opinion believes that moderate drinkers tend to have better health and live longer than those who are either abstainers or heavy drinkers. In addition to having fewer heart attacks and strokes, moderate consumers of alcoholic beverages (beer, wine and distilled spirits or liquor) are generally less likely to suffer strokes, diabetes, arthritis, enlarged prostate, dementia (including Alzheimer's disease), and several major cancers.

A drink per day is considered moderate drinking for women while for men; it is up to two drinks per day. A general guideline is 12 ounces of beer, five ounces of wine, or 1½ ounces of hard liquor, such as vodka or whiskey.

Alcohol Vs. lifestyle

In alcohol consumption, one may ask, "Why drink to reduce the risk of heart disease? Would eating a balanced diet, exercising, and losing weight not do the same thing? No, it would not. The moderate consumption of alcohol appears to be more effective than most other lifestyle that are used to lower the risk of heart and other diseases. For example, the average person would need to follow a very strict low-fat diet, exercise vigorously on a regular basis, eliminate salt from the diet, lose a substantial amount of weight, and probably begin medication to lower cholesterol by 30 points or blood pressure by 20 points.

However, medical research suggests that alcohol can have a greater impact on heart disease than even these hard-won reductions in cholesterol levels or blood pressure. Only cessation of smoking is more effective. Additionally, other medical research suggests that adding

alcohol to a healthful diet is more effective than just following the diet alone.

Longevity

Various studies have been done on the issue of alcohol and health as it relates to longevity. The items below are some of the findings. The emphasis has always been on moderate consumption. Moderate drinkers tend to live longer than those who either abstain or drink heavily.

- The National Institute on Alcohol Abuse and Alcoholism has found that the lowest death rate from all causes occurs at the level of one to two drinks each day.
- Drinking alcohol in moderation (one to two drinks per day for women and two to four for men) was found to reduce risk of mortality significantly according to meta-analysis of 34 studies of alcohol and total mortality among 1,015,835 men and women around the world.
- An exhaustive review of all major heart disease studies found that "alcohol consumption is related to total mortality in a U-shaped manner, where moderate consumers have a reduced total mortality compared with total non-consumers and heavy consumers.
- A Harvard study found the risk of death from all causes to be 21per cent to 28 per cent lower among men who drank alcohol moderately, compared with abstainers.
- A large-scale study in China found that middle-aged men who drank moderately had a nearly 20 per cent lower overall mortality compared with abstainers.
- Harvard Nurses' Health Study of over 85,000 women found reduced mortality among moderate drinkers.
- A British analysis of 12,000 male physicians found that moderate drinkers had the lowest risk of death from all causes during the 13-year study.
- A large study of about 88,000 people conducted over a period of 10years found that moderate drinkers were about 27 per cent less likely to die during the period than were either abstainers or heavy drinkers. The superior longevity was largely due to a reduction of such diseases as coronary heart disease, cancer, and respiratory diseases.
- A twelve-year long prospective study of over 200,000 men found that subjects who had consumed alcohol in moderation were less likely to die during that period than those who abstained from alcohol.
- A study of more than 40,000 people by the Cancer Research Centre in Honolulu found that "persons with moderate alcohol

intake appear to have a significantly lower risk of dying than non-drinkers."

- An analysis of the 89,299 men in the Physicians' Health Study over a period of five and one-half years found that those who drink alcohol in moderation tend to live longer than those who either abstain or drink heavily.
- An Italian study of 1,536 men aged 45-65 found that about two years of life were gained by moderate drinkers (one to four drinks per day) in comparison with occasional and heavy drinkers.
- A study of 2,487 adults aged 70-79 years, who were followed for an average period of over five and one-half years, found that all-cause mortality was significantly lower in light to moderate drinkers than in abstainers or occasional drinkers (those who drank less than one drink per week).
- A large prospective study found that older men consuming up to about three drinks per day and older women consuming over one drink per day had a dramatically lower risk of dying than did non-drinkers.
- A large study found that moderate drinkers, even after controlling for or adjusting for numerous factors, maintain their high longevity or life survival advantage over alcohol abstainers.
- A Danish study of about 12,000 men and women over a period of 20 years found that abstaining from moderate alcohol consumption is a health and longevity risk factor. Choosing not to drink alcohol increases the risk of illness, disease and death.
- A 14-year study of nearly 3,000 residents of an Australian community found that abstainers were twice as likely to enter a nursing home as people who were moderate drinkers. Drinkers also spent less time in hospitals and were less likely to die during the period of the study.
- A prospective study of middle-aged Chinese men found that the consumption of two drinks per day was associated with a 19 per cent reduction in mortality risk. This protective effect was not restricted to a specific type of alcoholic drink.
- Alcohol prevents more deaths than its abuse causes in the United Kingdom, according to research from the London School of Hygiene and Tropical Medicine.
- Scientists at the University of London concluded that light and moderate drinking saves more lives in England and Wales than are lost through the abuse of alcohol. If everyone abstained from alcohol, death rates would be significantly higher.
- The Cancer Council of New South Wales concludes, "If the net effect of total alcohol consumption on Australian society is considered, there is a net saving of lives due to the protective effect of low levels of consumption on cardiovascular disease."

Tips for staying healthy with alcohol

1. If you do not drink, there is no need to start

For some people—especially pregnant women, people recovering from alcohol addiction, people with a family history of alcoholism, people with liver disease, and people taking one or more medications that interact with alcohol—the risks of drinking outweigh the benefits. There are other ways to boost one's heart health and lower risk of diabetes such as:

- getting more active
- staying at a healthy weight
- eating healthy fats and whole grains.

2. If you do drink, drink in moderation; and choose whatever drink you like

Wine, beer, or spirits, all seem to have the same health benefits as long as moderation is the word. Not more than one bottle a day for women and not more than two bottles per day for men.

3. Take a multivitamin with folic acid

Folic acid is the synthetic form of folate, a VitaminB that may help lower the risk of heart disease and cancers of the colon and breast. Those who drink may benefit the most from getting extra folate, since alcohol moderately depletes our body's stores. The amount in a standard multivitamin -400 micrograms- is enough, when combined with a healthy diet.

4. Ask your doctor about your drinking habits

If you or your friends think you may have a problem with drinking, talk to a doctor or other health professional about it. He or she can help.

5. Pick a designated driver

Alcohol and driving do not mix. If you have been out drinking cocktails and it's time to head home, hand your car keys to someone who has been sipping seltzer all night.

SELF-ASSESSMENT EXERCISE

List the tips for staying healthy with alcohol.

4.0 CONCLUSION

Spirits are alcoholic beverages whose sale and use are regulated. They are of various types and are known to have positive health effects when used in moderation. Excessive use of spirits can have damaging effects to health.

5.0 SUMMARY

In this unit, you have learnt that spirits are distilled alcoholic beverages having a minimum alcoholic strength of 15 per cent ABV. You also learnt that spirits are classified as clear or dark spirits. The sale and consumption of spirits is regulated and controlled by NAFDAC. Moderate consumption of alcohol attracts health benefits.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the two major classes of spirits.
2. Elaborate on the health effects of consumption of spirits.

7.0 REFERENCES/FURTHER READING

Blue, A. D. (2004). *The Complete Book of Spirits: A Guide to Their History, Production, and Enjoyment*. New York: Harper Collins Publishers.

Lillicrap, D. & Cousins, J.(2006). *Food and Beverage Service*. (7th ed.). Hodder Arnold.

UNIT 5 LIQUEURS

CONTENTS

1.0 INTRODUCTION

In the previous unit, we discussed spirit; in this unit, we shall be discussing liqueurs. Liqueurs are alcoholic beverages. They are historical descendants of herbal medicines; they were made in Italy as early as the 13th century and were often prepared by monks (e.g., Chartreuse and Bénédictine). Nowadays, liqueurs are made worldwide and are served in many ways. Liqueurs are typically quite sweet; they are usually not aged for long but may have resting periods during their production to allow flavours to marry.

2.0 OBJECTIVES

At the end of the unit, you should be able to:

- define liqueurs
- enumerate the types of liqueurs
- discuss liqueur production methods
- explain the shelf-life of liqueurs.

3.0 MAIN CONTENT

3.1 Definition and Types of Liqueur

A liqueur is a sweet alcoholic beverage, often flavoured with fruits, herbs, spices, flowers, seeds, roots, plants, barks, and sometimes cream. The word “liqueur” comes from the Latin word *liquifacere*, which means, “to dissolve.” This refers to the dissolving of the flavouring used to make the liqueur.

Liqueurs are not usually aged for long periods, but may have resting periods during their production to allow flavours to marry. Liqueurs are also referred to as cordials.

Liqueurs have sugar contents starting at 2.5 per cent, with the sweetest going far beyond that. Their alcohol content can range from a low 15 per cent (30 proof) to 55 per cent (110 proof). Liqueurs are just as important as the base liquors in the bar, some more than others. These spirits begin with base liquor, which could be anything from a neutral grain alcohol to a brandy, rum or whiskey. To this sugar is added along with a mix of herbs, fruits or spices depending on the desired result. One will often see liqueurs with a main ingredient, such as curacao (orange) or herbsaint (anise), while other liqueurs are more of a blend of flavour, like Campari, Drambuie and Tuaca. Grand Marnier is a delicious example of an orange liqueur, which makes a flavourful ingredient in many recipes.

Cream liqueurs have cream added, while crème liqueurs are much sweeter, likened to potent syrup. Our ancestors referred to liqueurs as *cordials*, and they were often used medicinally.

Types of liqueur

There are many categories of liqueurs as listed below.

Cream liqueur

Cream liqueurs are flavoured mixtures that have been homogenised with cream. They have a rich mixture that is velvety smooth and creamy, and they require no refrigeration. Examples are:

Advocaat (made from a rich blend of egg yolks)
Amarula (sugar, cream, and the fruit of the African marula tree)
Baileys Irish Cream
Baja Rosa
Carolans
Creme de la Creme Maple Cream Liqueur
Cruzan Rum Crea

Coffee liqueur

Café Aztec
Café Britt Coffee Liqueur
Café Oriental
Café Marakesh
CaffèBorghetti
Coloma

Chocolate liqueur
Schnapps liqueur
Brandy liqueur
Anise liqueur
Nut-flavoured liqueur
Herbal liqueur.

Berry liqueur
Chambord (raspberry)
Creme de cassis (blackcurrant)

Crème liqueurs
Are drinks distinguished by being sweet and syrupy.Examplesinclude:
Crème de banane
Crème de cacao
Crème de cassis
Crème de Cerise
Crema di Fragole
Crème de menthe

Flower liqueurs
Bulgarian rose liqueur—from the Valley of the Roses
Crème de Rose (rose)
Crème de violette (violet)
Crème Yvette (violet, vanilla)
Fior d'Alpi (alpine flowers, herbs)
Lavender Liqueur (lavender)

Fruit liqueurs
Amabilli (banana)
AmarulaAfrican liqueur (marula fruit)
Aurum (rum, tea, and tangerines)
Bajtra—Maltese liqueur (prickly pear)
Cherry Heering (cherry)
CosaGialla (citrus fruits)
Cointreau (orange)

Other herbal liqueurs
Agwa de Bolivia (37 Herbs)
Altvater
Amaro
Angelika Bitter (11 herbs, especially Angelica archangelica)
Appenzeller (42 herbs)
Becherovka (anise seeds, cinnamon, and other herbs)
Beirão (seeds and herbs from around the world)
Bénédictine (27 plants and spices)

Honey liqueurs
Bärenjäger
Brandymel
Drambuie
Ron Miel
Tennessee Honey—Jack Daniel's

Nut-flavoured liqueurs
Amaretto (almonds, or the almond-like kernels from apricots, peaches, cherries, or similar stone fruits)
Bellota (acorns)
Dumante (pistachio)
Dwersteg's Organic Amaretto liqueur(organic liqueur with distillate from almond kernels)
Frangelico (hazelnuts and herbs)
Kahana Royale (macadamia nut)
Nocello (walnut and hazelnut)

Whisky liqueurs
Atholl Brose (Scotch whisky, Benromach single malt spirit, honey, secret spice recipe, from Gordon andMacphail)
Bruadar (Scotch whisky, honey, sloe)
Cock o' the North (single malt, blaeberry)
Drambuie (Scotch, heather honey, herbs, and spices)
Eblana (Irish whisky, coffee, honey, almond, peanut)
Famous Grouse liqueur (Scotch, bourbon, citrus, spices)

Other liqueurs
Advocaat (egg yolks and vanilla)
After Shock (several varieties, the most popular of which is cinnamon)
Agnes (orange peels, apples, vanilla and caraway seeds)
Aurum (rum, tea, and tangerines)
Baczewski
Bärenfang (honey),one export version is named Bärenjäger
Bloody Oath (vodka, herbs and spices)
The above listed are examples of variety of brands available in the various categories. The recipes of some of these liqueurs, like Averna, Benedictine, Chartreuse and Frangelico, date back to centuries and are as popular as ever. The distinction between liqueurs and spirits is not simple because many spirits are available today in a flavoured form (e.g., flavoured vodka). The most reliable guide to classification is that liqueurs contain added sugar, but spirits do not.

Liqueurs can also be classified as:

Proprietary liqueurs

These are made exclusively by specific liqueur houses with secret formulas, some of which have been closely guarded for centuries.eg bénédictine, galliano and southern comfort.

Generic liqueurs

Generic liqueurs are made by various producers using fairly standard recipes. Quality brands are typically flavoured with the finest ingredients, essential oils and extracts; less expensive examples often use artificial flavourings e.g. amaretto and crème de cacao

SELF-ASSESSMENT EXERCISE

i. What is liqueur?
ii. List the categories of liqueurs.

3.2 Production of Lliqueur

Liqueurs are made by two basic methods:

- heat or infusion method
- coldor maceration method.

Heat or infusion method is used when herbs, peels roots etc. are being used, as heat can extract their oils, flavours and aromas. Cold or maceration method is best suited when soft fruits are used to provide the flavours and aromas. The flavouring of liqueur may be in four ways:

Distillation: Alcohol and flavouring agents are blended before being distilled.

Infusion: Flavourings are steeped in hot water, which is then mixed with the alcohol base.

Maceration: Flavouring agents are steeped directly in the alcohol base.

Percolation: alcohol is dripped through the flavouring agents to extract their essences.

Flavouring ingredients used for liqueur production include:

Aniseed	coriander
Apricots	kernels of almond
Blackcurrants	nutmeg
Caraway seeds	rind of citrus fruit
Cherries	rose petals
Cinnamon	wormwood

The general principle of liqueur making is to take an alcohol base (sometimes called “neutral spirits”) and steep a flavouring in it for a time. Next, filter out any remaining solids, add sweetening, and age. Finally, bottle and serve.

3.3 Shelf Life of Liqueurs

Liqueurs and cordials

The shelf lives of liqueurs are more temperamental than the base spirits because they contain sugar and other ingredients, which can spoil, some more than others. Most opened (and well-sealed) liqueurs should last for months and even years depending on their alcohol content and preservatives. Again, opened bottles are likely to lose some of their characteristics due to exposure to air. Once you begin to see any sugar crystallising on the bottom, discolouration, curdling or other changes you will want to throw that bottle away or at least give it a taste test before mixing with it.

Cream liqueurs, those that contain dairy, cream or egg, are a different story and should be discarded after 18 months or so. Liqueurs like Bailey's Irish Cream, Advocaat and Amarula should be consumed within a year of opening, although some of their cheaper creamy cousins will deteriorate faster. Even in unopened bottles, these liqueurs will spoil and be undrinkable after a year and a half or more. Some of these touchier liqueurs will include an expiration date on the bottle as well. It is unnecessary to refrigerate cream liqueurs, but it cannot hurt it

SELF-ASSESSMENT EXERCISE

i. Mention two basic methods of liqueur production.
ii. List the ways liqueurs are flavoured.

4.0 CONCLUSION

Liqueurs were originally used (and some still are) as a digestive. They are now usually served after dinner; they also play an important role in

many cocktails. Liqueurs can also be used in cooking, particularly for desserts.

Aging plays a vital role in the production of liqueurs. What goes into the bottle will be harsh and undefined because the various extracts will not have had time to mingle, and some of the delicate aromatics that make the finished liqueur such a pleasure will not be completely developed. Liqueurs are alcoholic beverages, hence health effects and benefits of other alcoholic beverages applies to them.

5.0 SUMMARY

In this unit, you have learnt that:

- liqueurs have sugar content ranging from 2.5 per cent, and an alcoholic content between 15 and 55 per cent.
- liqueurs are made from alcoholic base which could be brandy, whiskey, rum or any other alcoholic wash.
- there are different categories of liqueur and they are produced by two main methods- heat or infusion method and cold or maceration method.
- Different nuts, seeds fruits and other plant parts are used as flavouring agents in the production of liqueurs.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the types of liqueur.
2. List and explain the categories of liqueur with examples.

7.0 REFERENCES/FURTHER READING

Lichine, A. (1987). *Alexis Lichine's New Encyclopedia of Wines & Spirits.* (5th ed.). New York.

Lillicrap, D. & Cousins, J. (2006). *Food and Beverage Service.* (7th ed.). Hodder Arnold.