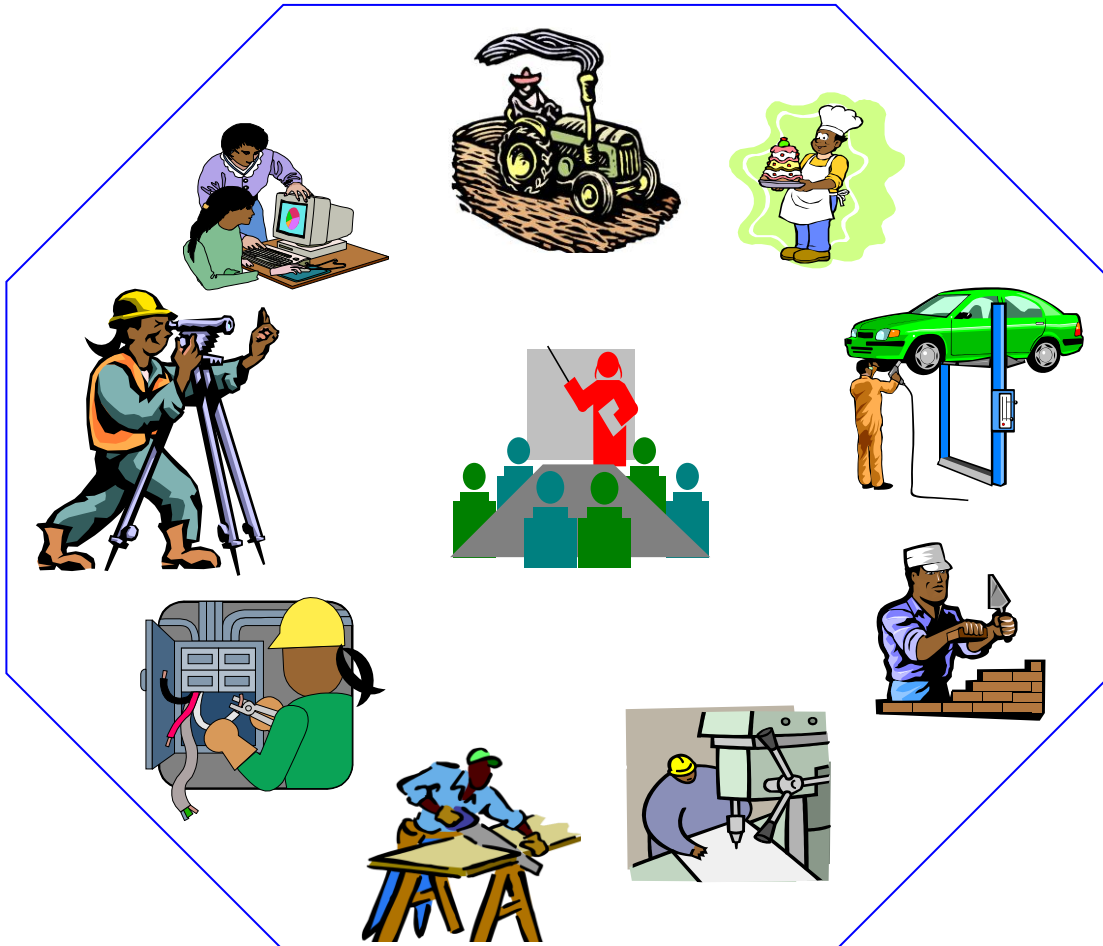


# FOOD AND BEVERAGE SERVICES –LEVEL- I

Based on Mar, 2019 Version 3 Occupational standards (OS)



**Module Title: Preparing and Serving Hot Beverages**

**LG Code: CST FBS1 M05 0121 LO (1-7) LG (23-29)**

**TTLM Code: CST FBS1 TTLM 02 21 v1**

February, 2021  
Adama, Ethiopia



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<b>L #23</b>	<b>LO #1- Organize and prepare work areas</b>
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<b>Instruction sheet</b>
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Organizing coffee workstation
- Developing preparation and work routines.
- Completing ***mise en place*** and preparation
- Storing coffee and commodities in appropriate airtight containers

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Organize coffee workstation
- Develop preparation and work routines.
- Complete preparation of ***mise en place***
- Store coffee and commodities in appropriate airtight containers

<b>Learning Instructions:</b>
-------------------------------

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets” .



## Information Sheet 1- Organizing coffee workstation

### 1.1 Organizing coffee workstation

In all you do as a barista, follow workplace hygiene procedures and food safety regulations and, safe work practices when including safely using equipment, and your posture at the works. Organize the coffee workstation to enable efficient workflow and easy access to equipment and commodities. Follow workplace safety and hygiene practices as you go. Follow your organization's requirements to develop preparation and work routines.

Equipment may include:

- types and brands of coffee grinders or mills and coffee machines
- service ware, including cups, saucers, mugs and glasses of various sizes
- flatware
- weighing equipment
- measuring equipment
- tampers
- blind or blank filter and espresso cleaning detergent
- thermometer
- storage bins in appropriate sizes and materials
- bins for discarded puck

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<b>Self-Check -1</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. \_\_\_\_\_ Workplace hygiene procedures and food safety regulations? (3pts)
2. Explain Equipment may include? (3pts)

**Note:** Satisfactory rating - 6 points

Unsatisfactory - below 6 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

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## **Information Sheet -2 Developing preparation and work routines according to enterprise requirements.**

### **Serves according to enterprise requirements: This may include:-**

- policies and procedures related to persons authorized and trained to carry out particular activities related to machine operation, adjustment, cleaning and maintenance
- circumstances requiring the services of an authorized and trained technician
- specific requirements for routine and non-routine cleaning and maintenance
- requirements for checking and replacing parts and equipment
- specific requirements for decoration of coffee prior to presentation, such as stencils, logos, sprinkled toppings and coffee art
- policies and procedures for stock control, ordering and rotation

### **All advertised items have been provided as indicated:**

- On the menus/drink lists
- By house recipes
- Special requests made by customers have been provided
- Accompaniments have been positioned uniformly and conform to house standards

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- Looking at the finished product to make sure it looks acceptable. Things to check are:
- All products of the same type, look the same – filled to same level; dusted as appropriate, in the same style glass/cup/mug; with the required topping (cream, sprinkles, marshmallows)
- The correct number of drinks have been served to match the order placed
- Milk and cream used has not exceeded its 'Use By' date
- Sufficient cups and saucers are provided for the number of people who are partaking in a pot of tea or coffee
- The in-glass/in-cup product looks as it should look – that is nothing floating in solution which should not be there and no ingredients used which should not have been used
- Specific customer requests have been accommodated in relation to strength, size of cup/glass, additions or reductions
- There are no spills into the saucer or drips running down the side of a cup or mug or glass. If service of drink results in the drinking being spilled into a saucer or napkin placed under a drink then you should replace the saucer and/or napkin: in some cases it may be necessary to re-make the drink.

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<b>Self-Check -2</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. List some of enterprise requirement (3)

**Note:** Satisfactory rating - 3 points

Unsatisfactory - below 3 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Information Sheet 3- Completing mise *en place* and preparation

### 1.3 Completing mise *en place* and preparation

#### Mis-en-place

Mis-en-place, the French term means to “putting in place” is attributed to the preparation of a work place for ultimate smooth service. It is widely used in the food and beverage service department in everyday hotel operations. Before service commences, the staff should ensure that the station is in total readiness to receive guests. A station comprises of a given number of tables which are attended by a given team of waiters. Thus a restaurant may have several stations, each with a team of waiters. In a large restaurant, each station may be headed by a Chef-de-rang.

#### **Mis-en-place involves:**

- Side stations should be stocked with sufficient covers for resetting the restaurant after the first sitting is over.
- Extra linen, crockery, cutlery, glassware and ashtrays should be kept handy so that they are readily available for use.
- Cruet sets should be cleaned and filled on a daily basis.
- Sauce bottles should be filled and the necks and tops of the bottles wiped clean.
- Butter, condiments and accompaniments for service should be kept ready for use when needed.

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- turning on machines to achieve correct pressure and temperature
- setting out cups, mugs, saucers, plates, jugs, glasses and other required service ware
- ensuring adequate supplies of coffee, milk varieties and sugars, including specialized sugars and substitutes
- assembling flavorings and toppings
- laying out flatware, serviettes and wipes

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Self-Check -3	Written Test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

**Test I Short Answer Questions**

1. Define Mis-en-place? (3 pts.)

**Note:** Satisfactory rating - 3 points

Unsatisfactory - below 3 points

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Test I**

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## Information Sheet 4- Store coffee and commodities in appropriate airtight containers

### 1.4 Store coffee and commodities in appropriate airtight containers

#### Brief history of Coffee

Coffee is probably the most popular drink in the world.

We don't know for sure how coffee was discovered. Here are two possible stories.



An Ethiopian boy called Kaldi discovered coffee by chance. He noticed that his goats became lively after eating some red berries from a tree. He tried the berries himself and felt the same. The berries were the fruit of the coffee tree.

A man from Yemen called Gemaleddin was in the port of Aden when some Chinese ships arrived. He saw the Chinese drinking tea and watched carefully as they made it. Tea didn't grow in Yemen so he tried the leaves of other plants. Nothing worked so he went to Ethiopia and brought back the leaves and fruit of the coffee tree. The leaves weren't successful but Gemaleddin noticed a great change in the coffee beans when they were roasted. They changed colour and smelt wonderful. He put the roasted beans in water and coffee as a drink was born!

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**Coffee** is a brewed drink prepared from roasted coffee beans, which are the seeds of berries from the coffee plant.

The two most commonly grown are the highly regarded **Arabica**, and the less sophisticated but stronger and more hardy Robusta. Once ripe, coffee berries are picked, processed, and dried. Dried coffee seeds (referred to as beans) are roasted to varying degrees, depending on the desired flavor.

- Coffee is best stored in an airtight container made of ceramic, glass, or non-reactive metal. Higher quality prepackaged coffee usually has a one-way valve which prevents air from entering while allowing the coffee to release gases.
- Coffee freshness and flavor is preserved when it is stored away from moisture, heat, and light. The ability of coffee to absorb strong smells from food means that it should be kept away from such smells.
- Storage of coffee in the refrigerator is not recommended due to the presence of moisture which can cause deterioration.

Exterior walls of buildings which face the sun may heat the interior of a home, and this heat may damage coffee stored near such a wall. Heat from nearby ovens also harms stored coffee.

Green coffee beans (ones which have not been roasted) will keep indefinitely. Once coffee is roasted it begins to lose its aroma. After two weeks it will have lost all aromas if it has not been stored correctly. Roasted coffee beans can be packaged into bags with valves which allow gases to escape from the beans without air getting in. Coffee packed this way will stay fresh for up to six months. Ground coffee loses its flavor even more quickly. It should be ground in small quantities and used as soon as possible. All coffee

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should be kept in a refrigerator and stored in containers that are airtight. Coffee in vacuum packs will stay fresh until opened

Coffee was first discovered in Ethiopia, east Africa.

There are two main types of coffee:

- Arabica &
- Robusta

### **Types of roast:**

Raw beans (Cherries) are subjected to heat known as roasting.

- Light Roasts (7 minutes)
- Medium Roasts (9-11 minutes)
- Medium Dark Roasts (12-13 minutes)
- Dark Roasts (14 minutes)

### **Tasting terms:**

- Aromas / Tastes / Mouth Feel

## **Prepare and serve hot Drinks**

### **General procedure**

- Always serve drinks at the correct temperature, serve tea and coffee freshly-made and in pre-warmed pots. Don't pour iced drinks into a warm glass.
- Serve drinks from the customer's right.
- When serving bottled waters, pour some in each glass at the table, and then place the bottle on the table with the label facing the (host) the person who ordered it.

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## **Steps of Service**

- Prepare ingredients and equipment prior to service.
- Identify the name and style of drink in response to a customer request.
- Select and assemble the correct ingredients.
- Prepare drinks in accordance to methods, standard recipes and customer requests.
- Ensure correct strength, taste, temperature and appearance of drinks.
- Present drinks attractively.

## **Serving Drinks**

- The bar staff need to provide high standards of drinks at the table or for bar service.
- Always pay attention to hygiene when preparing drinks.
- Always clear up as you go along.

## **Equipment for Coffee tray service**

- Tray or salver
- Tray cloth/napkin
- Cup and saucer
- Teaspoon
- Sugar basin and tongs or teaspoon, according to the type of sugar
- Coffee pot
- Jug of milk, cream or hot milk
- Stands for the coffee pot and hot milk jug

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## Coffee beverages

- Espresso , Cappuccino, Latte, Mocha
- Machiatto, Americano, Frappuccino
- Long Black ,Flat White
- Greek Frappe, Vienna Coffee (country)
- Decaf, Iced, Filter, Instant
- Caramel, Cinnamon, Eggnog
- Espresso Romano (lemon)
- Liqueur based

## Service of Coffee at the table

The coffee cover consists of the following:

1. Coffee cups, saucers, coffee spoon, is placed right of the customer.
2. Brown sugar is offered from the customers left.
3. The tea pot and pot of hot water is served from the customer's right.
4. Served cream and warm milk from the customer's right.
5. Place the cafeteria on the table for customers to help themselves.

## Making Coffee

Use the correct coffee for the chosen method, and the correct amount.

Espresso – check temperature and pressure of machine. Discard old grounds and rinse out coffee holder. Re-fill tightly with coffee and ensure it fits tightly in holder Warm cups before filling with coffee.

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**Filter - (with machine)** Check machine is on. Place fresh filter paper in the holder and add the coffee (pre-portioned pack). Place jug of cold water in through the top of the machine and then place empty jug on hot plate under the spout to collect the freshly brewed coffee.

**Plunger - (cafeteria)** place coffee into the bottom of the jug. Pour in hot water and insert the plunger. Allow the coffee to infuse for 4 minutes or so, then push the plunger down and serve.

## **Tea Beverages**

- Black / Green / White / Oolong tea
- 100% Organic & Caffeine Free
- Fruit flavored tea
- Iced tea
- Lemon grass tea
- semi-black
- blended
- scented
- herbal
- floral

## **Service of Tea at the table**

The tea cover consists of the following:

1. Tea cups, saucers, tea spoon, is placed right of the customer.
2. Sugar is offered from the customers left.
3. The tea pot and pot of hot water is served from the customer's right.
4. The milk is served cold from the customer's right.

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## Making the tea

1. Use fresh water.
2. Preheat the pot with hot water.
3. When pot is hot, empty water out and adds tea. (1 bag per person).
4. When the water has boiled pour into the heated pot.
5. Let the tea infuse for 3 to 5 minutes, stir and serve.
6. Serve a jug of hot water in case the customer requires a weaker flavor.

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<b>Self-Check -4</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

**Test I Short Answer Questions**

1. Write types of roasting? (4 pts.)
2. List down Equipment for Coffee tray service?(4pts)

**Note: Satisfactory rating - 8 points**

**Unsatisfactory - below 8 points**

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Test I**

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## Operation Sheet 1– Prepare and serve hot Drinks

- Always serve drinks at the correct temperature, serve tea and coffee freshly-made and in pre-warmed pots. Don't pour iced drinks into a warm glass.
- Serve drinks from the customer's right.
- When serving bottled waters, pour some in each glass at the table, and then place the bottle on the table with the label facing the (host) the person who ordered it.

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LAP TEST	Performance Test
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Name..... ID..... Date.....

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within **30** Minutes. The project is expected from each student to do it.

### Task 1 General procedure for Prepare and serve hot Drinks

**Note:** Satisfactory rating - 8 points

Unsatisfactory - below 8 points

You can ask you teacher for the copy of the correct answers.

#### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

#### Test I

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



<b>L #24</b>	<b>LO #2- Provide customer service and advise customers on espresso coffee</b>
<b>Instruction sheet</b>	
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"> <li>• Providing advice to customers about coffee types</li> <li>• Determining customer coffee preferences</li> </ul> <p>This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, <b>you will be able to</b>:</p> <ul style="list-style-type: none"> <li>• Provide advice to customers about coffee types</li> <li>• Determine customer coffee preferences</li> </ul>	
<b>Learning Instructions:</b>	
<ol style="list-style-type: none"> <li>1. Read the specific objectives of this Learning Guide.</li> <li>2. Follow the instructions described below.</li> <li>3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.</li> <li>4. Accomplish the “Self-checks” which are placed following all information sheets.</li> <li>5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).</li> </ol>	



## Information Sheet 1- Providing advice to customers about coffee types

### 2.1 Providing advice to customers about coffee types

Coffee styles to be prepared must include:

- short black (espresso)
- long black
- cappuccino
- flat white
- café latte
- short and long macchiato
- mocha



**Cappuccino** A combination of espresso coffee, hot milk and milk.

Pour some milk in a stainless steel jug and allow it to settle. Put one measure of ground coffee into the group filter and lightly compress. Fill cup with 1/3 coffee and with the hot milk. Fill the cup to 80% and then top with the milk froth. Sprinkle with

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Chocolate powder and serve



Short black

**Short black** this cup of coffee is black espresso coffee served in a short cup (demitasse cup).

Place one – two measure/s of coffee from the coffee grinder in to the filter cup and lightly compress and lock into machine. Fill the cup to just under the lip allowing for sugar to be added. Lemon rind can be served as a garnish on the side



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**Long black** Place two measures of coffee from the grinder into the filter cup (same procedure as above). Fill to just over 3/4 in a standard coffee cup

**Flat white** the same as a cappuccino but without the froth on top. Add slightly more milk to make up for the froth flat white



**Cafe latte** ¼ Espresso, ½ steamed milk and ¼ of milk foam on top Long macchiato



**Long macchiato** same as long black adding a dash of milk

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<b>Self-Check -1</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. list down Coffee styles to be prepared(4pts)
2. \_\_\_\_\_A combination of espresso coffee, hot milk and milk(4pts)

**Note:** Satisfactory rating - 8 points

Unsatisfactory - below 8 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

### Test II

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 2- Determining customer coffee preferences

### 2.2 Determine customer coffee preferences



Arabica is the most widely cultivated plant. It is rich and aromatic in Taste. It is grown in south America, east Africa and Indonesia making

Up to 75% of coffee sold. It does however, get attacked by many different disease



Robusta is named after its taste. It is easier to grow than Arabica but The flavor is



considered by many not to be as pleasant. It is blended With Arabica and is cheaper to buy.

## Liberia





Self-Check -2	Written Test
---------------	--------------

Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

### Test I Short Answer Questions

1. What Robusta means?(3pts)
2. What Arabica means? 3pts)

**Note:** Satisfactory rating - 6 points

Unsatisfactory - below 6 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

### Test II

1. \_\_\_\_\_

2. \_\_\_\_\_

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L #25	LO #3- Select and grind coffee
<b>Instruction sheet</b>	
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"> <li>• Selecting coffee, roasting and grinding</li> <li>• Taking consideration for environmental and equipment factors</li> </ul> <p>This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, <b>you will be able to:</b></p> <ul style="list-style-type: none"> <li>• Select coffee, roast and grind</li> <li>• Take consideration for environmental and equipment factors</li> </ul>	
<b>Learning Instructions:</b> <ol style="list-style-type: none"> <li>1. Read the specific objectives of this Learning Guide.</li> <li>2. Follow the instructions described below.</li> <li>3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.</li> <li>4. Accomplish the “Self-checks” which are placed following all information sheets.</li> <li>5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).</li> </ol>	





## Information Sheet 1- Selecting coffee, roasting and grinding

### 3.1 Selecting coffee, roasting and grinding

#### Type of roasting

- Light roasting
- Medium roasting
- Medium dark roasting
- Dark roasting

Select coffee and grind it to the correct particle size, according to your organization's requirements and customer preferences. Consider any environmental and equipment factors affecting dosage, and adjust grind and dose accordingly

#### The different roasts



Coffee beans are green before they are roasted. Roasting green coffee beans develops their flavor and aroma. How much the beans are roasted affects the mellowness, richness and nuttiness of the

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final brew. While the beans are being roasted chemical changes take place. Caramel is formed and oil and gases are released.

The higher the temperature at which the beans are roasted, the lower the acidity of the coffee. So, usually for the dark roasts, the cheaper coffee beans are used. The expensive beans would be wasted on dark roasts because much of their flavor would be lost. There are several roasts of coffee. The table below provides you with a listing of the types of roasts and the main characteristics of each.

### **Type of coffee roast**



### **Grinding coffee**





## Espresso



Coffee grinders may be manual or electric. It does not matter which one you use as long as the ‘fineness’ of the grind can be adjusted. Always follow the manufacturer’s instructions on how to operate the grinders correctly

Factors to consider in grinding coffee include

- pre-setting grinder
- sensory analysis of grind, including:
  - ✓ visual
  - ✓ tactile
  - ✓ olfactory tasting of finished product



<b>Self-Check -1</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. List down the type of roasting (3pts)
2. Write Factors to consider in grinding coffee (3pts)

**Note: Satisfactory rating – 6 points**

**Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

### Test II

1. \_\_\_\_\_

2. \_\_\_\_\_

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## **Information Sheet 2- Taking consideration for environmental and equipment factors**

### **3.2 Taking consideration for environmental and equipment factors**

The environmental impacts of coffee consumption inter alia depend on the preparation method used by consumers. Preparation methods such as filter drip, pod machines and fully automatic coffee machines are the most common ones in Germany: 62% of the consumers use a filter drip machine to brew their coffee, 23% use filter pad machines and 15% use espresso machines such as fully automatic coffee machines or capsule systems. The aim of the different studies presented in this paper was to identify the critical environmental issues along the life cycle of coffee and to compare the different preparation methods of coffee regarding their influence on the environmental impacts. Within the Product Carbon Footprint (PCF) Pilot Project Germany, the PCF of one cup of a special type of coffee was analysed on behalf of Tchibo GmbH (Überseering, Hamburg, Germany). As the results show, the preparation by the consumer is one crucial part of the entire life cycle of coffee, making up a share of 30% of the overall emissions. Another hot spot is the cultivation of coffee beans with 55%. Concerning the use phase, research shows that environmental impacts vary significantly depending on the preparation method used by the consumer. Main drivers are differences in power consumption of the respective technologies. Furthermore, different packagings of the coffee play a decisive role. Comparing the analysed appliances and defined usage scenarios in this study, the French press and filter drip machine performed best, followed by the filter pad machine. In contrast, the environmental impacts of the analyzed fully automatic coffee machine and the capsule machine were highest. The reason for this was the high power consumption, especially in the machines' sleep and standby mode. Additionally, capsule machines contribute to the environmental impacts

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because of the aluminium and/or plastic packaging of the capsules, automatic coffee machines because of their cleaning and rinsing programmes.

<b>Self-Check -2</b>	<b>Written Test</b>
----------------------	---------------------

Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. \_\_\_\_\_ machines contribute to the environmental impacts because of the aluminum and/or plastic packaging of the capsules (4pts)

**Note:** Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

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<b>L #26</b>	<b>LO #4- Extract coffee</b>
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<b>Instruction sheet</b>
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Selecting appropriate cups or glassware
- Measuring or dispensing required dosage and place
- Ensuring group head is clean.
- Monitoring water and pumping pressure
- Analyzing extraction rate
- Assessing quality of extraction visually.
- Checking spent grounds.
- Releasing water.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, **you will be able to:**

- Select appropriate cups or glassware
- Measure or dispensing required dosage and place
- Ensure group head is clean.
- Monitor water and pumping pressure
- Analyze extraction rate
- Assess quality of extraction visually.
- Check spent grounds.
- Release water.

<b>Learning Instructions:</b>
-------------------------------



1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

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## Information Sheet 1- Selecting appropriate cups or glassware

### 4.1 Selecting appropriate cups or glassware

- Select appropriate cups or glassware and ensure they are warm before preparation.
- Measure or dispense required dosage and place it into clean filter basket, tamping coffee evenly using correct pressure.
- Ensure group head is clean prior to inserting group handle.
- Monitor water and pump pressure, and moderate between cycles, according to your organization's procedures.
- Analyze extraction rate and adjust it where appropriate.
- Assess the quality of extraction visually and verify the flavor if you need to.
- Check spent grounds (puck or cake) to identify any required adjustments to dosage and technique.
- Release or purge water for two seconds from the group head before placement of group handle to extract coffee

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<b>Self-Check -1</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. List down the appropriate cups or glassware to make coffee? (5pts)

**Note: Satisfactory rating - 5 points**

**Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 2- Measuring or dispensing required dosage and place

### 4.2 Measuring or dispensing required dosage and place

**Dosage** is the addition of an ingredient or the application of an agent in a measured dose

The nominal doses for espresso are 6 to 7 grams for a single and 12 to 14 grams for a double. Recently, many cafés have raised dose sizes to 8 to 10 grams for a single and 16 to 20 grams for a double. Whatever the dose, consistency is the key.

Take into consideration any environmental and equipment factors affecting dosage, and adjust grind and dose accordingly to get even texture and prepare the right coffee for customers.

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<b>Self-Check -2</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. Define Dosage? (2pts)

**Note:** Satisfactory rating - 8 points

Unsatisfactory - below 8 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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### **Information Sheet 3- Ensure group head is clean**

#### **4.3 Ensuring group head is clean**

##### **Clean your group heads**

1. Wipe the shower screen with your bench cloth.
2. Using a screwdriver, remove the shower screen screws.
3. Place the screws on the top grate of the coffee machine (so you don't lose them.)
4. Rinse and wipe the shower screens under running water.
5. Use your bench cloth to wipe the group-head seals



<b>Self-Check -3</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. Write the steps for cleaning group head? (4pts)

**Note:** Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 4- Monitoring water and pumping pressure

### 4.4 Monitoring water and pumping pressure

- Always keep the coffee-making equipment clean;
- Always use fresh water;
- Always use fresh coffee grounds;
- Always use quality coffee
- Do not boil the coffee (Turkish coffee accepted).
- Boiling coffee will 'stew' the flavor and the coffee will taste like tar

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<b>Self-Check -4</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

**Test I Short Answer Questions**

1. Write the way how to monitoring water and pumping pressure? (3pts)

**Note:** Satisfactory rating - 3 points

Unsatisfactory - below 3 points

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Test I**

1. \_\_\_\_\_

2. \_\_\_\_\_



## Information Sheet 5- Analyzing extraction rate

### 4.5 Analyzing extraction rate

#### Extraction rate

It is expected that the extraction efficiency of the coffee constituents was driven by their solubility in water.

Higher volume of water during extraction, as for Longo coffee in fractions should lead to higher extraction efficiency.

The extraction rate for each coffeemaker and single-dose container is depicted in Extraction rate increases very rapidly in all samples with the extraction volume although conditions for the espresso coffee are already close to the maximum rate achieved in Longo coffee.

After that, an increment in the percolation time did not reflect a significant increment in the extraction rate. It is noteworthy that each sample reached a different final extraction rate varying from If compared the final extraction rate with the maximum extraction rate described in Table

1. Single-dose pod behaved very efficiently since nearly 100% of the maximum extraction rate was reached.

The lowest extraction rates were obtained respectively, as compared with the maximum extractability.

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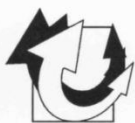
In terms of Solids content Different coffeemakers, single-dose units (pods, and capsule), and ground coffee with different origin and likely roasting degree are used in this investigation. There are many physical parameters governing the extraction such as temperature inside the cake, the pressure above and under the cake, percolation time, dose, particle size and shape, compacting of the bed, etc. Since every sample has a different composition, it is not reliable a direct comparison among samples without a normalization of the process. The kinetic for the extraction was normalized to fraction (corresponding to Longo coffee) since it contains every previous fractions.

When making coffee it is important to have coffee and water in the correct balance:

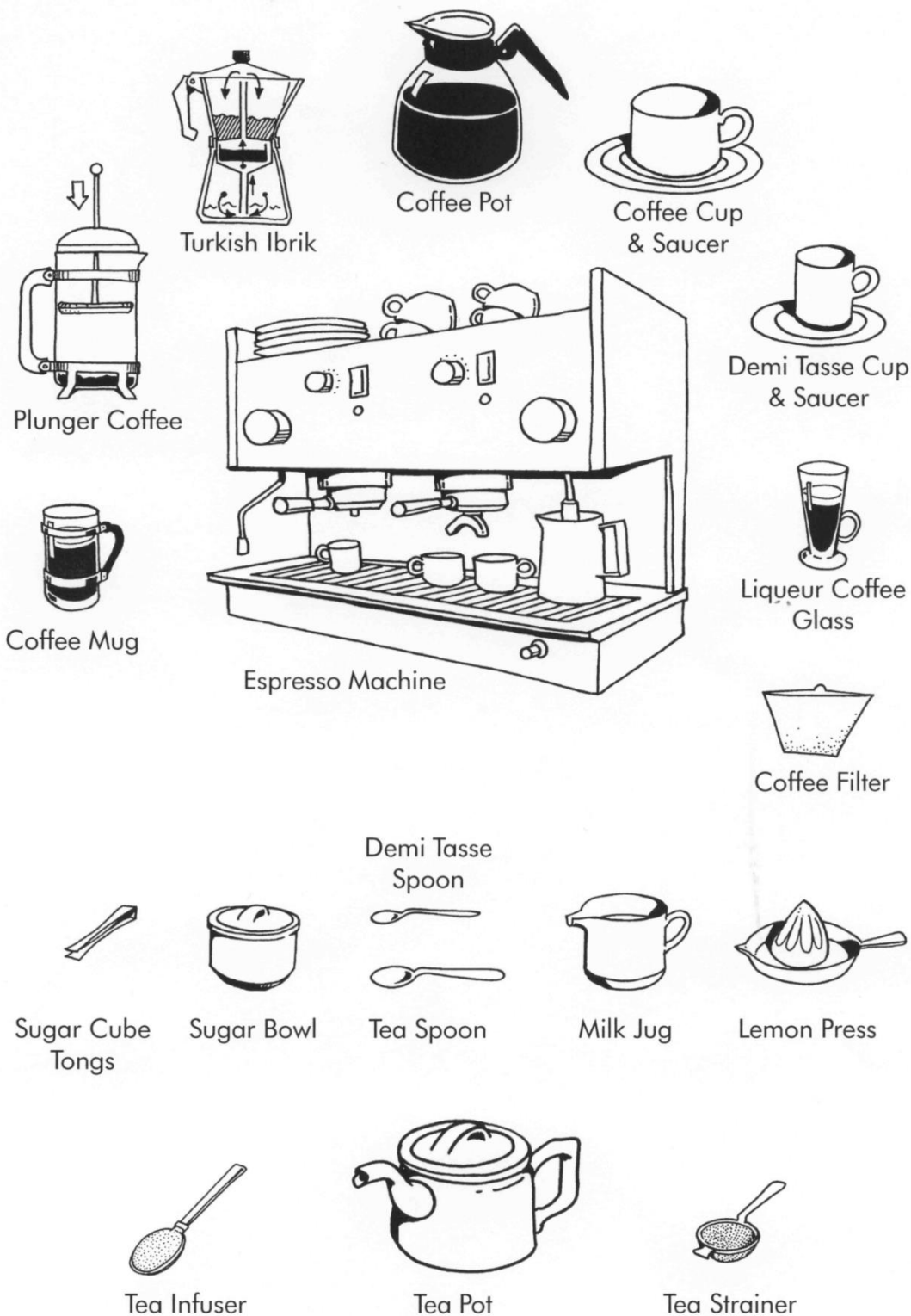
- Under-brewing makes weak, sour coffee;
- Over-brewing causes bitter, unpleasant coffee.

There are several ways of making coffee and a wide range of equipment available. It does not matter what method is chosen if you always follow these basic rules

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## COFFEE/TEA MAKING EQUIPMENT





Self-Check -5	Written Test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

### Test I Short Answer Questions

1. What is Extraction rate? (3pts)

**Note:** Satisfactory rating – 3 points

Unsatisfactory - below 3 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_



## Information Sheet 6- Assessing quality of extraction visually.

### 4.6 Assessing quality of extraction visually

**Coffee extraction:** is the process of dissolving soluble flavors from coffee grounds in water. Proper brewing of coffee requires using the quantity of coffee, ground precisely, extracted to the correct degree, controlled by the correct time and correct temperature.

A trained sensory evaluation panel assessed changes in the aroma, taste and mouth feel of a freshly brewed coffee following standing on a hot-plate for 0, 15, 30, 45 and 60 minutes. Nine sensory attributes from a total of 25 were identified as important descriptors for evaluating the coffee blend. Statistically significant changes in the aroma attribute, Grassy/Green/Herbal were noted after as little as 45 minutes and changes in the aroma attributes Burnt/Smokey and Fruity/Citrus and taste attributes, Acidity and Bitterness were detected after 60 minutes holding-time.

- coffee;
- sensory evaluation;
- holding time;
- descriptive flavor profile

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<b>Self-Check -6</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. What is Coffee extraction(4pts)

**Note:** Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 7- Checking spent grounds

### 4.7 Checking spent grounds

Spent Coffee Ground is a residue of coffee drink mainly used at a coffee shop. Spent coffee ground is used as an odor removal, manure in flowerpot and so on. However most of spent coffee ground is discarded as garbage. In this study, we investigated characteristics of spent coffee ground as a fuel and combustion characteristics in a small boiler system (6.5 kW based on input lower heating value), such as CO, NO<sub>x</sub>, O<sub>2</sub> and heating characteristic of heating boiler. Drying of spent coffee ground in the open air condition takes less than 6 days in case of height of 11 mm. Lower heating value of spent coffee ground used as fuel is about 18.8 MJ/kg (4 500 kcal/kg at water content 10 %). Combustion chamber of the boiler is a crucible type with primary and secondary air supply and heat exchanger is one through type. Spent coffee ground consumption as a fuel of the boiler is about 1.17 kg/hr. O<sub>2</sub> concentration of the flue gas of the boiler is about 17.8 % which is higher than a commercial domestic gas boiler or a domestic wood pellet boiler. CO and NO<sub>x</sub> concentration are 643 and 163 ppm respectively.

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<b>Self-Check -7</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. What is spent Coffee Ground? (4pts)

**Note:** Satisfactory rating - 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 8- Releasing water

### 4.8 Releasing water

#### How to Drain Water Out of the Keurig Coffee Pot

1. Step 1: Adjust the Float in the External Reservoir
2. Step 2: Press the Brew Button
3. Step 3: Wait for the Prime Message
4. Step 1: Check the Schematic
5. Step 2: Remove the Panel
6. Step 3: Disconnect the Drain Hose
7. Step 4: Let the **Water** Drain
8. Step 5: Reconnect the Hose and Reattach the Panel





<b>Self-Check -8</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

- 1 Write the steps how to Releasing water from coffee machine? (4pts)

**Note:** Satisfactory rating – 4 points

Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_



L #27	LO #5- Texture milk
<div data-bbox="183 814 449 846" data-label="Section-Header"> <h3>Instruction sheet</h3> </div>	
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"> <li>• Selecting correct cold milk and appropriate clean, cold jug</li> <li>• Expelling excess water from steam wand</li> <li>• Texturing milk according to milk type</li> <li>• Combining foam and milk through rolling</li> <li>• Pouring milk promptly, evenly and consistently</li> </ul> <p>This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, <b>you will be able to:</b></p> <ul style="list-style-type: none"> <li>• Select correct cold milk and appropriate clean, cold jug</li> <li>• Expel excess water from steam wand</li> <li>• Texture milk according to milk type</li> <li>• Combine foam and milk through rolling</li> <li>• Pour milk promptly, evenly and consistently</li> </ul>	
<div data-bbox="183 1644 526 1675" data-label="Section-Header"> <h3>Learning Instructions:</h3> </div>	

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1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

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## Information Sheet 1- Selecting correct cold milk and appropriate clean, cold jug

**Milk** is a pale liquid produced by the mammary glands of mammals. It is the primary source of nutrition for infant mammals before they are able to digest other types of food.

As an agricultural product, milk is extracted from non-human mammals during or soon after pregnancy.

### Texture milk

Milk is a major component of most espresso drinks. Milks vary depending on whole, skim, 2 percent, soy and rice milk. It is the proteins in the milk that make great foam; the fat adds viscosity and sweetness. Practice with a variety of milks.

Follow these easy steps to create perfectly textured milk:

1. Choose correct steam pitcher size for drink ordered, place steaming thermometer on side of pitcher.
2. Add measured fresh cold milk to pitcher. Pour in only what you need. Set aside.
3. Wipe steam wand, tip and purge to remove any water build up. Use a clean, wet towel.
4. Insert the steam wand tip into milk just below surface using the spout to position the wand.
5. Open steam valve fully and begin to steam. Slowly lower pitcher keeping the wand tip just below milk surface. You'll hear a distinctive "hissing" sound. Avoid

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pulling the wand out so far that it sputters, or moving the pitcher up and down while steaming.

6. For cafe latte and mocha, maintain tip just below milk surface creating a swirling motion until thermometer reads 100 degrees F then allow tip to submerge to heat the remainder of milk to 140 degrees F. This will give the milk a creamy, velvety texture.
  - For cappuccino, “stretch” milk until it almost doubles in size, by keeping the wand just under the surface, slowly lowering pitcher as you steam.
7. Watch thermometer and milk surface while steaming to avoid big bubbles. Carefully touch pitcher to monitor the heat.
8. At 140 degrees F, close steam valve, remove pitcher. Milk thermometer will rise another 10-15 degrees. Final serving temperature should be 150-160 degrees F.
9. Wipe and purge steam wand and tip with a designated steam wand towel that is clean and wet.
10. Settle and swirl milk in steam pitcher to decrease the number and size of bubbles.
11. Prepare the drink and serve. Rinse milk pitcher to be ready for next order.

Perfect milk texture has a glistening surface; tastes and smells sweet; and has rich, ultra dense bubbles

The barista uses all his or her senses when steaming milk. Listen for pitch for temperature control, watch for large bubbles and placement of steam tip, pat the side of pitcher with hand to assure milk is correct temperature. Begin pouring espresso shots before you steam milk for optimum drink preparation.

**Free Pour:** is when a barista pours textured milk directly from the steaming pitcher without the use of a spoon or spatula. This technique is most preferred by professionals.

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**Espresso Ergonomics:** the barista gently, but quickly, opens and closes the steam valve when steaming to avoid stripping gaskets and excessive wear and tear on wrists.

Milk will double in volume if steaming for cappuccino, and increase 1/3 if steaming for a caffè latte.

Milk is NEVER steamed or frothed more than once! Fresh milk is NEVER added to previously steamed or frothed milk. Measuring correctly should prevent too much leftover milk, if any. If steamed milk is left, throw it away!

Stainless steel pitchers, with small pointed spouts, are best for latte art, and milk will foam better if the pitcher is chilled first. Milk should be stored in refrigerator and not on countertop.

Always rotate milk for freshness standards.

## DO'S

- Wipe and purge steam wand clean after every use.
- Rinse the milk pitcher after every use.
- Discard milk that is heated above 170° F.
- Discard old heated milk that falls below 140° F (it's in the danger zone 41°-140°).
- Milk will foam better in a chilled pitcher.

## DON'TS

- NEVER leave the pitcher unattended while steaming.
- Incorrect steaming techniques results in a very loud noise which may disturb the customers.
- Never over tighten steam valves as this will strip gaskets and injure wrists.

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- Cold milk should not be added to heated milk.
- Milk cannot be reheated or re-steamed, EVER!
- Final reading should NEVER be above 170° F or the milk will have a burned taste!
- Steamed milk should **never** be stored in the refrigerator.

### **5.1 Selecting correct cold milk and appropriate clean, cold jug**

- Select correct cold milk and appropriate clean, cold jug according to espresso requirements and quantity on order.
- Expel excess water from steam wand before and after text rising milk and wipe clean after use

### **5.2 Texturing milk according to milk type.**

- Texture milk according to milk type and specific order requirements

### **5.3 Combining foam and milk through rolling:-** Combine foam and milk through rolling, ensuring even consistency.

Through folding, swirling and tapping the milk jug a barista is able to create a smooth 'wet paint' consistency to the milk when can then be used to create a latte. A latte consists of:

- Double espresso shot (60mls)
- Glass filled with steamed milk
- Approximately 1cm of Micro Foam on top

### **5.4 Pouring milk promptly, evenly and consistently**

- Pour milk promptly, evenly and consistently, according to coffee style and customer preferences

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Self-Check -1	Written Test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. Write the steps to create perfectly textured milk? (3pts)
2. What is milk? (3pts)

**Note:** Satisfactory rating - 6 points

Unsatisfactory - below 6 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

### Test II

1. \_\_\_\_\_

2. \_\_\_\_\_

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<b>L #28</b>	<b>LO #6- Serve and present espresso coffee</b>
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### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Presenting coffee attractively
- Serving coffee at the required temperature

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, **you will be able to:**

- Present coffee attractively
- Serve coffee at the required temperature

### Learning Instructions:

1. Read the specific objectives of this Learning Guide.
3. Follow the instructions described below.
4. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
5. Accomplish the “Self-checks” which are placed following all information sheets.
6. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).



## Information Sheet 1- Presenting coffee attractively

### 6.1 Presenting coffee attractively

Present coffee attractively using clean ceramic or glass cups and avoiding drips and spills. Coffee is served in many different ways in many parts of the world.

Coffee must be presented as attractively as possible. When adding frothy milk to coffee or sprinkling chocolate, there is always some risk of spillage. It is therefore best to place the cup on the saucer only after the milk and garnish have been added. Below are some ways of making coffee, which are readily accepted worldwide.

#### **The best procedure is this**

1. Place the cup or glass on the working surface without the saucer.
2. Clean all spills or stains.
3. Carefully add the milk (if required) to the coffee.
4. If necessary, a spoon may be used to hold back excess froth.
5. Sprinkle chocolate garnish (if required)
6. Place the cup on the saucer, with the spoon to its right, and present it to the customer.
7. If coffee is served in a glass it should be presented with a neatly folded napkin (to allow the customer to pick up the glass comfortably).

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8. Customers ordering coffee with still milk may prefer to milk their own coffee to taste. In that case hot milk may be served in a small jug beside the cup for them to help themselves

### **Steps of preparing coffee:**

1. Make sure you are wearing proper shoes and hair is tied back.
  2. Make sure your hands are washed with liquid soap, warm water and dried with paper towels.
  3. Select all equipment needed to make the coffee required (correct cup, saucer, spoon, milk jug, group handle, garnishes, milk, sugar, coffee beans)
  4. Always warm up the cup with hot water
  5. Grind the coffee (only the right amount to make the coffee required)
  6. Measure freshly ground coffee into the group handle. Strong coffee will require a double measure handle for a single cup.
  7. Take the excess of ground coffee evenly;
- Make sure there is no loose grounds on the group handle.
8. Tamp or press ground coffee into the group handle
  9. Flush the group head to make sure there is no old ground coffee left inside.
  10. Insert the group handle under a group head in the espresso machine
  11. Turn the filter handle to hold it firmly in place.
  12. Activate the machine
  13. While coffee is filtering into cups, prepare the milk, if required.

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Self-Check -1	Written Test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. Write the steps of preparing coffee(5pts)

**Note:** Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 2- Serving coffee at the required temperature

### 6.2 Serving coffee at the required temperature

Service of coffee at the table

The coffee cover consist of the following

1. Coffee cups ,saucer, coffee spoon is placed rights of Customers
2. Sugar is offered from the customers left
3. The coffee pot and hot coffee is served from the customers rights
4. Served cream &warm from the customer right (in appropriate )



<b>Self-Check -2</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

### Test I Short Answer Questions

1. List down Service of coffee at the table(3pts)

**Note: Satisfactory rating - 3 points**

**Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

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<b>L #29</b>	<b>LO #7- Clean and maintain espresso machine</b>
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<b>Instruction sheet</b>
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Following and cleaning required OHS
- Cleaning all machine and parts thoroughly and safely
- Carrying out allied end of service activities.
- Monitoring and assessing the operation and efficiency of coffee machine
- Identifying situations requiring the attendance of a trained service.
- Using energy and water resources efficiently.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, **you will be able to:**

- Follow and clean required OHS
- Clean all machine and parts thoroughly and safely
- Carry out allied end of service activities.
- Monitor and assessing the operation and efficiency of coffee machine
- Identify situations requiring the attendance of a trained service.
- Use energy and water resources efficiently.

<b>Learning Instructions:</b>
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1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

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## Information Sheet 1- Following and cleaning required OHS

### 7.1 Following and cleaning required OHS

#### Cleaning Procedures include

- ✓ coffee making waste including recyclable glass and plastic bottles and container wiping down entire machine to ensure cleanliness
- ✓ purging reservoir of hot water, releasing steam and backwashing the machine with an appropriate cleaning solution
- ✓ pouring boiling water to clean drainage pipes
- ✓ back flushing the machine at the end of a service cycle, using clean water to ensure no chemical and other residues are left
- ✓ cleaning the bean hopper using wet method, and drying thoroughly before refilling and storing
- ✓ brushing out dispensers
- ✓ cleaning all remaining parts using dry cleaning method
- ✓ back flushing group heads according to recommended industry methods, using a blank filter and appropriate machine detergent
- ✓ using colour coded cloths, such as using blue for general cleaning and yellow for cleaning and wrapping steam wands
- ✓ wiping steamer wands after each use, using a damp cloth
- ✓ where there is build-up or caked-on product, wrapping steamer wands in a clean cloth, opening the valve and allowing hot water, with steam venting, to soften caked-on milk and then wiping with a damp cloth
- ✓ washing drip trays

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- ✓ removing shower screens and diffusers if appropriate, cleaning using wet method and reassembling
- ✓ cleaning around the inside of the group head using an appropriate brush or cloth
- ✓ cleaning group handle and filter basket and steam arm spout after removing, using the wet method
- ✓ using correct and environmentally sound disposal methods for
- ✓ coffee making waste including recyclable glass and plastic bottles and container wiping down entire machine to ensure cleanliness
- ✓ purging reservoir of hot water, releasing steam and backwashing the machine with an appropriate cleaning solution
- ✓ pouring boiling water to clean drainage pipes
- ✓ back flushing the machine at the end of a service cycle, using clean water to ensure no chemical and other residues are left
- ✓ cleaning the bean hopper using wet method, and drying thoroughly before refilling and storing
- ✓ brushing out dispensers
- ✓ cleaning all remaining parts using dry cleaning method
- ✓ back flushing group heads according to recommended industry methods, using a blank filter and appropriate machine detergent
- ✓ using color coded cloths, such as using blue for general cleaning and yellow for cleaning and wrapping steam wands
- ✓ wiping steamer wands after each use, using a damp cloth
- ✓ where there is build-up or caked-on product, wrapping steamer wands in a clean cloth, opening the valve and allowing hot water, with steam venting, to soften caked-on milk and then wiping with a damp cloth
- ✓ washing drip trays



- ✓ removing shower screens and diffusers if appropriate, cleaning using wet method and reassembling
- ✓ cleaning around the inside of the group head using an appropriate brush or cloth
- ✓ cleaning group handle and filter basket and steam arm spout after removing, using the wet method

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<b>Self-Check -1</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

### Test I Short Answer Questions

1. Write the cleaning Procedures(6pts)

**Note: Satisfactory rating – 6 points**

**Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## Information Sheet 2- Cleaning all machine and parts thoroughly and safely

### 7.2 Cleaning all machine and parts thoroughly and safely

Follow required OHS and your organization's requirements throughout all cleaning and maintenance procedures. Clean all machine and parts thoroughly and safely according to manufacturer specifications and enterprise policies and procedures, using appropriate cleaning method and recommended cleaning products and materials. You must use a range of techniques including

**Wet techniques:** using warm water with recommended detergent for soaking various parts and cleaning with sponge, damp cloth or scourer (only for group handle)

**Dry techniques:** using a damp cloth followed by a dry cloth ally

### 7.3. Carrying out allied end of service activities. Include

- removing beans from hoppers at the end of service day or shift
- storing according to enterprise requirements

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Self-Check -2	Written Test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below.

### Test I Short Answer Questions

1. Write the two types of cleaning techniques? (7pts)

**Note:** Satisfactory rating - 7 points

Unsatisfactory - below 7 points

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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### Information Sheet 3- Monitoring and assessing the operation and efficiency of coffee machine

#### 2. 4 Monitoring and assessing the operation and efficiency of coffee machine

Keep an eye on how well the espresso machine and grinder are working while you use it. If you notice defects or faults or decreased efficiency, take the appropriate action to do something about it. In any case, you have to follow your organization's policies and procedures, OHS, and warranty requirements. You have to be able to realize when you need someone else to come and help

- ensuring the dosing chamber delivers the correct dosage of coffee
- checking steam and pump pressure
- stripping the grinder of external working parts, observing required safety procedures according to enterprise requirements

##### **a. Identifying situations requiring the attendance of a trained service.**

- Like technician, licensed electrician or a designated senior person within the enterprise.

##### **b. Using energy and water resources efficiently.**

- when preparing coffee and cleaning equipment we should take care of negative environmental impacts
- Use energy, water and other resources efficiently when cleaning, preparing and maintaining coffee machine to reduce negative environmental impacts.

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- Safely dispose of all waste, especially hazardous substances, to minimize negative environmental impacts

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<b>Self-Check -3</b>	<b>Written Test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

### Test I Short Answer Questions

1. How to monitoring and assessing the operation and efficiency of coffee machine.  
List down some of them? (4pts)

**Note: Satisfactory rating - 4 points**

**Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

### Answer Sheet

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Test I

1. \_\_\_\_\_

2. \_\_\_\_\_

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## References

1. Atabani, A.E.; Ala'a, H.; Kumar, G.; Saratale, G.D.; Aslam, M.; Khan, H.A.; Said, Z.; Mahmoud, E. Valorization of spent coffee grounds into biofuels and value-added products: Pathway towards integrated bio-refinery. *Fuel* **2019**, *254*, 115640. [[Google Scholar](#)] [[CrossRef](#)]
2. Tun, M.M.; Juchelková, D.; Raclavská, H.; Sassmanová, V. Utilization of biodegradable wastes as a clean energy source in the developing countries: A case study in Myanmar. *Energies* **2018**, *11*, 3183. [[Google Scholar](#)] [[CrossRef](#)]
3. Kang, S.B.; Oh, H.Y.; Kim, J.J.; Choi, K.S. Characteristics of spent coffee ground as a fuel and combustion test in a small boiler (6.5 kW). *Renew. Energy* **2017**, *113*, 1208–1214. [[Google Scholar](#)] [[CrossRef](#)]
4. Karmee, S.K. A spent coffee grounds based biorefinery for the production of biofuels, biopolymers, antioxidants and biocomposites. *Waste Manag.* **2018**, *72*, 240–254. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
5. Zorro, A.; Lavecchia, R. Spent coffee grounds as a valuable source of phenolic compounds and bioenergy. *J. Clean. Prod.* **2012**, *34*, 49–56. [[Google Scholar](#)] [[CrossRef](#)]
6. Burniol-Figols, A.; Cenian, K.; Skiadas, I.V.; Gavala, H.N. Integration of chlorogenic acid recovery and bioethanol production from spent coffee grounds. *Biochem. Eng. J.* **2016**, *116*, 54–64. [[Google Scholar](#)] [[CrossRef](#)]
7. Kwon, E.E.; Yi, H.; Jeon, Y.J. Sequential co-production of biodiesel and bioethanol with spent coffee grounds. *Bioresour. Technol.* **2013**, *136*, 475–480. [[Google Scholar](#)] [[CrossRef](#)] [[PubMed](#)]
8. Somnuk, K.; Eawlex, P.; Prateepchaikul, G. Optimization of coffee oil extraction from spent coffee grounds using four solvents and prototype-scale extraction using circulation process. *Agric. Nat. Resour.* **2017**, *51*, 181–189. [[Google Scholar](#)] [[CrossRef](#)]