

 **APPEARANCE**

 **TEXTURE**

 **SMELL**

 **TASTE**



FLAT BREAD

in words

A GLOSSARY OF SENSORY TERMS TO DESCRIBE THE FLAT BREADS

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The idea behind the project

Introduction

Lesaffre has developed a sensory glossary dedicated to popular types of flat breads from different cultures around the world. This booklet is a comprehensive source of information on the sensory features of various popular flat breads.

Sensory evaluations were mainly carried out under two main headings double-layered and single-layered. Interviews about various types of flat breads from different experts are included. In addition, at the end of each chapter, there are different recipes under the title of the illustration. In this context, pita and lepyoshka breads were taken as the basis for the evaluation of double-layered and single-layered breads, respectively. The booklet provides expert insights into the sensory properties of various types of flat breads such as ; pita, khubz, lepyoshka, tortilla, and lavash.

About the author



Lesaffre sets the global standard for yeast and other fermentation products. The company designs, manufactures and markets solutions that promote baking, nutrition, health and the protection of living organisms. In close collaboration with its clients, Lesaffre confidently innovates, in order to better nourish and protect the planet.

Editorial



**Ali
Askar**

Industrial Bakery
Development Manager
Lesaffre MEA
(Middle East-Gulf-Egypt)

Introduction

Pita is a type of round, flat bread that originated in the Middle East and is believed to be one of the oldest types of yeast-leavened bread made from wheat flour, with a history dating back almost 4,000 years. The word "pita" simply means "flat bread," and it includes the well-known kind with an internal pocket (double layer), often known as Arabic bread (خبز عربي; khubz Arabi).

The term "pita" may occasionally be used when referring to several other flat breads that have distinct names in their local languages, such as various varieties of Arabic khubz.

History

The origins of pita bread can be traced back to the ancient flat breads of the Middle East. Archaeological evidence suggests that the Natufian people, who lived in what is now Jordan during the Stone Age around 14,500 years ago, made a type of flat bread from wild cereal grains.

During the Neolithic period, around 10,000 years ago, wheat and barley were among the first crops to be domesticated in the Fertile Crescent region.

Bread had become an important part of many cultures around 4,000 years ago, particularly in societies like the Babylonian culture of Mesopotamia.

The earliest written records and recipes for bread-making originated in Mesopotamia, where pita-like flat breads cooked in a tannur (a type of oven) were a staple food. These flat breads are similar to modern tandoor bread, taboon bread, and laffa, which is a type of Iraqi flat bread. Although there is no mention of the steam-puffed, two-layer «pocket pita» in ancient literature or in any medieval Arab recipes, food historians like Charles Perry and Gil Marks believe that it was likely a later invention.

Etymology

The Oxford English Dictionary records the first use of the term "Pita" in English as occurring in 1936. The English word is derived from Modern Greek (píta, "bread, pie, cake, pitta"), which in turn comes from Byzantine Greek. It may also come from the Ancient Greek πίττα (pítta) or πίσσα (píssa, both "pitch/resin"), both of which mean "pitch/resin"; or from (pikt, "fermented pastry"), a type of fermented pastry that may have made its way to Latin as picta, similar to pizza.

The word, which Turkish has adopted as pide, also appears in Balkan languages as Bosnian - Serbian-Croatian pita, Romanian pită, Albanian pite, and Bulgarian pitka or pita; however, in the Serbo - Croatian language, it refers to pastries like burek in the nations that make up the former Yugoslavia.

In Arabic, the term "pita bread" is sometimes referred to as "khabaz albayta," while other names for pita include زبخب "khubz" (meaning "bread"), يبرعل ازبخل ا "al-khubz al-arabiy" (meaning "Arab bread"), and ج امكل ا زبخب «khabaz al-kimaj» (meaning "al-kimaj bread"). In Egypt, pita bread is called ع شيم اش "ēš shamy," which means "Levantine bread" or "Syrian bread", or simply ع شيم "ēš," which means "bread". However, other types of bread are also commonly consumed in Egypt, such as «eish fino» and "eish merahrah." Pita (πίτα) in Greek by default refers to the thicker, pocketless Greek pita, whereas Arabic pita (αραβική πίτα, lit. "Arabic pastry") is used to refer to the thinner khubz-style pita. Arabic bread, often referred to as khubz, shami, mafrood, burr, bairuti, Lebanese, pita, and pocket, is well-liked around the world. It is a round flat bread with two layers.

Flat bread Market in the World

The global flat bread market was valued at around \$81,796.6 million in 2018 and is expected to experience a compound annual growth rate of 6.6% between 2019 and 2027, reaching a value of approximately \$145,180.9 million by 2027. The global flat bread market can be divided into several categories based on the type of product, such as tortilla, naan, pita, and others. Among these, the pita segment holds the largest share of the market. Arabic bread, which originated in the Middle East, has gained popularity in many other countries, including the United States, England, Australia, Canada, Mexico, Germany, France, and Italy. The convenience and ease of production of these food products have made them especially popular among young people and working professionals. This has contributed to the success of this type of bread in various countries around the world.

The demand for flat bread is expected to increase in the coming years due to its popularity in the preparation of convenience foods. Flat bread can be used in a variety of dishes, and it is easy to store, making it a convenient choice for both home cooks and food manufacturers. For all these reasons, the Lesaffre Group, wanted to gather all the details related to flat bread, including quality and sensorial parameters, with different recipes of flat breads. In this booklet, the technical descriptions of Pita and Lepyoshka breads in terms of appearance, taste, smell and texture are examined; and alternative recipes are presented with opinions and experiences of experts with whom we collaborate.

Reference:

1. Flat bread Market to 2027 - Global Analysis and Forecasts By Product ; Distribution Channel and Geography

About Sensory Analysis

Industrial, in-store, and artisan bakers must use sensory analysis as a key assessment technique in order to comprehend the consumer's perspective and experience when consuming a product.

- **Marketing**

Creation and approval of product concepts, and competition research.

- **Research & Development**

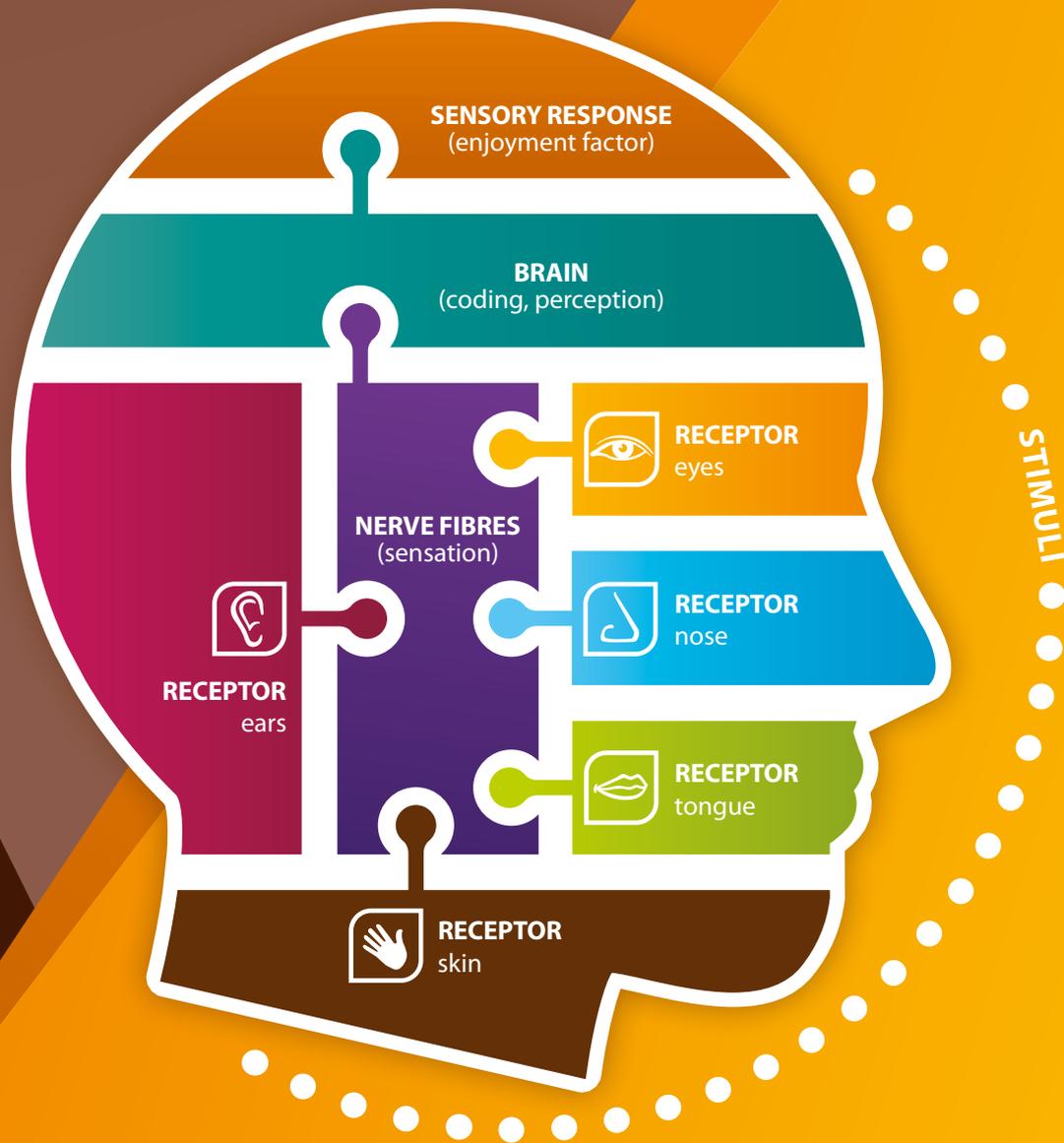
Formulation and process optimization

- **Quality**

Monitoring of raw materials and finished goods



In this methodology, a human panel spotlights and characterizes the organoleptic attributes (such as a product's appearance, smell, texture, and taste).



The retronasal pathway, so termed by experts, is the journey taken by the flavours released in the mouth while eating flat bread to develop and reach the nose. These aromas should not be confused with those that one experiences when smelling a product (scent and smell). Flavours are the collective term for the simultaneous perception of tastes, odours, and mouth-feel sensations that occur during tasting.

Two sensory approaches



Expert
vocabulary



Consumer
vocabulary

Test

An objective analysis of various sensory criteria or attributes undertaken by a measuring instrument

Consumers' assessment of a product's acceptability

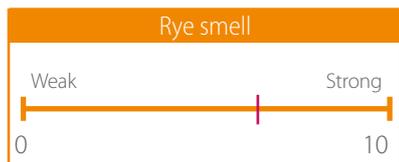
Panel

Expert - 10 to 15 people having undergone 20 hours of specialist training and continued monitoring using regular performance tests

No training - 60 people minimum

Product assessment
and product
presentation

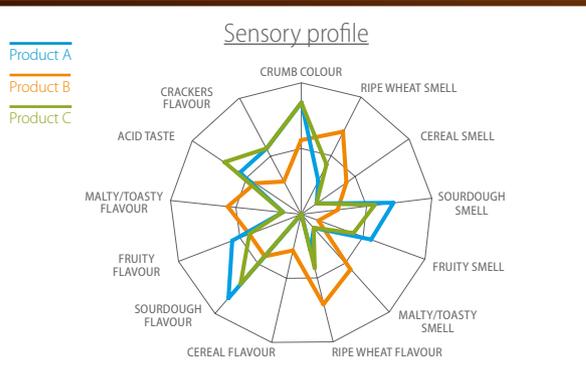
Scoring scale with identified markers
(attribute with precise definition)



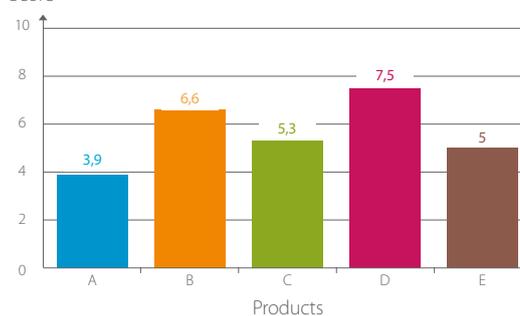
- Allocation of score on assessment scale
- Reasons for preferences (enjoyment factor: whether "liked/disliked")



Typical results



Score Assessment histogram



Typical
conclusion

Product B is characterized by stronger ripe wheat & malty/toasty smells and tastes than products A & C.

N.B.: possibility of correlation with TAXT+, pH meter readings, etc.

The preferred product is the ...

General good tasting practices

Tasters are required to:

- Report any physical issues (cold, dental care, etc.).
- Avoid smoking, wearing perfume, eating/drinking any strong-tasting products (coffee, spicy food, etc.) for at least one hour prior to tasting.
- Avoid talking to other panelists when assessing the products and remain silent during the panel.
- Evaluate equivalent amounts for each product.
- Before tasting each product, rinse your mouth with water.
- Spend as much time as is thought necessary for each test.

The products should be:

- Presented anonymously (coded samples).
- Presented under the same conditions (temperature, amounts and degree of baking).
- If compared, assessed at the same stage of preservation.
- Assessed ideally within 30 min of cooling. Pita/Lepyoshka should be presented at an identical degree of baking.
- The pita is highly sensitive to humidity. It can therefore be useful, if the conditions so permit, to assess the product's texture whilst hot and also immediately after cooling.



The current pita / lepyoshka reference document is a detailed tool for use to understand their texture and taste properties. In addition, most of the concepts presented can be used to evaluate similar types of products, such as pide, lepyoshka, tortilla, barbari, lavash, sangak, taftoon and tanuri.



APPEARANCE

The first factor to be assessed when tasting a Pita / a Lepyoshka is appearance. Depending on whether the sheeted dough has been docked (pricked), flat breads are baked in one or two layers.

The pocket, which is a defining feature of the two-layered flat bread, appears when the moisture in the dough turns to steam and it pushes the dough layers apart during high-heat baking. The steam causes the dough to puff up and create a pocket in the middle of the bread. Pita includes the well-known kind with an internal pocket (double layer). On the other hand, lepyoshka is typically made with a single layer of dough.

Therefore, the evaluation is divided into three phases: the overall appearance of the entire bread, the crust (if a double-layer bread), and concludes with an examination of the crumb of the bread.

The descriptors are presented in the recommended order for performing the assessment.

Shared experiences



Mousa Al-Kadery

Chairman General Manager
Chamsine Amarin

“ Pita is the most consumed bread in Middle East and Central Asia regions. Pita is baked in ovens at 800 °C (inside of oven is 450 °C) within 6-7 seconds. The 3 most important criteria in pita production are the flour quality, bread production line and baker.

Criteria that are important for consumers; The shelf life of pita should be long; the yeast aroma should not be intense, and the bread should be kept moist for a long time. Moisture and softness of pita are important parameters. Pita is expected to remain fresh for 2 days at room temperature, 5 days in the refrigerator and 6 months frozen.

The most important difference between pita bread and other flat breads is that it has two layers. The ease of separation into layers is used as a parameter in sensory evaluation.

The pita surface should be smooth, golden yellow in colour, lightly browned and uniform in colour, with no burns or black spots on the top or bottom. Pita should not be torn; its structure should be thin and elastic.

Pita should have a high wheat odour and a low yeast odour. It should not contain any sour, rancid or roasted odour.

Also, Pita should not have a crumb structure and large pores. These are the key points!

”

Appearance / Overall appearance of double layer breads



Expert Vocabulary



Consumer Vocabulary

	<p>Colour:</p> <p>┆.....▶</p> <p><i>Beige - Gold - Yellow</i></p>		<p>Light- white- yellow - dark- burnt</p>
	<p>Evenness of surface colour: <i>Assess the colour differences of the bread</i></p> <p>┆.....▶</p> <p><i>Uneven (black areas and pale areas) Even (uniformly pale)</i></p>		<p>Irregular - nice - good - bad</p>
	<p>Evenness:</p> <p>┆.....▶</p> <p><i>Uneven Round</i></p>		<p>Nice shape - regular - uneven</p>
	<p>Layer type: <i>When a piece of flattened dough separates into two different layers while baking, two-layers flat breads are created.</i></p> <p>┆.....▶</p> <p><i>Single layer Double layer</i></p>		<p>Pocket, air pocket, double sided</p>

Appearance / Overall appearance of single layer breads



Expert
Vocabulary



Consumer
Vocabulary

	<p>Colour:</p> <p>┆.....▶</p> <p><i>Beige - Gold - Yellow</i></p>	
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Light- white- yellow - dark- burnt

	<p>Evenness of surface colour: <i>Assess the colour differences of the bread</i></p> <p>┆.....▶</p> <p><i>Uneven</i> <i>Even</i></p>	
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Irregular - nice - good - bad

	<p>Evenness:</p> <p>┆.....▶</p> <p><i>Uneven</i> <i>Round</i></p>	
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Nice shape - regular - uneven

	<p>Layer type: <i>Single-layer flat breads are formed when a flattened piece of dough does not separate into the layers during baking.</i></p> <p>┆.....▶</p> <p><i>Single layer</i> <i>Double layer</i></p>	
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One sided

Appearance / Crumb appearance of single layer breads



Expert Vocabulary



Consumer Vocabulary

Heavy, dense, compact, under-risen, not risen, under-developed, flat, lacking bubbles, few bubbles/bubbles (varying amount), hollows (varying amount) structure, aerated, light, air-holes (varying amount), well-risen, well-developed, fluffy

Thin, flat, tight, dense compact / thick, puffy, well-risen, voluminous

Rough, gritty

Appearance / Unwanted parameters



Expert & Consumer vocabulary



Unwanted fluffiness on the surface of bread



Unwanted fluffiness in the middle of bread



Presence of black spots: unwanted black spots on bread



SMELL

The smell of freshly baked goods have a tremendous magnet to the consumer! When the scent initially tempts the consumer's nose, the process of tasting begins, and it continues in the mouth.

Shared experiences



**Sattorov
SHAXBOZ**

Nonvoy Bakery
Uzbekistan, Tashkent

“ In our country, Uzbekistan, bread (baked in a floor furnace) is considered as a symbol of respect and dearness. People of our country respect bread as a holy thing, like they respect fathers and mothers. Lepyoshka is one of the most consumed bread in our country.

On average this kind of bakery uses 300kg of flour per day, baking 800-1000 pieces of bread.

I have been baking with 5-6 recipes, including oily, fat free, pastry, plain, meaty. Plain bread is very tasty and nutritious; therefore, we sell many of them daily. People want tasty, soft baked and hot bread. In the evaluation of bread (baked in floor furnace), important factors are its taste, outward appearance and smell.

The most important thing in bakery is to mix dough in sufficient time. ”



Shared experiences



**Sachin
PATIL**

Lesaffre Gulf Area
Industrial Key Account
Manager

“ When considering a good Arabic bread Arabic Bread / Khubz is commonly known as pita in the west where it is usually thicker and in a round shape. Traditional Arabic bread is flat, leavened, circular and usually about 10in / 25cm in diameter although it can vary. It is baked at high temperatures causing the dough to puff and create pockets.

The most desirable characteristics of flat bread include gold-brown colour, soft white and moist crumb, small and uniform texture, high specific volume. Quality factors for Arabic flat bread include a complete separation of upper and lower layers, equal thickness of layers and white dry crust with brown spots.

As a grain-based, low-fat food, Arabic Flat bread is considered highly nutritious, providing iron, several important B vitamins and protein. Wheat contains complex carbohydrates and fibre which are vital energy sources utilized by the body. One large pita has about 160 calories but does not possess the empty calories found in white bread. Depending on what is stuffed into a flat bread, this bread can be an excellent addition to any low-calorie, heart-healthy diet.



The history of flat breads began during the Neolithic period, and marched forward according to ingredient availability, socio-economic conditions, and technological advancements. Flat breads were the first breads, simply made from stoneground grains and water rolled into a flat dough. Baked on heated rocks and later in clay ovens, such breads were a staple of many cultures. Each culture put its mark on the breads, developing their individual identities as Indo-Persian naan, Near- and Middle Eastern pita, Scandinavian flat bröts, and North- and Central American tortillas. Flat breads are likely the first type of processed food made by man, with archaeological records dating back 6000 years. Today, flat breads are produced and consumed in many countries.

The high nutritional value of this type of bread is attracting health-conscious consumers in both developed and developing countries to consume it. Growing demand for convenience food products is driving the growth of the flat bread market particularly that attributed to fast-food chains and restaurants. The demand for convenience foods such as wraps and rolls is growing at a faster pace due to changes in social and economic patterns, as well as an increase in urbanization, buying power and awareness about health foods, changes in food habits and meal patterns, and the desire to taste new products. Flat bread technology, including specific ingredients, production techniques, equipment and process, all of which are important in Arabic bread preparation.

The texture, taste and no smell of yeast; also consumers want to limit carbohydrate and consume healthier ingredients with fewer calories.

Traditional flat bread, available in all manner of different shapes, sizes and recipes, is still a dominant feature of meals. Markouk, shamy, tameez, shark or mana'eesh: all these bread varieties have their own flavour and typical appearance, depending on whether their origins lie in Jordan, Yemen, Lebanon or Iraq. But the unchallenged favourite in the Gulf is still khubz (also called khubooz, khubuz or chubz), a yeast-leavened flat bread made from wheat flour with a high extraction level. It has a soft, rather rubbery consistency and is easy to fold and fill.

The key factors of sensory of a pita bread are flavour, texture, and moisture. Importance of sensory assessment to develop new recipes. The role of sensory evaluation is to provide valid and reliable information as to the production and marketing management to make sound business decisions regarding the perceived sensory properties of the product.

Cost savings may be realized by correlating sensory properties. For properties such as taste, flavour and texture, sensory analysis is used in assessing the quality of flat bread, troubleshooting problems and new recipe development.

”

Smell

Each expert attribute is illustrated by a recipe that can be mixed in an opaque container.



Expert Vocabulary

• Potato smell

Weak Intense

RECIPE

√ 2 g potato mix √ 5 g water
√ 5 g pita / lepyoshka bread

• Roasted smell

Weak Intense

RECIPE

√ 1 g burnt bread √ 4 g water
√ 4 g pita / lepyoshka bread

• Rye smell

Weak Intense

RECIPE

√ 10 g of 90% rye pita / lepyoshka bread

• Tandoor smell

Weak Intense

RECIPE

√ 5 g water √ 5 g tandoor flour
√ 5 g Pita / Lepyoshka bread

• Wheat smell

Weak Intense

RECIPE

√ 5 g wheat flour √ 5 g water
√ 5 g Pita / Lepyoshka bread

• Whole wheat smell

Weak Intense

RECIPE

√ 10 g of 90% whole pita / Lepyoshka bread

• Yeast smell

Weak Intense

RECIPE

√ 2 g fresh yeast √ 2 g dry yeast
√ 5 g Pita / Lepyoshka bread

• Fatty smell

Weak Intense

RECIPE

√ 2 g margarine
√ 5 g Pita / Lepyoshka bread

• Oily Smell

Weak Intense

RECIPE

√ 2 g margarine √ 5 g sunflower oil
√ 5 g Pita / Lepyoshka bread



Consumer Vocabulary

• Potato, earthy

• Roasted, burnt, over baked, toasty, smoky

• Rye, spicy, cereal

• Bitter, roasted, smoky, barbecue like, burnt

• Bread smell, wheaty, no smell, floury

• Earthy, wholemeal, bran

• Fermentation, fermented, alcohol, yeast

• Fatty, oily, margarine

• Fatty, oily, fried

Neutral, fresh, cracker-like, cardboard smell

Not common

Spontaneous comments by experts



Smell

Illustration



Lepyoshka with Multigrain Mix

Formula

Multigrain mix	2000 g	100 %
Water	1200 g	60,0 %
Salt	30 g	1,5 %
instant Dry Yeast	14 g	0,70 %
Total	3244 g	

PROCESS

Mixer type	Spiral mixer
Mixing time	2' + 6' min
Dough temperature	28 - 30°C
Bulk fermentation	120 min in 25°C
Scaling, Rounding	350 - 500 g
Resting	30-40 min in ambient temperature (25-28°C) and cover the surface of dough
Shaping	Dough rolled out by hand (thickness till-1,5cm and diameter-25 cm) and pressure the middle of dough by special tool which named «Chekich»
Final fermentation	30 min at 25°C / %75-80 RH
Egg wash	Lubricated surface the dough by special liquid bulamach
Decoration	Decorate the middle of the dough by dark and white sesame
Baking	Deck oven 20-22 min 230-250 °C (with steam)

roasted aroma & seeds aroma
roasted aroma *seeds aroma*
Rye seeds aroma
Rye *Seeds aroma*
roasted aroma & seeds aroma





TEXTURE

The texture of a type of bread, which is first experienced through touch and later in the mouth, is a significant factor. The taster must take into account the entire flat bread texture and not forget: to check if it is elastic, dry or fresh?

Shared experiences



**Atheer
AL-KHAFAJI**

Vice president of Sanabel
Al-Tahoona Company
Product Quality Manager
Iraq - Baghdad



Good flat bread means soft and fluffy. The most important essential characteristics are the low amount of sugar and salt in the flat bread compared with other types of bread. Flat bread is preferred because of the lightness of the dough inside, and the ease of making sandwiches in restaurants and homes. The smell of the flat bread is almost non-existent, and this is required so that the smell and taste of the filling in the bread can be perceived very quickly: such as meat, chicken, cheese, etc.

The level of flat bread consumption depends on the population of the region or the country; for example, in the countries of the Levant, this bread is the most basic type, meaning that 90% of the consumption is flat bread when compared with other types. The Levant was the first to help develop Arabic bread in other countries and continents regarding the type of wheat that should be used. The consumption of flat bread is growing in all Arabic countries, spreading to Europe in recent years. European countries tend to have healthy bread (barley/oats/wheat grains).

The main steps of the bread-making process are the type of mixer and the type of wheat used in preparation. Usually, between 26 and 28 percent gluten can be added to recipes. Salt, sugar, and yeast are important as well. The role of yeast in the color improvement of the bread is great.

The consumer is looking for the possibility of keeping the flat bread for longer without any preservatives while maintaining its softness and taste, as well as its appropriate material cost. There are many types of flat breads including wheat bread, barley bread, bran bread, oatmeal bread, thyme bread, and herbal bread. The secret to flat bread smell depends in first place on the wheat and yeast used and other artisanal matters like dough temperature and dough leavening time.

These factors are the most important in the taste and quality of the loaf. Success depends on the quality of flat bread, the variety of food, the method of packaging, and the shape of the bag plays a great role in attracting the customer's attention, and our company is characterized by the method of packaging and the materials used in that.

Flat bread varies in every region and country. Its simple variety in terms of measurement and thickness in Iraq, Beirut, Syria, Saudi Arabia, and a few other countries, that prefer light bread. For example, in Jordan, bread is thick and contains a lot of pulp. As for the measurement, the bread size for markets and houses is from 22 cm to 27 cm, and the measurement for restaurants is 30 to 36 cm.

Texture / Double layer bread to the touch



Expert Vocabulary



Consumer Vocabulary

	<p>Rollability:</p> <p>The bread is rolled to see if there is a breakage at the edges of the bread.</p> <p>Not rollable (The layer breaks)</p> <p>Rollable (The pita returns quickly to its initial shape)</p>		<p>Easily damaged, hard, elastic</p>
	<p>Elasticity:</p> <p>The pita bread is held with two hands in a region that is close to the edges and smooth (not torn). The thumbs are placed on the upper part of the pita, and the other 4 fingers (adjacent to each other) are placed on the lower part, and the severity of the force applied to the rupture is evaluated by pulling the bread (applying the same force) to both sides. If the pita bread breaks easily, it is less elastic, if it breaks hard, it is very elastic.</p> <p>Not very elastic</p> <p>Fresh/doughy</p>		<p>Hard, firm, tough/elastic, supple, rubbery</p>
	<p>Layering:</p> <p>a bread is divided into layers with two hands from its line (the outermost edge). The ease of separation into layers is evaluated. If it leaves easily, it gets a high score; if it leaves hard, it gets a low score.</p> <p>Easy separate</p> <p>Hard separate</p>		<p>Easy-hard-firm</p>
	<p>Smoothness:</p> <p>The degree of smoothness is evaluated by applying the middle and ring fingers to the upper surface of the pita bread from top to bottom. If the sliding feeling is high, high values are given, if low, low values are given.</p> <p>Not smooth</p> <p>Smooth</p>		<p>Smooth (varying degree), lumpy, bumpy, puffy, coarse, rough</p>

Texture / Single layer bread to the touch



Expert Vocabulary

Elastic texture:

Press firmly on the center of the slice with one finger, then assess the ability of the crust to return to its original shape. Observing; if the crumb immediately springs back, it is very elastic. If the finger mark remains visible, it is less elastic



Crumb moistness:

Press the surface of crumb and assess persistent humidity.



Consumer Vocabulary

Easily damaged, hard, elastic

Hard, dry, humid, soft

Texture / Mouthfeel of the flat breads



Expert Vocabulary

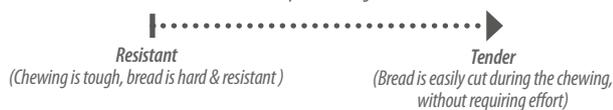
Crumb moistness:

Assess the moistness of a piece of dough taken from middle with topping inside, when chewing



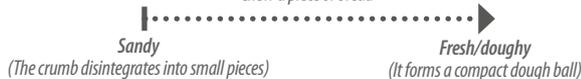
Chewing resistance:

Assess the resistance of a piece of dough taken from middle



Freshness in mouth:

Chew a piece of bread



Doughiness:

Assess the development of the structure of a piece of dough placed in the mouth without chewing.



Consumer Vocabulary

Dry, crumbly, humid, moist, tacky, fresh

Hard, firm, tough, rubbery/easy to chew, light, airy, melt-in-the mouth

Sand-like, sticky, dry, gummy

Light, delicate, aerated, airy, friable, crumbly/doughy, heavy, dense, compact, filling, over-filling

Texture

Illustration



Rye Pita Bread

Formula

Rye mix	1000 g	100 %
Water	430 g	43,0 %
Instant Dry yeast	8 g	0,8 %
Sugar	30 g	3 %
Salt	10 g	1 %
Total Dough	1478 g	

Process

Mixer type	Spiral mixer
Mixing time	7+1' min
Dough temperature	28 - 30°C
Resting time	45 mins 30°C- No steam
Cutting	Line
Rounding	Line
Relaxing	Line
Shaping	Pita
Final fermentation	Line (8 min)
Baking	Line Pita oven 450-500°C/ 5-7 sec.

Chewing resistance Elasticity
Humidity in the mouth
Elasticity
Humidity in the mouth
Humidity in the mouth **Chewing resistance**





TASTE

A purchase, especially a repeat purchase, is heavily influenced by the bread's taste.



Shared experiences



**Tülay
KAHRAMAN**

R & D Director
Uno / Unmas
Turkey

Lavash or Tortilla, a type of flat bread, is symmetrical, uniform, and expected to be opaque with reddened spots. They should also be soft, and flexible without cracking when folded, and puffed. What are its main characteristics in terms of aspect, texture, flavour, smell...

Tortilla Colour: Can be white to yellow, on the product surface burn-marks are possible.

Tortilla Opacity: Can be opaque to translucent, product surface can be translucent

Tortilla Shape: Exact tortilla shape is round.

Tortilla Surface: Blisters can be seen on the product surface, size of blister is important.

Tortilla Roughness: It is quantized deviations of the real surface from the ideal form. Variation can be smooth to rough.

Tortilla Rollability: Shelf stability can be determined by rolling a tortilla and evaluating the extent of cracking and breaking.

Tortilla Extensibility: A lower force value means a weaker tortilla, one that would break more easily when being filled with other ingredients such as meat and vegetables.

Tortilla Hardness: Hardness is the force required to bite completely through the sample when placed between molars.

Tortilla Flavour: Acidic /sour, salty, sweet, or bitter

• **Why do you like this product? Is it for its sensory properties?**

Rollability, extensibility, hardness, and of course sensory properties

• **What is the worldwide consumption?**

The total market size is growing day by day. In 2011, it exceeded US\$10 million.

The market size in Turkey is known to be more than 26000 TL per year.

• **Who are the leading consumers of Lavash?**

Schools are one of the leading consumer segments of lavash bread. These are followed by retails and restaurants.

• **In which areas is the consumption of this type of bread growing?**

According to the Tortilla Industry Association (TIA) growth in consumption is especially high in the USA. Tortillas are the fastest growing segment of the U.S. baking industry with total sales greater than \$12 billion. Tortillas represent about 30% of the sales, making them the second most popular bread type in America after white pan bread.

• **There are a lot of different flat bread categories, how do you express this diversity?**

Soft, more traditional, salty or acidic taste, good alternative sandwich bread

• **What are the key sensory factors of a "Lavash"?**

What is the importance of sensory assessment to develop new recipes?

Flavor, odour and texture are very important during the development of the new recipe according to consumer expectations.

Flavour



Expert Vocabulary

• Potato flavour



RECIPE

Flat bread with potato mix

• Roasted flavour



RECIPE

Flat bread with longer baking time

• Rye flavour



RECIPE

Flat bread with rye Flour

• Tandoor flavour



RECIPE

Flat bread with tandoor Flour

• Wheat flavour



RECIPE

Under-yeasted bread (short fermentation)

• Wholewheat flavour



RECIPE

Flat bread with rye flour/bran

• Yeast flavour



RECIPE

Over-yeasted flat bread (long fermentation)

• Corn flavour



RECIPE

Bread made with corn flour

• Fatty flavour



RECIPE

Bread made with margarine %5

• Oily flavour



RECIPE

Bread made with oil %5

Spontaneous comments by experts

ingredients that can be added directly to the dough



Consumer Vocabulary

• Potato, earthy

• Roasted, burnt, over baked, toasty, smoky

• Rye, spicy, cereal

• Bitter, roasted, toasty, grilled

• Bread like

• Cereal, earthy

• Yeast, bread, fermented

• Corn

• Fatty, oily, margarine

• Fatty, oily, fried

Traditionnal, good, tasteful

Not common



Taste



Expert Vocabulary

• Salty taste



VERY SALTY RECIPE

3% salt

• Sweet taste



VERY SWEET RECIPE

5% sugar



Consumer Vocabulary

• Bland, neutral/salty (slightly to over-salty)

• Sugary, sweet



Taste

Illustration

Multigrain Mix Pita Bread



Formula		
Multigrain mix	1000 g	100 %
Water	450 g	45,0 %
Salt	13 g	1,3 %
Instant Dry yeast	8 g	0,8 %
Sugar	3 g	3,0 %
Total Dough	1501 g	

Process	
Mixer type	Spiral mixer
Mixing time	7+1' min
Dough temperature	30 - 31°C
Resting time	45 mins 30°C- No steam
Cutting	Pita Line 80-85 g
Rounding	Line
Relaxing	Line
Shaping	Pita
Final fermentation	8 min in Line
Baking	Pita oven 450-500°C/ 5-7 sec.

rye seeds
seeds *rye seeds*
rye *roasted seeds*
rye *roasted*

FLAT BREAD *in words*

A GLOSSARY OF SENSORY TERMS TO DESCRIBE THE FLAT BREADS

Lesaffre, a company renowned for its sensory expertise, has created a glossary of sensory terms customised for the assessment of flat breads. This tool combines the more subjective consumer perspective with the more objective expert point of view.



← Already published



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