



APPEARANCE



SMELL



TEXTURE



TASTE



# SANDWICH BREAD

## *in words*

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**"In terms of external appearance of baked products, you often do not get a second chance to make a first good impression. More importantly, the internal characteristics, like flavour, grain, texture, taste, mouthfeel, etc; will determine if the customer returns for another loaf.**

**The vested interest of the baker is to make the best possible looking and tasting product with the best ingredients available."**

Roy Chung

## The idea behind the project

**Lesaffre, in collaboration with U.S. Wheat Associates, has developed a glossary dedicated to the sandwich loaf. Firstly to formalise a common vocabulary drawing on different cultures and incorporating a repeatable assessment method, and secondly, with the help of Allied Bakeries, to create a bridge to connect experts with consumers.**

Whether it's for eating sliced with butter and jam, or for making sandwiches, sandwich bread is widely consumed and enjoyed throughout the world.

Yet, how does one describe and talk about this bread type? Putting our perceptions into words as consumers is no easy task.

Some people describe sandwich bread as having a «fine crumb», a «light texture» and a «supple crust»... and others speak of its «high resilience» and «stickiness»...

Sensory analysis can now be considered an important communication tool for the baking industry to find the right words to express our feelings and use a common language when describing a given product.

## About the authors



**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.

**U.S. Wheat Associates** (USW) is the U.S. wheat industry's market development organization working in more than 100 countries. Its mission is to "develop, maintain and expand international markets to enhance the profitability of U.S. wheat producers and their customers." USW activities are funded by producer check off dollars managed by 19 state wheat commissions and USDA Foreign Agricultural Service cost-share programs. For more information, visit [www.uswheat.org](http://www.uswheat.org)



**Roy Chung** is a Bakery Consultant based in Singapore, from U.S. Wheat Associates. Roy is responsible for USW's technical service programs for the South Asia region and beyond. He works with individual bakers, baking schools, flour mills and others associated with wheat and baking. In his thirty-nine years career with USW, he has been instrumental in creating a number of baking schools and new baking courses to address the problems and needs of the milling and baking industry in the region. Roy hosts a number of annual training programs in the Asian region and has travelled extensively and internationally as a speaker and guest lecturer at various baking schools, baking industry meetings and conferences.

# Editorial



by **Nigel Saunders**,  
Technical Bakery Advisor,  
Lesaffre Singapore

Sandwich bread is almost certainly one of the most enigmatic bread types of our times: it is at once the most standardised and widespread of bread products, but it is also one of the most adaptable and available in a variety of forms!

## A little background history

Sandwich bread grew in popularity responding to the canons of the industrial revolution era: standardisation, accessibility for all classes of the population, in all areas of the country. It benefitted from the development of new technologies, such as Rollermills in 1834, and the slicing/wrapping machine invented by Otto Rohwedder in 1912. In 1933, 80 % of bread in the US was sold in a sliced and packaged form!

Consumers adapt to the offering in the case of most products; however, sandwich bread is driven by the American and English marketing laws and has therefore had to morph, change and adapt to the market demand.

It was one of the first foods to be fortified for nutritional value; as early as 1941 it was supplemented with calcium to remedy rickets during the war then with iron, vitamins B1 and B3 in the 50's, and again with fibre in the 1980s...

Very early on, it started to incorporate functional agents to ensure safe production (oxidizing, reducing and emulsifying agents, enzymes, etc.), or satisfy the customer's needs increased shelf life, texturizing agents for softness, flavourings for standardized tastes, or even more diversified flavours.

It then witnessed the intensive mechanisation arising from the revolution brought about by the development of the Chorleywood Bread Process in 1961.

Thanks to this new technique, its consumption spread within the Commonwealth and afterwards in Asia and post-war Europe.

Its remarkable properties as a long shelf life product (low sensitivity to variations in temperature and humidity) made it a particularly sought-after product especially because it is well adapted to the snacking phenomenon.

Finally, it is produced to accommodate regional preferences (sugar, fat, milk content, extra softness, Yugen in Japan).

## The situation today

- Deemed a convenience product in English-speaking countries and containing low levels of sugar (2-5 %) and fat (0-5 %), it has now become a luxury product in Asia where guests invited to a reception may bring a gift of a packet of 3/5 slices, containing levels of sugar of anywhere up to 25 % and a larger amount of fat.
- It can vary enormously in terms of methods of production and types of consumption:
  - Based on wheat flour (in its white or wholemeal versions), with or without colouring ingredients, such as green tea (macha) to achieve the green colour so popular in Asia, or squid ink and bamboo charcoal to make it black.

- Made using the prefermentation method (sponge), or the straight dough process, baked in a closed or open tin (usually a rectangular tin, but sometimes in more original forms or animal-shaped molds), with or without a crust («crustless»), or baked in a steam oven/microwave, etc.
- Eaten as is, or toasted, cut into shapes using a mold, baked off with garlic butter, or turned into bread pudding for dessert, etc.

## A few facts and figures

Depending on the country, data on the development of this bread type are varying and diverse, both regarding value and volume. Mature countries, such as England have posted a decline of 6 to 10 % in value over the past few years and of 3 to 6 % a year in volume, while the Middle East is experiencing two-figure growth. But one thing is certain: its consumption is growing worldwide and taking over from traditional bread forms (availability and shelf life being the main reasons cited), but also with the changes taking place in bread consumption worldwide (increase in population, new consumer habits, rise of the middle classes, etc.).



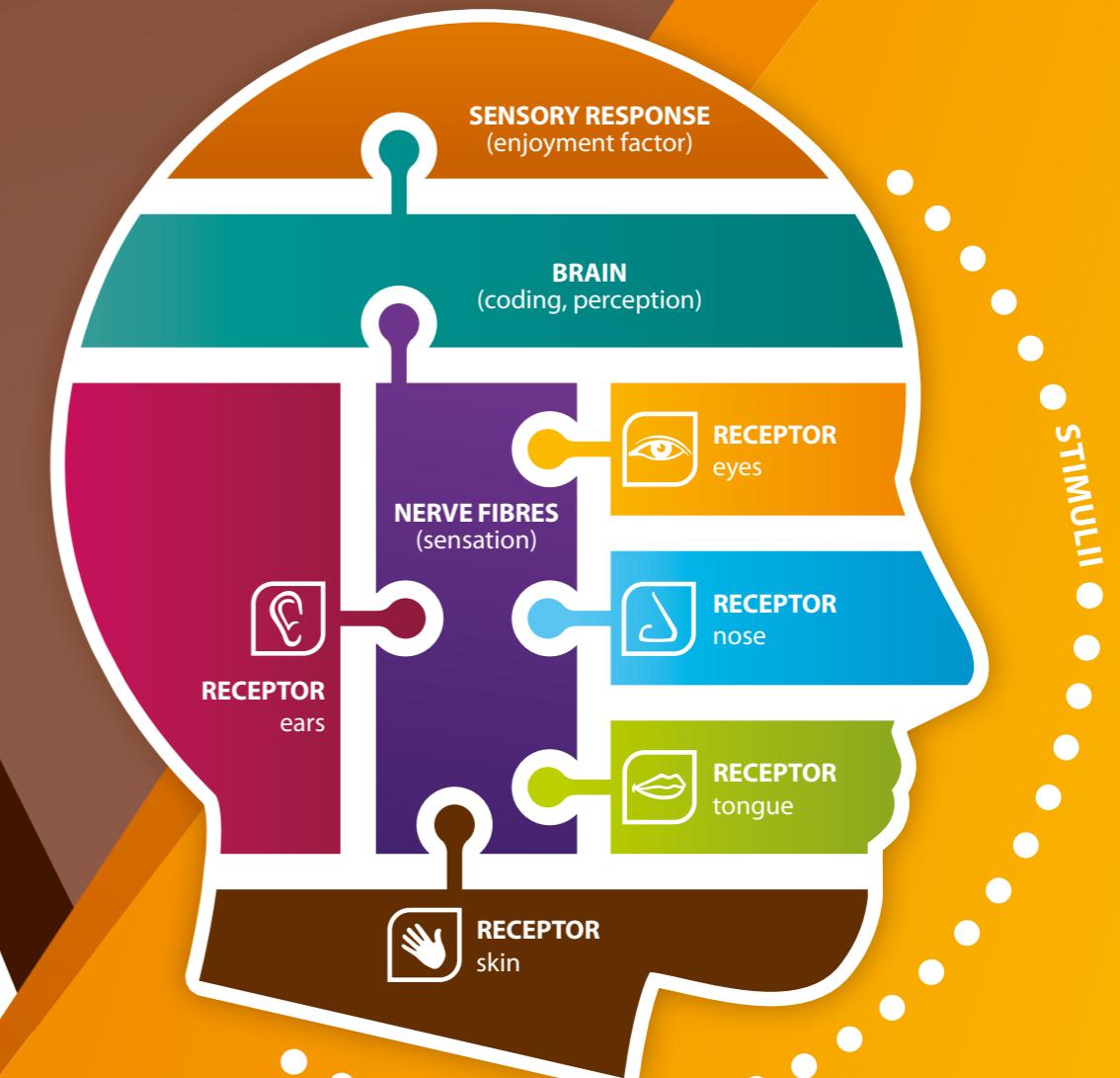
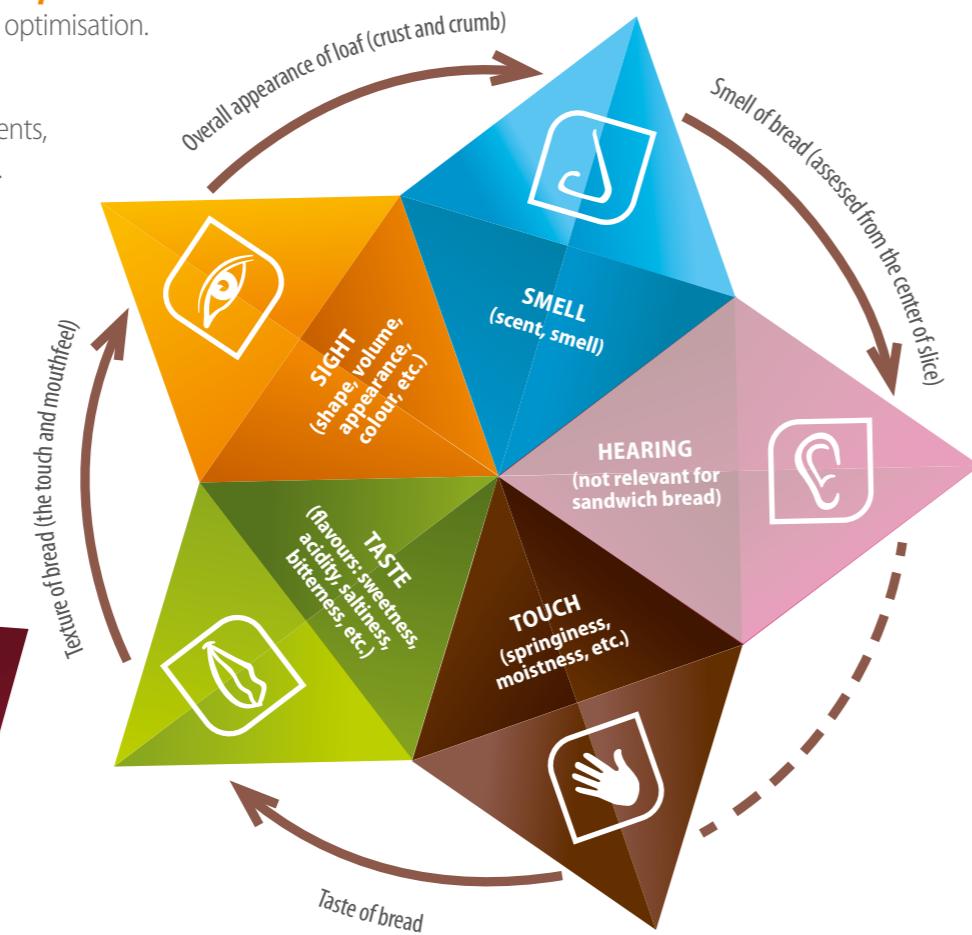
## For a better understanding

There are, at present, few articles on the use of descriptive terminology when talking about the bakery universe (MARÍA JESÚS CALLEJO, Present situation on the descriptive sensory analysis of bread, Journal of Sensory Studies 2011), and only one article makes the link between the objectivity and precision of an expert's vocabulary with the more spontaneous vocabulary of the consumer (M. HERSLETH, R. BERGGREN, F. WESTAD and M. MARTENS, Perception of Bread: A comparison of Consumers and Trained Assessors; Sensory and Nutritive Qualities of Food, 2005). However, there is no detailed information in this previous article about the experts' methods for assessment nor illustrations... The American Institute of Baking has a well-documented system, designed for pan bread quality assessment, and it has been used as a benchmark or modified for local use by bakers in many countries that consume bread in a tin loaf form.

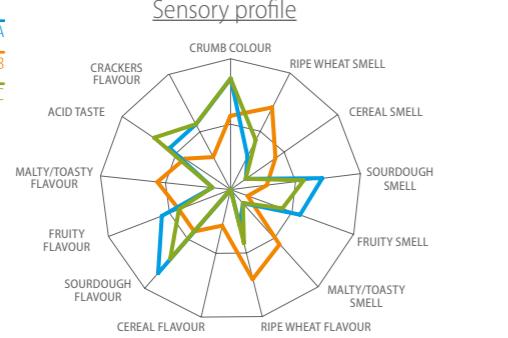
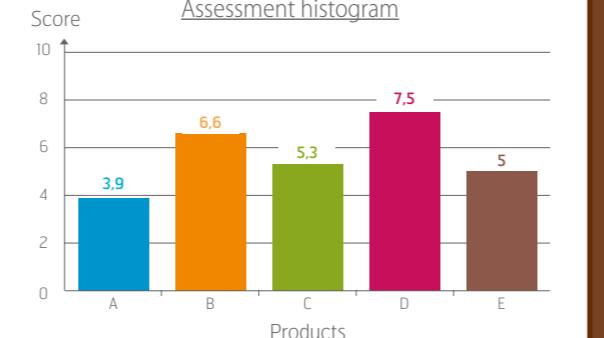
# About Sensory Analysis

Sensory analysis is an essential tool for craft, foodservice and industrial bakeries.

- **Marketing**  
Development and validation of product concepts, benchmarking.
- **Research & Development**  
Formulation and process optimisation.
- **Quality**  
Follow-up of raw ingredients, supply finished products.



# Two sensory approaches

	Expert vocabulary	Consumer vocabulary												
Test	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 specialized training and subjected to regular performance checks	No training - 60 people minimum												
Product assessment and presentation	Scoring scale with identified markers (attribute with precise definition)  	Allocation of score on assessment scale • Reasons for preference (enjoyment factor: whether "liked/disliked")  												
Typical results		 <table border="1"> <caption>Assessment histogram</caption> <thead> <tr> <th>Products</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>3.9</td> </tr> <tr> <td>B</td> <td>6.6</td> </tr> <tr> <td>C</td> <td>5.3</td> </tr> <tr> <td>D</td> <td>7.5</td> </tr> <tr> <td>E</td> <td>5</td> </tr> </tbody> </table>	Products	Score	A	3.9	B	6.6	C	5.3	D	7.5	E	5
Products	Score													
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Typical conclusion	<p><b>Product B is characterized by stronger ripe wheat &amp; malty/toasty smells and tastes than products A &amp; C.</b></p> <p>N.B.: possibility of correlation with TAXT+, pH meter readings, etc.</p>	<p><b>The preferred product is...</b></p>												

## General good tasting practices

### Tasters are required to:

- Report any physiological impediments (cold, dental care, etc.)
- Avoid smoking, wearing perfume, or eating any strong-tasting products (confectionery, coffee, spicy foods, etc.) for at least one hour prior to tasting.
- Avoid talking to other tasters when assessing the products and remain silent during the tasting session.
- Agree to minimum/maximum amounts when tasting the products and/or assessing equivalent amounts for each product.
- Rinse out the mouth with water before tasting each product.
- Take the time deemed necessary for each test.

### The products should be:

- Presented anonymously (coded samples).
- Presented under the same conditions (temperature, amounts, degree of baking).
- The products should be compared at the same point in their shelf life. It is recommended to test the sandwich bread several times along the shelf life.
  - Fresh products: assessed ideally within 2 hours of cooling.
  - In case of wholesale products that are found on supermarket shelves, assessment is done daily, from the day after baking until the end of the shelf life.
- Sandwich bread should be baked in the same tin (closed, open) and have the same weight.
- Slices presented to tasters should be sampled in the middle of the bread. The thickness has to be similar for all the samples assessed.

Depending on the countries, the sandwich bread can be eaten toasted. Therefore, we advise you to assess sandwich bread fresh and toasted. All texture attributes presented in this booklet can be used for a toasted bread.

A majority of words and protocols given in this booklet can easily be used for small size products, such as buns...



## Shared experiences



# APPEARANCE

The first factor to be assessed when tasting bread is its appearance.

The assessment is made in 3 stages: the appearance of the whole loaf, then that of the crust, ending with the examination of the crumb of the sliced loaf.



Michel  
SCHRÖDER

Technical Advisor at BEKO,  
Bakery distributor,  
Holland

**"In Holland, you can find very different types of sandwich bread depending on the area. In the North, you'll meet whiter, softer and less baked bread while in the South the sandwich breads are more coloured and baked.**

*Our market is influenced by trends: people buy a bread because they grew up with it. Probably every Dutch child have already eaten once a cheese sandwich after school. Nowadays, it's sometimes also about a healthy diet, a lot of fibers and less salt. Consumers are willing to pay good money for it.*

*Another particularity is that you will always find gluten added to the flours in our breads. It's important that this kind of bread equals the volume of white bread.*

*A good sandwich bread has to have a soft, homogenous and dense crumb: we like to spread marmalade, peanut butter, chocolate sprinkles... so it is an important criteria.*

*Dinner is the main course in the Dutch culture. Lunch is more like a 'quick meal', which should be ready in approximately 30 minutes. Usually consumers prepare their sandwich at home for themselves and their children. The size of the slice is very important because it has to fit perfectly in their square lunch box.*

*Dutch people buy it most of the time sliced. They usually don't cut the bread themselves at home. They buy bread once or twice a week and generally take 2 or 3 breads at a time. So if they buy their sandwich bread on Monday, they expect it to still be fresh on Wednesday.*

*For good preservation of product texture, they place the bread in a plastic bag in which the crumb has to stay fresh and soft. That's the reason why we add improvers.*

*We are very proud of our high quality sandwich bread!* **"**

# Appearance /general appearance



Expert  
vocabulary



**Spontaneous comments by experts**



Consumer  
vocabulary

• Uneven, split tin, bloomer, square, tin, even, well risen, well formed

• Ripple slicing, good shape, nice-looking, clean cut

• Torn, flat topped, split tin, crust lifted, rounded top

• Collapsed, well raised

• Flat topped, square, voluminous, rounded top

• Thick cut, thin, unsliced, toastie

# Appearance /appearance of crust



Expert  
vocabulary

e.g.  
**GOLDEN**

e.g.  
**BROWN**

• Intensity of crust colour  
Pale → Dark



• Thickness of crust  
Thin → Thick



Consumer  
vocabulary

• Under-baked, pale, clear, golden, brown, dark, burnt

• Clear, dark

• Uneven, even, homogeneous

• Smooth (varying degrees), uneven surface, rough, flaky

• Thin/thick (varying degrees)

# Appearance /appearance of crumb



Expert  
vocabulary

• Crumb colour	e.g. BEIGE/ CREAM	e.g. YELLOW
• Intensity of crumb colour		
Pale		Dark
• Evenness of crumb colour		
Uneven		Even
• Presence of inclusions		
No inclusions		Many inclusions
• Evenness in size of crumb cells <small>Examine the crumb cells in the slice: are they all the same size or different sizes?</small>		
Uneven		Even
• Average size of crumb cells		
Small		Large
• Depth of crumb cells <small>Place a slice of 2 cm thick in front of a light: the more light passes through, the deeper volume of the crumb cells</small>		
Shallow		Deep



Consumer  
vocabulary

- Shiny, white, beige, yellow, brown

- Clear, dark

- Uneven, even, homogeneous

- Speckled, spotted, streaky, swirly, flecked, protusions, grains

- Holes (few/many, small/large), air bubbles (small/large)

- Dense, tight, fine, light
- Aerated crumb, open crumb structure, open texture

- Dense, compact, transparent, light, aerated crumb, large air bubbles/holes

# Appearance Illustration

## Grain sandwich bread

### Formula

High protein bread flour	2 000 g	100 %
Water	1100 g to 1300 g	55 % to 65 %
Salt	40 g	2 %
Fresh yeast (high sugar dough)	80 g	4 %
Sugar	100 g	5 %
Butter	100 g	5 %
Seeds	300 g	15 %
Standard bread improver		
<b>TOTAL DOUGH</b>	<b>3 720 g to 3920 g</b>	

### Process

Type of mixer	Spiral
Mixing	3 min slow speed + fast speed until developed
Bulk fermentation	5 min at ambient temperature
Dividing*	740 g
Shaping**	Rolling
Final proofing	~ 120 min at 32°C
Baking	~ 45 min at 210°C

\* divide the dough in two: one piece of 340 g and one piece of 300 g in which you add 100 g of seeds.

\*\* put the dough with the seeds on top of the other dough, slightly press both pieces together and shape so that the seeds are found in the center. Place the shaped dough into the mold.



golden crust

Rustic appearance

Pinkish grey crumb

Rustic appearance

Pinkish grey crumb

Thick & golden crust

Rustic appearance

Rustic

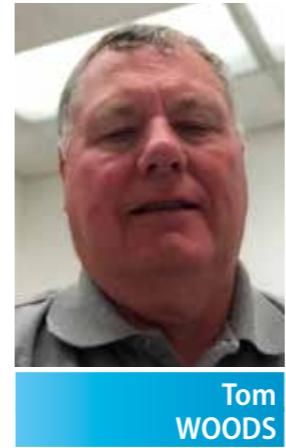
Pinkish grey crumb

# SMELL

A very important sense which, together with appearance, represents an important part of the product characteristics. The smell of the loaf will entice us to eat it or not!



## Shared experiences



Tom  
WOODS

Senior Vp Manufacturing,  
Lewis Baking Company,  
U.S.A.



“ Sandwich bread is used for toast and French toast at breakfast. Sandwiches for lunch and can be eaten plain or buttered at dinner. The products put in sandwich bread is limited only by imagination! Toasted cheese, peanut butter/jelly, ham, bologna, or sliced tomatoes and mayo all make great sandwiches...”

Sensory assessment could come from several departments:

- Quality: the shelf life of sandwich bread is somewhere around 12 days from bake date.
- If the goal is to match a competitor's product, R&D, production, and even marketing could be involved.
- Production: being a production guy, it is important to formulate a product that can be made consistently at high speed. This entails a formula that has tolerance and can be duplicated day to day.

Sandwich bread is typically sliced thinner than open top bread making it great for sandwiches using 2 slices.

The inside of the bread should be white with a tight grain.

A good loaf of sandwich bread is square on top with straight sidewalls.

The color of the bread should be similar on top, side and bottom. A golden brown color with no burnt aroma is desired. French toast sandwich can be made using some turmeric to give a yellow color.

The smell should be slightly yeasty not burnt.

Taste should be slightly sweet with a pleasing yeasty flavor.

Sandwich bread can also be made using some whole wheat, raisin, rye, or even bulgur wheat.

The crumb should be resilient and slightly moist. If the sandwich bread is to be used for French toast, how well does the bread hold together and handle a batter? French toast sandwich can even have some cinnamon added or swirled for extra flavor!”

# Smell

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



## Expert vocabulary

• Acetic, vinegar smell		<b>RECIPE</b> ✓ 5 g sandwich bread crumb ✓ 1,5 g cider vinegar
• Alcohol smell		<b>RECIPE</b> ✓ 6 g sandwich bread crumb ✓ 2 spray of ethanol solution (70 %)
• Almond smell		<b>RECIPE</b> ✓ 5 g sandwich bread crumb ✓ 1 drop benzaldehyde
• Cereal, bran smell		<b>RECIPE</b> ✓ 5 g wholemeal sandwich bread ✓ 5 g whole wheat flour ✓ 4 g water
• Dairy/butter smell		<b>RECIPE</b> ✓ 5 g sandwich bread crumb ✓ 4 g melted butter (microwave)
• Fatty smell		<b>RECIPE</b> ✓ 5 g sandwich bread crumb ✓ 3 g margarine
• Fermented smell		<b>RECIPE</b> ✓ 4 g sandwich bread crumb ✓ 0.2 g deactivated yeast ✓ 1 g water
• Fruity smell		<b>RECIPE</b> ✓ 5 g sandwich bread ✓ 1 chopped prune
• Hazelnut smell		<b>RECIPE</b> ✓ 5 g sandwich bread ✓ 2,5 g hazelnut powder ✓ 3 g water



## Consumer vocabulary

• Sour, acidic, acetic, vinegar
• Alcohol, wine, plasticine
• Almond, walnut, nutty
• Cereals, branny, rustic, corn
• Seeded, grainy
• Dairy, buttery, creamy, brioche-like, rich
• Oily, frying oil, fatty, margarine
• Cheesy, rancid
• Yeast, sweaty, fermentation, fresh bread
• Fruity, fermented fruit, prune, raisin
• Nutty, popcorn, walnut



## Expert vocabulary

• Malty, roasted smell		<b>RECIPE</b> ✓ 5 g toasted sandwich bread ✓ 5 g coffee
• Pungent smell		<b>RECIPE</b> ✓ A pinch of calcium propionate rubbed on the top of your hand
• Rye smell		<b>RECIPE</b> ✓ 10 g of 90 % rye sandwich bread
• Sourdough smell		<b>RECIPE</b> ✓ 5 g sandwich bread ✓ 3 g Crème de Levain ✓ 7 g water
• Spicy smell		<b>RECIPE</b> ✓ 5 g of sandwich bread ✓ 5 g of wheat flour ✓ A small pinch of mixed spices (cinnamon, cumin, cloves, coriander) ✓ 4 g of water
• Wheat smell		<b>RECIPE</b> ✓ 5 g sandwich bread ✓ 5 g flour ✓ 4 g water
• Yeast smell		<b>RECIPE</b> ✓ 5 g sandwich bread crumb ✓ 2 g dried yeast ✓ 2 g fresh yeast
• Spontaneous comments by experts		



## Consumer vocabulary

• Roasted crust, toasty, malty, grilled, burnt
• Caramel, coffee
• Chemical, tangy, tingling, preservative, metallic
• Pungent, sour
• Rye, honey
• Sourdough, sour, vinegary, fermentation
• Spicy, coriander, vanilla, cumin, curry, mix of spices, ginger bread
• Floury, wheat, mild
• Bland, plain, stale
• No smell, little/low smell
• Yeasty, musty, fermented
• Homely, rustic, farmhouse
• Enticing, appealing, flavoured smell



# Smell

Illustration



## Borodinski (bread from Russia)

Formula	Boiled flour	Dough	%
Rye flour	1 300 g		100 %
Strong flour		700 g	100 %
Water	2 600 g	400 g	150 %
Salt		40 g	2 %
Starter LV4 *		600 g	30 %
Malt	20 g		1 %
Coriander seeds	3 g		0,2 %
Fresh yeast		100 g	5 %
Gluten		80 g	4 %
Sugar		100 g	5 %
Standard bread improver			

\* according to the recommended recipe

Process	Boiled flour	Dough
Type of mixer	Spiral	
Temperature of water	Boiling	35°C
Mixing	Put all the ingredients in the mixer: 5 min slow speed + 2 min fast speed	
Bulk fermentation		
Dividing		850 g
Shaping		
Final proofing	Rest until reaching 30°C	~ 40 min at 30°C
Baking		~ 1 h at 250°C/200°C with fog

Buckwheat & smoked aroma  
Hazelnut & Hazelnut &  
cereal smell smoked aroma  
Buckwheat & cereal smell  
cereal smell  
Hazelnut & cereal smell

# TEXTURE

First perceived initially by the sense of touch with our hands, then in the mouth, the texture of a loaf is an essential factor.

The taster must take into account the entire bread's texture. Not forgetting the texture of the crumb: is the bread moist/fresh, tacky or dry?

The crust's texture is less crucial in the texture assessment of a sandwich bread.



## Shared experiences

**“ Sandwich bread is a “pleasure product” in Lebanon. Lebanese bread consumers use sandwich bread filled for lunch as well as for snacking. Therefore, the texture should be soft: this is the most important criteria after the aspect and the taste of the product. The preservation of the texture and organoleptic qualities along the shelf life is fundamental to the consumer. He needs to be sure that the product he bought will stay the same! ”**



Darine  
KEHDY KAZAN

Technical Manager at  
Wooden Bakery SAL,  
Lebanon

Last year, Wooden Bakery launched the “chia sandwich bread”, which had a great success because of a good balance between high fiber content and highly melt-in-the-mouth texture. The perfect combination between sensory and healthy properties!

Wooden Bakery owns a quality control department which ensures, on a daily basis, that the products of the range meet their standards.

The company also follows recognized food safety standards (Libnor, HACCP, Codex....) in order to provide irreproachable hygiene and the complete safety of its food products.

The use of sensory analysis when developing a new product enables to measure if it meets consumer expectations : by studying the most important parameters such as crust colour the open structure of the crumb, its firmness, its smell, and of course the taste. ”

# Texture /touching the bread



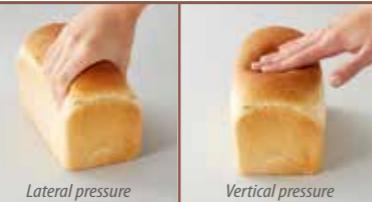
**Expert vocabulary**

- **Resistance to pressure**

Assess the behaviour of the bread when the surface is compressed (lateral/vertical pressure)

Hard

Soft



**Consumer vocabulary**

- **Resistant, firm, hard, tough, not firm, soft**

# Texture /touching the crumb

• <b>Resistance to pressure</b>	
Assess the behaviour of the slice when the surface is pressed	
Hard, firm	Soft, tender
• <b>Resistance to deformation</b>	
Assess the behaviour of the product when the sides of the slice are squeezed between the thumb and the finger. Is it easy to deform? Does it come back rapidly to its initial shape?	
Rigid, not flexible	Easily deformable, flexible
• <b>Crumb moisture</b>	
Assess crumb moisture by gently pressing the slice on both sides between thumb, index and middle finger. A rough sensation under the fingers is a sign of dryness. A persistent sensation of moisture under the fingers shows important humidity	
Dry	Moist
• <b>Dry halo</b>	
Assess how large is the dry halo by touching the peripheric area of the slice	
Large: all the slice is dry	No halo or very thin

• <b>Tough, compact, dense, light, fluffy</b>	
---	--

• <b>Firm, hard, resistant, soft, easy to tear, pliant, tactile</b>	
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• <b>Dry, brittle, crumbly, cardboard-like, humid, moist, sticky, tacky</b>	
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• <b>Dry, humid, moist</b>	
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# Texture /touching the crumb



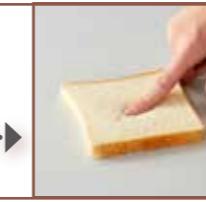
**Expert vocabulary**

- **Elastic texture**

Firmly press the center of the slice with one finger, then assess the crumb's ability to spring back to its original shape

Very elastic: the crumb immediately springs back

Gummy, the finger mark remains visible

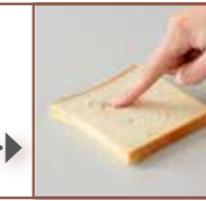


- **Spreadability**

Gently pass the finger on the crumb three or four times to imitate the action of a knife

Not spreadable

Spreadable



- **Foldability**

Assess the behaviour of the product when the slice is folded in two

Not foldable

Foldable



- **Crumb Coarseness**

Gently rub the center crumb against the tip of the nose and access the coarseness of the grain

Rough

Smooth

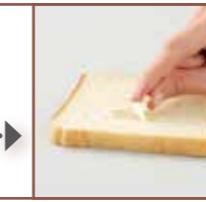


- **Crumb length**

Take a piece of crumb in the center of the bread (top part) and pull very gently, trying to form a filament as long as possible

"Short crumb": crumb does not stretch at all: the piece is very small

"Long crumb": the piece is long

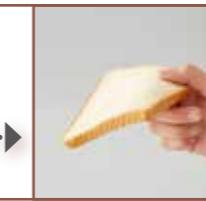


- **Slice cohesion or stiffness**

Assess the behaviour of the slice when taking it by the corner in your hand

The slice bends

The slice stays stiff



**Consumer vocabulary**

- **Elastic, springy, gluey, gummy**

- **Sticky, readily buttered**

- **Pliant, flexible, supple**

- **Heterogeneous, grainy, coarse, granular, gritty, homogeneous, smooth**

- **Pliant, supple, straight, rigid, stiff**

# Texture /eating the crumb



Expert  
vocabulary

- Resilience in mouth

Assess the resilience of a piece of crumb when biting into it

Firm

Tender

- Melt-in-the-mouth/absorption

Place a piece of crumb against the palate and let it dissolve whilst assessing the amount of saliva and time required for the crumb to decrease in volume

Hard to dissolve:  
lot of saliva required

Melt-in-the-mouth: dissolves quickly with a small amount of saliva. E.g.: candy floss

- Crumb moisture

Place a piece of crumb in the mouth and assess the level of moisture

Dry mouth-feel

Moist/fresh mouth-feel

- Bite length

Assess how long you need to chew before you can swallow

Long bite

Short bite



Consumer  
vocabulary

- Chewy, tough, rubbery, elastic, spongy, resilient, fluffy, tender

- Chewy, melts-in-the-mouth, cotton wool, fondant

- Dry, crumbly, makes you thirsty, humid, moist, tacky, fresh

- Chewy, tender, soft, melts-in-the-mouth, fondant

# Texture /eating the crumb



Expert  
vocabulary

- Sticky texture

Assess the stickiness of a piece of crumb between the teeth. Chew the piece of crumb 10 times, by gently biting up and down to assess the stickiness (whether or not a film is created between the jaws or adheres to the teeth)

Non-sticky

Sticky

- Mochi texture

Forms quickly a paste without being sticky to the teeth

Non-mochi

Mochi

- Dough-like texture

Assess how cohesive the texture of a piece of bread is after melting in your mouth

Sandy

Dough-like

- Crusti-soft texture\*

Bend a piece of crumb in 2 and bite into, evaluate the texture. A crusti-soft texture is characterised by a thin crusty film and a thick soft part below

Non-sticky



Sticky



Consumer  
vocabulary

- Sticky, tacky, glue-like, teeth clogging, stodgy

- Fibrous, visquous, slimy, glue-like, gluey

- Stodgy, dough-like, doughy, pasty, cohesive, forms a ball

- Crusty, soft

\* only for toasted breads

# Texture

Illustration



Supple  
Mochi & Supple  
**Melt-in-the-mouth**  
Supple Mochi & Melt-in-  
the-mouth  
Mochi & Supple  
Melt-in-the-mouth  
Mochi & Supple

## Laminated sandwich bread

### Formula

Wheat bread flour	2 000 g	100 %
Water	1 100 g to 1 200 g	55 % to 60 %
Salt	40 g	2 %
Fresh yeast (high sugar dough)	80 g	4 %
Sugar	100 g	5 %
Butter	100 g	5 %
Standard bread improver		
<b>TOTAL DOUGH</b>	<b>3 420 g to 3 520 g</b>	
Folding in butter	120 g	6 %

### Process

Type of mixer	Spiral
Mixing	3 min slow speed + 6 min fast speed
Bulk fermentation	At cold (+4°C) until consistency
Dividing	600 g
Folding in butter	One double turn and one simple turn
Shaping	3 strands rolled and placed side by side in the tin
Final proofing	~ 120 min at 32°C
Baking	~ 45 min at 210°C



# TASTE

The taste of bread is a major factor in determining a purchase, especially a repeat purchase.

Our taste buds tell us about our like or dislike of the bread and its aromatic character.



*In terms of flavours, my preference goes to malted, seeded, granary loaves because of the nutty and oat flavours.*

*Another reason for me preferring this type of breads, is that they often have a more open structure, they are less dough-like in the mouth. You don't end up with your meal too heavy. I'm also attracted by products which present a rounded top and are well-developed.*

*For me, it refers to less mass production and more craft product. On the contrary, square shaped and flat topped loaves suggest to me value brands that can be a bit doughy.*

*As for my choice in slice thickness, I buy pre-wrapped or craft product depending on what I will do with it and on how quickly I am likely to use it.*

*When I know that I'm not going to use it rapidly: I go for pre-wrapped. Shelf life is longer, due to a greater content of preservative. This kind of sandwich bread is also better after defrosting.*

*If I know that I will use the bread more quickly I choose a craft/in-store bakery loaf. I usually buy it unsliced to allow me to cut it to the purpose I'm looking for.*



**Kevin Alan  
SMITH**

English consumer  
from York, U.K.

## Shared experiences

**“** My purchase in sandwich breads are mainly guided by how I will use it: if it's for making a sandwich, I'd rather prefer a medium slice (like 10 mm thick) and if it's for eating toasted I choose a thicker slice (more like 15 mm).

# Flavour - crumb

Each expert attribute is illustrated by a reference bread.



## Expert vocabulary

• Acetic, vinegar flavour		<b>RECIPE</b> ✓ Sandwich bread made with highly acetic sourdough
• Alcohol flavour		<b>RECIPE</b> ✓ Slice of sandwich bread with a spray of ethanol
• Almond flavour		<b>RECIPE</b> ✓ Sandwich bread made with bitter almond extract
• Cereal/bran flavour		<b>RECIPE</b> ✓ Sandwich bread made with wholemeal flour
• Dairy/butter flavour		<b>RECIPE</b> ✓ Sandwich bread made with 10 % butter
• Fatty flavour		<b>RECIPE</b> ✓ Sandwich bread made with 10 % margarine or shortening
• Fermented flavour		<b>RECIPE</b> ✓ Over-yeasted sandwich bread
• Fruity flavour		<b>RECIPE</b> ✓ Sandwich bread made with rye and added live rye sourdough



## Consumer vocabulary

• Sour, vinegar, tingling, tangy

• Alcohol, wine

• Almond, walnut, nutty

• Cereals, branny, wholemeal, oaty, corn  
• Seeded, granary

• Dairy, buttery, brioche-like, rich

• Frying oil, fatty, margarine  
• Rancid, cheesy

• Yeasty, cheesy, fermentation

• Fruity, fermented fruit, prune, raisin



## Expert vocabulary

• Hazelnut flavour		<b>RECIPE</b> ✓ Sandwich bread made with praline
• Malty, roasted flavour		<b>RECIPE</b> ✓ Sandwich bread with added malt
• Pungent flavour		<b>RECIPE</b> ✓ Sandwich bread with 0,5 % calcium propionate
• Rye flavour		<b>RECIPE</b> ✓ Sandwich bread made with rye flour
• Sourdough flavour		<b>RECIPE</b> ✓ Sandwich bread made with acetic/lactic sourdough
• Spicy flavour		<b>RECIPE</b> ✓ Sandwich bread made with small amounts of several spices
• Wheat flavour		<b>RECIPE</b> ✓ Under-yeasted sandwich bread (short fermentation)
• Yeast flavour		<b>RECIPE</b> ✓ Over-yeasted sandwich bread (long fermentation)



## Consumer vocabulary

• Nutty, walnut

• Baked, malty, roasted, grilled, coffee, caramel

• Tingling, tangy, pungent, chemical, preservative, metallic

• Rye, honey

• Sourdough, vinegar

• Spicy, coriander, vanilla, cumin, curry, mix of spices, ginger bread

• Floury, wheat, uncooked, doughy  
• Slightly flavoured, bland, plain, tasteless, cardboard, stale

• Yeasty, mushroom, earthy, musty, bready

# Taste - crumb



## Expert vocabulary

- Acidic taste

Slightly/non acidic      Highly acidic

**HIGHLY ACIDIC RECIPE**  
✓ Sandwich bread with a pH around 4

- Salty taste

Slightly/non salty      Very salty

**VERY SALTY RECIPE**  
✓ Sandwich bread made with 2,4 % salt

- Sweet taste

Little/no sugar      Very sweet

**VERY SWEET RECIPE**  
✓ Sandwich bread made with 5 to 10 % sugar

- Umami taste

Slightly/  
non-umami      Very umami

**VERY UMAMI RECIPE**  
✓ Sandwich bread made with 0,15 % sodium monoglutamate

- Spontaneous comments by experts



## Consumer vocabulary

- Sour, vinegary, tingling, strong after-taste, acidulous, tangy

- Bland, salty, savoury

- No sugar, sweet

- Sweet/salty

- Bitter, taint, metallic
- Tasteful
- industrial, supermarket/mass consumer bread

# Taste Illustration

## Green tea (macha) sandwich bread

### Formula

High protein bread flour	2 000 g	100 %
Living liquid sourdough	100 g	5 %
Fresh yeast (high sugar dough)	50 g	2,5 %
Green tea (macha) in powder *	30 g	1,5 %
Sugar	200 g	10 %
Water	1 120 g to 1 300 g	56 % to 65 %
Butter	200 g	10 %
Salt	40 g	2 %
Standard bread improver		
<b>TOTAL DOUGH</b>	<b>3 740 g to 3 920 g</b>	

\* remove half of the dough at the end of the mixing and add the 30 g of green tea (macha) powder to the rest of the dough and mix until uniform.

### Process

Type of mixer	Spiral	Oblique axis
Mixing	4 min slow speed + 5 min fast speed	5 min slow speed + 12 min fast speed
Dough temperature	24°C +/-1°C	
Bulk fermentation	10 min	
Dividing	200 g x 2	
Shaping*	2 doughs together	
Final proofing	~ 90 min at 28°C	
Baking	~ 25 min at 210°C	

\* for the shaping: put a dough without the tea with a dough containing the tea, twist and put in the tin.



Buckwheat & smoked aroma  
Hazelnut & Hazelnut &  
cereal smell    smoked aroma  
Buckwheat & cereal smell  
cereal smell  
Hazelnut & cereal smell

# Shared experiences



Hemaka  
NIYOMNAITHAM

President Bakery  
Sensory Team,  
Thailand

This interview was completed with the support of Mr. Apichart Thammanomai, Managing director and Ms. Panida Prayottawee, Director and Senior Production Manager.

**"A sandwich bread is a bread for making a sandwich! 2 slices of bread with a filling like ham & mayonnaise, ketchup with either cheese or margarine and jam. Regarding the sandwich bread shape, in Thailand, an open top bread style is not a traditional sandwich type. The traditional style can be either triangle or square shaped. It can also be whole wheat bread, or grains. Appearance is important, but the most important of all is that the texture has to be soft."**

**"Regarding the flavours, Thai people like milky and buttery flavoured products, with strong buttery smell and sweet taste!"**

Thai people are not familiar with sour taste in bakery products.

The shelf life is around 7 days, so that the use of preservative is required, especially because of hot/moist weather in Thailand. Hopefully, sensory analysis will provide a direction to avoid or reduce the use of chemical preservative.

Let me tell you a success story to illustrate this: around 3 years ago, we worked on the development of a new product; the objective was to match the sensory expectations of the Thai customers: very soft product and butter/margarine flavour. In the end, we launched the Royal bread: the product is 2 cm thick, with an open top shape, which

ensures that the texture is significantly softer. Also, we designed a more buttery flavour and a sweeter taste: it was a great success and the product is still working well.

Actually, President Bakery's core product is a sliced bread. However, we try to match our products to consumers' lifestyle and give them more value-added products. Recent trend is "convenience" and "health".

For the convenience concept, we try to improve our sliced bread which is served with large portion size, by launching more and more single portion products. This innovative product was first launched around 15 years ago. We managed to produce industrially packaged single slice bread topped with different toppings... This new product matched Thai consumer habit! This product is still a success and we have developed new toppings. The most famous is the kaya custard one, and our latest product is corn milk flavoured. The success of this product could be due to the taste and the healthy image of corn milk.

For the health trend, we develop all kinds of whole wheat and grain breads. The most recent products are Royal Whole Wheat and Royal 12-Grains, especially for consumers concerned by their health.

**"In food, the key driver is being "delicious." Sensory analysis helps both determining the definition of a "delicious product" for consumers as well as integrating the parameters in the development of a good quality or premium product."**

**"Therefore, sensory analysis is not only a guideline but also a fundamental step of the development process. //**



# SANDWICH BREAD

## *in words*

### A GLOSSARY OF SENSORY TERMS TO DESCRIBE SANDWICH BREAD

Renowned for its sensory expertise, Lesaffre has developed a specific glossary of sensory attributes adapted for sandwich bread, with the help of U.S. Wheat Associates. This tool is used to combine two approaches: the more subjective consumers approach and the more objective angle from the experts.

Browse this booklet, sample and enjoy!



Already published :  
**"Le pain" in words**, to describe crusty bread.



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PHOTOGRAPHS: Studio TEKHNE