

 **SMELL**

 **SOUND**

 **TEXTURE**

 **APPEARANCE**

 **TASTE**



PIZZA *in words*



A GLOSSARY OF SENSORY TERMS TO DESCRIBE PIZZA





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The idea behind the project

Lesaffre now offers, in collaboration with Leo Spizzirri, the founder of The North American Pizza & Culinary Academy, a booklet devoted to the organoleptic properties of the yeast leavened pizza. This is a versatile product due to its simple formulation, ease of dough manipulation, and variety of toppings. Pizza comes in an infinite variety of forms, shapes and sizes around the world. It is extremely popular and easily adaptable to meet diverse tastes and preferences of the customer.

Leveraging its baking and sensory expertise, Lesaffre and The North American Pizza & Culinary Academy wish to provide a reference to bakers and pizza makers that include terms and assessment protocols, as well as consumers vocabulary. As in previous editions, the descriptors should be adapted accordingly to the type of pizza under consideration. We shall focus specifically on the pizza base crust without going further into toppings.

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 things organisms. In close collaboration with its clients, Lesaffre confidently innovates, in order to better nourish and protect the planet.

A native of Chicago, **Leo Spizzirri** brings a lifetime experience of dough rheology and high-speed manufacturing to the pizza and baking industry. His past responsibilities have made him the go-to reference for dough and pizza innovations leading, in particular, to his involvement in the development of major national brands across the United States and Canada.



A craft baker and pizza maker by trade, Leo Spizzirri completed his studies at the oldest pizza school in the world, the Scuola Italiana Pizzaioli in Venice, Italy.

Leo Spizzirri is the co-founder and Maestro Istruttore of the North American Pizza & Culinary Academy located in Lisle, Illinois. His cutting-edge school boasts a climate-controlled dough laboratory, a baking room with 7 different types of oven and a theatre style show kitchen!

This booklet was produced with the help and support of Giuseppe Esposito, Nestlé Italy, to whom we are grateful for his contribution of the large number of consumer terms.

EDITORIAL

by Leo Spizzirri



A product of Europe, and almost certainly of Italy, although its precise origins have been the subject of much controversy, the pizza is a successful export that now enjoys a presence on every continent. It is generally found in the form of a rounded dough base garnished with a topping...

As, arguably one of the world's favourite foods, the pizza is available in a plethora of different forms: the toppings are naturally adapted to local tastes, but the base remains a common denominator in all pizzas. Hence the importance of quality ingredients. However, it is necessary to cater to the clearly identified tastes and expectations of pizza lovers when it comes to crust thickness, softness or crunchiness.

Regardless of the different consumer habits and customs; whether the pizza is consumed on the premises, taken away, chilled or frozen for re-heating at home; or sold in rolled dough form for home-baking; a meticulous knowledge of the production process is required to guarantee top-quality results.

Pizza is widely consumed around the world, well beyond Italian borders. In 2013, it is thought that in excess of an estimated 30 billion pizzas were thought to have been consumed.

Americans are generally considered to be the biggest consumers, munching their way through some 13 kg/year/inhabitant.

In traditional consumer countries, the pizza is even attempting a foray into the dessert niche with innovative sweet variations, including chocolate toppings; or in more refreshing basil, mint, or citrus fruit versions. In another novel bid for expansion, the humble pizza is currently trying to capture the United States breakfast market!

As a constantly evolving, highly specialised product, requiring technical expertise and acclaimed worldwide, the pizza undergoes close scrutiny from a sensory angle in this booklet, in an effort to attribute key quality descriptors to this go-to product.



About Sensory Analysis

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

- **Marketing**

Development and validation of product concepts, analysis of competition

- **Research & Développement**

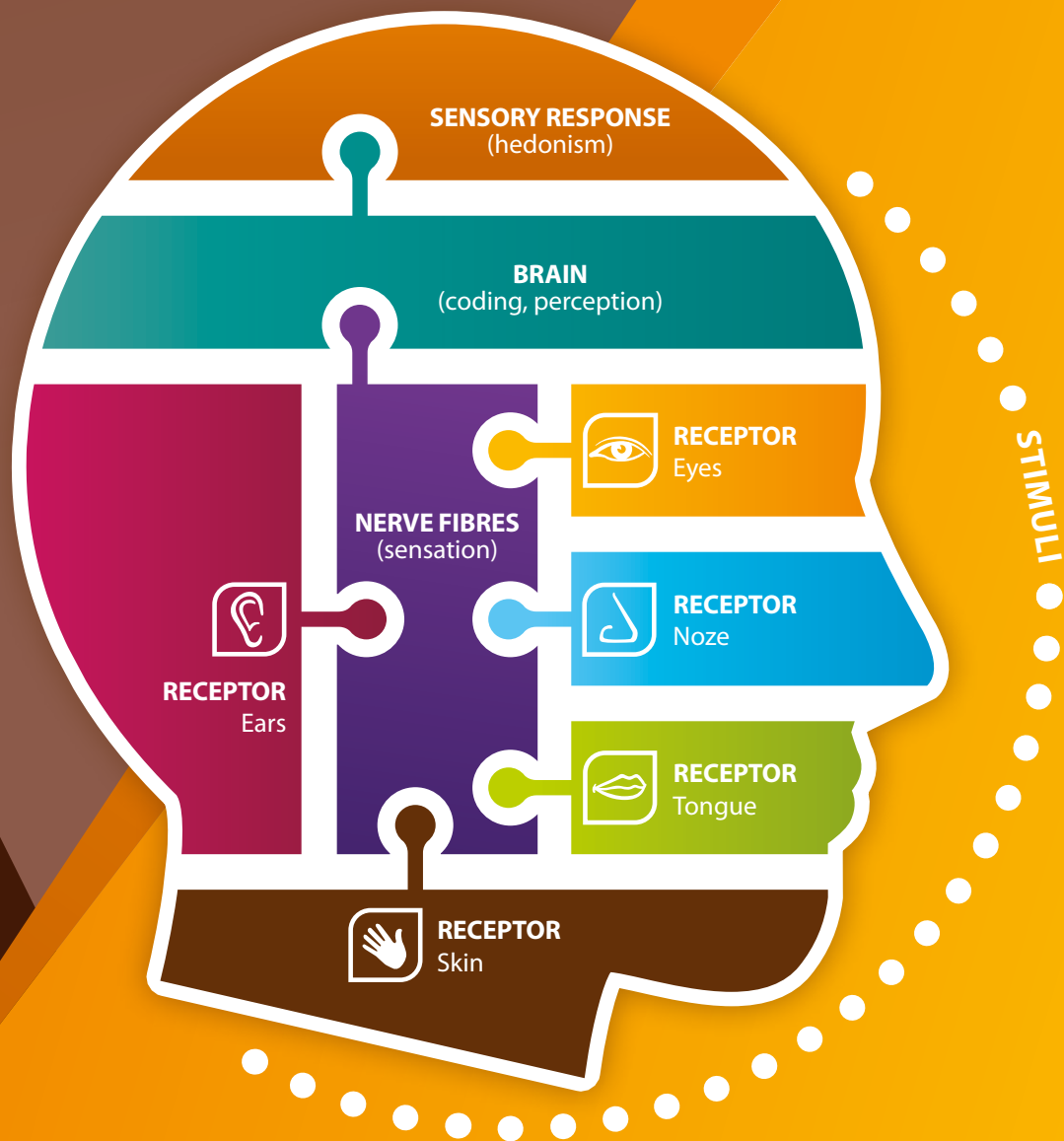
Formulation and process optimisation

- **Quality**

Follow-up of raw materials, ingredients, finished products...

This technique involves a human panel highlighting and describing the organoleptic properties (appearance, smell, sound, texture, taste) of a product.





The aromas released in the mouth when eating a pizza develop and travel to the nose via the back of the throat, a route described by specialists as the retronasal route. Such aromas are not to be confused with those perceived when smelling the product (scent and smell). The simultaneous perception of tastes, smells and mouth-feel sensations experienced during tasting is collectively known as “flavours”.

Two sensory approaches



Expert
vocabulary



Consumer
vocabulary

Test

Objective analysis of various sensory criteria or attributes used as a measuring instrument

Consumers' assessment of a product's acceptability

Panel

Expert: 10 to 15 people having undergone 20 hours' specialist training and monitored to regular performance tests

No training, 60 people minimum

Product assessment and product presentation

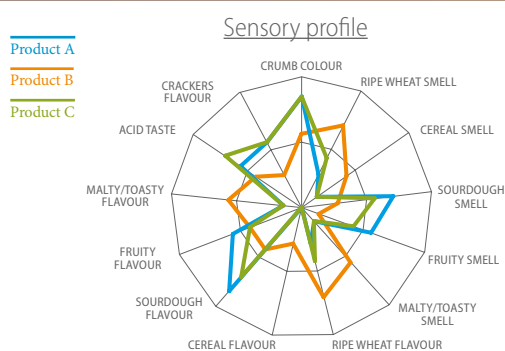
Scoring scale with identified criteria (attribute with precise definition)



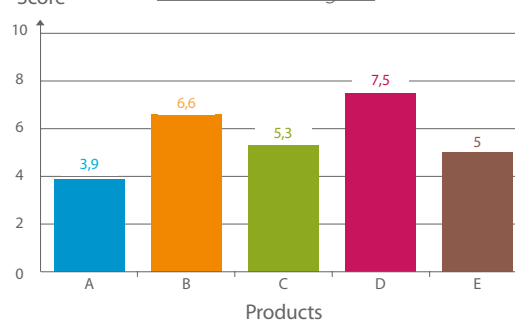
- Allocation of score on assessment scale
- Reasons for preferences (hedonism: Whether «liked/disliked»)



Typical results



Assessment histogram



Typical conclusion

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

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

The preferred product is the...

General tasting practices

Tasters are required to :

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

The products should be :

- Presented as a blind sample (coded samples).
- Presented under the same conditions (temperature, amounts and degree of baking).
- If compared, assessed at the same stage of preservation: i.e. with the same degree of shelf life.
- Temperature of pizzas during tasting: for the purposes of comparison, it is essential for the pizzas to be tasted at the same temperature, and always hot, in order to replicate typical consumption patterns. The recommendation is 4 to 6 minutes after removal from the oven.
- In the case of fresh or frozen pre-wrapped pizzas, the recommendation is to test them several times throughout their shelf-life and until their best before date. The reheating recommendations should be followed.
- The assessed pizzas should be presented at the same or an identical degree of baking.
- Round pizzas should ideally be cut into 8 (large), or 6 (medium) slices to be able to assess similar pieces.



Pizza is highly sensitive to cooling. It can therefore be useful, if the conditions so permit, to assess the product's texture whilst hot and after cooling. The current pizza reference document is a detailed tool for use in assessing the product base, without the topping as such (excluding categories such as overall smell and general aroma of pizza), given the infinite variety of toppings that are possible.

Furthermore, in addition, most of the concepts presented can be used to evaluate similar types of product, such as focaccia, ciabatta, and Flammenküche.



APPEARANCE

The first factor to be assessed when eating a pizza is appearance.

The assessment occurs in 3 stages: the overall appearance of the pizza, then the crust, and concluding with an examination of the interior of the dough.



Shared experiences



**Pasquale
CICCI**

Grocery store keeper,
Italy



“ I hope that pizza, especially the Napoletana, will continue to survive the test of time, unchanged in its traditional, original form, because it’s just perfect the way it is! ”

I eat pizza whenever I can, it’s my favourite meal, I easily have it 4 times a week! I’m happy to eat pizza at home, take it away, or have one out, with friends, or at a restaurant.

I make my own pizza at home, but I must admit that when I want a really good quality pizza, I go to a good pizzeria.

I’m lucky enough to live in Naples, so I can easily find excellent shops selling top-quality tasting products.

Eating pizza for me is all about enjoying good company!

It’s a great opportunity to get together with the family and friends and create an event around this traditional Italian dish.

What constitutes a good pizza for me is a nice golden crust, not too pale, not too dark, quite well risen with a puffy rim.

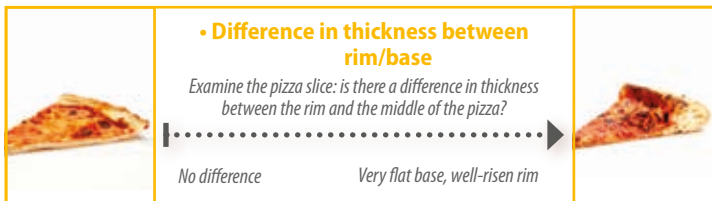
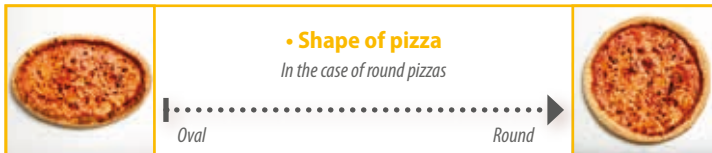
My all-time favourite is the traditional pizza Napoletana, with a thin crust to get that fine crispy texture, but it must be well risen at the sides!

As for the topping, I have a real weakness for provola/pepper, really hot, it’s delicious. Also, I think it’s an absolute crime when a pizza is served cold or lukewarm ... a good pizza should always be eaten really hot, otherwise you don’t get to enjoy the true taste of the dough, or the special texture. ”

Appearance/General



Expert vocabulary



• Spontaneous comments by experts



Consumer vocabulary

- Even shape (varying degree)
- Round, rounded
- Lovely

- Even shape (varying degree)
- Round, rounded

- Thin, flat, compact / thick, puffy, risen, voluminous
- Lovely

- Thin, flat, compact / thick, puffy, risen, voluminous
- Lovely

- Industrial/artisanal, traditional, hand-made
- Unappetising / appetising, appealing

Appearance/Crust



Expert
vocabulary

• Colour of crust (shade)

e.g.
GOLDEN

e.g.
BROWN

• Intensity of crust colour



• Evenness of crust colour

Assess the colour differences on the rim and top of the pizza

Very patchy (black areas and pale areas) Even (uniformly pale, or uniformly pale chestnut, for example)



• Evenness of crust's surface / Presence of blisters on surface

Examine the rim: are there air bubbles?

Puffy, uneven, bubbles

Smooth



• Presence of grits

Examine the rim and top of the pizza

No grits

Presence of grits over the entirety of the visible dough



• Presence of speckles

Examine the rim and top of the pizza

No speckles

heavily speckled dough (herbs, grains, pepper...)



• Thickness of crust

Examine a slice of the pizza.

Thin rim

Thick rim



Consumer
vocabulary

- White, pale, cream, yellow, coloured, golden, grey, reddish, brownish, brown, caramelised, chestnut brown, burnt, black, charred
- Dull, matt/glossy, oily

- Raw, unbaked, under-baked, pale, light, coloured, dark, over-baked, burnt, charred

- Uniform, even / uneven, patchy, speckles, dots

- Blisters (small to large), bubbles (small to large), lumpy, bumpy, puffy, coarse, rough, spikes (varying degree) / smooth (varying degree)

- Rough, gritty
- Traditional

- Uniform, patchy, speckled (varying degree), dots (varying degree), baked in open wood fire

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

Appearance/Interior of dough



Expert
vocabulary

• Colour of crumb

e.g
WHITE

e.g
BEIGE/
CREAM

e.g
GOLDEN

• Intensity of crumb colour



• Evenness of crumb colour



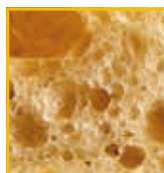
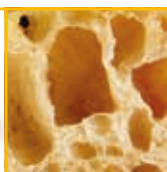
• Number of air-holes

Examine a slice of the pizza



• Average size of air-holes

Examine a slice of the pizza



• Regularity in size of air-holes

Examine a slice of the pizza



Consumer
vocabulary

• White, pale, cream, yellow, coloured, grey, caramel, brown

• Pale, light, coloured, dark

• Pale, light, coloured, dark

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

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

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

Appearance

Illustration

Flaky/rolled pizza

Recipe

Flour type 65	1000 g	100 %
Water (base temperature: 60°C)	500 g	50 %
Fresh yeast	40 g	4 %
Sunflower oil	30 g	3 %
Sugar	30 g	3 %
Salt	20 g	2 %
Butter for folding into dough	100/500 g	20 %

Process

Type of mixer	Spiral
Mixing	8 min on slow speed
Dough T°	25-26°C
Bulk fermentation	5 min
Dividing	1000 g
Pre-shaping	Smooth, light rounds
Lamination	38 cm / 25 cm rectangle
Cooling	60 min at 3°C
Lamination	1 double + 1 single
Cooling	60 min at 3°C
Shaping	"roulé raisin" type
Topping	Discretionary
Final proof	90 min / 32°C / 75% Hygrometry
Blocked fermentation	up to 8 hours at 4°C
Baking	8 min at 280°C (deck oven)



Aerated Cream
Blown-up Aerated
Cream Aerated
Aerated Cream



SMELL

The smell of a freshly-baked product has a strong power of attraction. The act of tasting begins when the smell first enters the consumer's nose... and then continues in the mouth.

Shared experiences



Yi Qing Ding

R&D
Feizi
Hangzhou
China

Bin Cheng

R&D Director
Margerita
Fuzhou
China



/// The Chinese market boasts a broad range of pizzas offering a variety of tastes and many more sensory attributes besides.

The American style pizza forms the core of the market, although the Italian type pizza segment is expanding, due to its nutritional merits. In the American style pizza segment, the Chinese have a preference for dough with an appealing colour and a soft texture, a good-quality sauce and an attractive topping.

Likewise, the Chinese preference in Italian style pizzas is for a good crust colour, but a crispy dough texture. The quality markers for this type of pizza are the type of olive oil and cheese used (parmesan, ricotta, etc).

N.B.: the Chinese have high standards for their pizza; as criteria for purchase include quality of topping (meat must be top-quality and generous, and vegetables brightly-coloured), as well as the price.

Innovation-wise, we have launched a pizza based on durian, as well as a salted egg yolk flavour pizza, both of which have had huge success.

A pizza may appear to be easy to produce, but don't be fooled by appearances! The production of a good pizza requires a thorough mastery of all the factors involved, from the choice of ingredients to the act of purchase on the retail premises, not to mention the entire production and baking process.

The most critical steps involved are the dough manufacture, choice of topping ingredients and the appropriate baking: the minimum baking temperature and short baking time are key to a perfect finished product.

In a nutshell, the most important factors prompting the consumer to buy one particular pizza in preference to another are: brand, price, taste and attractive topping! ///

Smell

Here, we come to the smell of the pizza dough. For optimum test results, break open the crust to smell inside. The hotter the pizza, the more intense the aromas reaching the nose. Each expert descriptor is illustrated by a reference that can be mixed in an opaque glass, and then heated in a microwave oven.

- For best results, when making up samples, add the ingredients in the order described (mixing thoroughly in the case of liquid ingredients)



Expert vocabulary

• Acetic, vinegary smell



RECIPE

- ✓ 2 g alcohol vinegar
- ✓ 8 g de pizza

• Alcohol smell



RECIPE

- ✓ 6 g pizza
- ✓ 2 squirts ethanol

• Bread smell



RECIPE

- ✓ 7 g flour T55
- ✓ 5 g water
- ✓ 8 g pizza

• Cardboard smell



RECIPE

- ✓ 8 g of 1 day-old pizza, little yeast, no fat

• Cereal smell



RECIPE

- ✓ 5 g wholemeal bread
- ✓ 3 g water
- ✓ 3 g wholemeal flour
- ✓ 3 g pizza

• Crackers/ grilled cheese* smell



RECIPE

- ✓ 2 g cheese-flavoured cracker
- + 7g water + 5 g pizza

• Fermented smell



RECIPE

- ✓ 0,2 g deactivated yeast
- ✓ 5 g pizza
- ✓ 1 g water



Consumer vocabulary

- Acidic, sourdough, yeast, tangy, spicy, peppery

- Acidic, alcoholic, strong

- Bread, fresh bread, ciabatta, wheat, brioche

- Cardboard, neutral, flour, floury, doughy, paper

- Cereals, bran, flour, grains, popcorn, wheat

- Crackers, biscuit, biscuity, cheese, grilled cheese, grilled

- Fermentation, ferment, fermented, yeast (fresh)

The descriptors are organized in alphabetical order.

- Solid ingredients, e.g. the pizza itself, should ideally be cut up into small slices for optimum release of the aromas.
- The pizza used for the sample bottles is a standard pizza recipe, baked without topping.
- Before smelling the samples, heat for 5 or 6 seconds in a household microwave oven.



Expert vocabulary

• Fresh yeast smell



RECIPE
✓ 2 g fresh yeast
✓ 2 g dried yeast ✓ 8 g pizza

• Herb*° aroma



RECIPE
✓ 1 small pinch mixed dried herbs
✓ 8 g pizza

• Malty smell



RECIPE
✓ 5 g liquid instant coffee
✓ 5 g over-baked pizza

• Melted cheese* smell



RECIPE
✓ 2 g Emmental
✓ 8 g pizza

• Oil*° smell



RECIPE
✓ 2 g neutral fresh sheep's cheese
✓ 8 g pizza

• Olive *° smell



RECIPE
✓ 3 g black olive juice
✓ 8 g pizza

• Open wood fire smell



RECIPE
✓ 2 g burnt pizza
✓ 5 g pizza ✓ 5 g water



Consumer vocabulary

• Fermentation, ferment, fermented, yeast (fresh)

• Herbs
• Types of herb (thyme, oregano, basil, etc...)

• Smoky, open wood fire, burnt, charred, grilled, toasted, popcorn

• Cheese, grilled cheese, rancid, fat
• Types of cheese (mozzarella, gorgonzola, etc...)

• Oil, oily, fried, fat, brioche, brioche-like

• Olive, oil

• Smoked, open wood fire, burnt, charred, grilled, toasted

Smell



Expert vocabulary

• Pancake batter smell



RECIPE

- ✓ 7 g flour T55
- ✓ 5 g milk
- ✓ 8 g pizza

• Pepper*° smell



RECIPE

- ✓ 1 small pinch ground pepper
- + 8 g pizza

• Sourdough smell



RECIPE

- ✓ 10 g flour T55
- ✓ 3 g de Crème de Levain (live sourdough)
- ✓ 7 g water

• Spicy* ° smell



RECIPE

- ✓ 1 small pinch mixed spices
- ✓ 8 g pizza

• Tomato* smell



RECIPE

- ✓ 2 g baked tomato puree
- ✓ 8 g pizza

• Other smells added by the topping

• Spontaneous comments by experts

*smells frequently exuded by the topping

°ingredients that can be added directly to the dough



Consumer vocabulary

- Pancake batter, flour, floury, dough, unbaked dough, brioche, brioche-like

- Peppery, tangy, spicy, acidic

- Spicy, tangy, peppery, sharp
- Types of spices (cumin, curry, etc...)

- Sourdough, tangy, acidic, metallic, spicy, peppery

- Tomato, acidic, sweet

- Vegetables, meat, herbs, onion/garlic, fish, cheese, fruits...

- Neutral, bland, little, no smell / aromatic, fragrant, strong, intense
- Classic, traditional, artisanal

Smell

Illustration

The bigga' Teglia pizza

Bigga recipe

Wheat flour Type 65	1500 g	50 %
Water	675 g	45 %
Fresh yeast	15 g	1 %

Bigga process

Mixing (base T°: 55°C)	Manual, solely by hand
Dough T°	20°C – 21°C
Fermentation	16 - 20 hours at 25°C

Final recipe

Wheat flour Type 65	1500 g	50 %
Water	1425g + 450g "bassinage"	47.5 % + 15 %
Salt	75 g	2.5 %
Fresh yeast	60 g	2 %
Olive oil	75 g	2.5 %
Bigga phase 1	Total Bigga	30% of flour

Final process

Mixing (base temperature: 75°C)	10 min on slow speed + 5 min on high speed + 1 min on slow speed with oil
Dough T°	25°C
Bulk fermentation	60 min on tray, pre-rounded
Dividing	1.3 Kg
Pre-shaping	Compact rectangles placed on trays
Bulk fermentation	4 hours at room temperature or 24 hours at 4°C
Shaping	Shaped with the fingers on a well-floured table, then placed on a pizza tray (60 X 40 cm)
Topping (option)	Sauce only
Baking	300°C top heat 300°C bottom heat / 15 min
Topping	Optional: Add aromatic herbs and bake for another 2 min in oven



Olive Olive
Herbs Wood fire
herbs Wood fire
Olive Olive Herbs
herbs
Wood fire



SOUND

While sound is just one small factor in the quality assessment of a pizza, it is nonetheless the crispy, or crunchy texture, or sometimes combined soft/crusty texture, that will contribute greatly to the consumer's assessment of the product!



Shared experiences



Pasquale Cozzolino

Executive Chef at
Ribalata,
USA



▄▄ The first quality criterion of a good pizza is its appearance: it should have the black spots of a leopard.

An even shape is not mandatory. It should have the classic freshly-baked bread smell and the pizza should be light and airy. Pizzas vary enormously throughout the world, ranging from the highly standardised, industrially-made pizza at one end of the spectrum through to the more irregularly shaped, so-called «artisanal» versions at the other.

But make no mistake: a pizza is not just a bit of bread with tomato paste on top!

For me, the original pizza is the Neapolitan, created and invented in Naples. The Pizza Napoletana is based on a simple dough recipe, simple ingredients, long fermentation, 60/65% water, no chemical ingredients, and starts with a yeast-based fermentation. The Roman and Sicilian style pizzas, for example, were created in the United States and then spread all around the world.

In 2004, the first Neapolitan pizzeria was founded in the United States, but it wasn't such a great success. In 2008, a second attempt was made, this time it was a big hit. It marked the beginning of a wave of Neapolitan pizzerias that were about to take the American market by storm. When I arrived in the United States in 2011, I brought with me two pizza recipes, which nobody had ever heard of on that side of the Atlantic: the «fried pizza», known back then as the Montanara, and the Pala (one of my own creations).

The Montanara is made using the same dough as the Neapolitan pizza, but it is deep-fried and topped with a tomato sauce and pecorino cheese, then baked in a wood fire oven in order to «dry out» the oil. The Pala, however, differs from the Napoletana in terms of the water content : 78% for the Pala compared with 60/65% for the Napoletana, which means you have to bake it at a low temperature for the water to evaporate. The Pala also has a special ingredient: extra virgin olive oil. When water evaporates during baking, the oil content helps to preserve the moisture in the dough. It is the oil that makes the pizza soft inside and extra crispy on the outside.

How to make a good pizza? Firstly it requires simple, good quality ingredients: for me that means flour, salt, water and yeast (natural, or brewer's yeast). Then, the fermentation phase is extremely important; minimum 24h and temperature-controlled. If the fermentation phase lasts only 3/4h, the gluten will not be completely broken down, making the pizza less digestible. Personally speaking, I use 48h fermentation to optimise the digestibility of my own pizzas; a pizza Napoletana generally requires 12h fermentation.

For mixing, you will need a mixer that allows for maximum water absorption by the dough. Last of all, baking is very important; it's better to bake it in a wood fire oven. In short, a pizza maker should know his job to keep his customers coming back for more. For instance, he should be able to reassure customers with his knowledge of top-quality ingredients, appropriate length of fermentation, etc.

In my restaurants, customers thought the pizza Napoletana was too soft and soggy! But then I explained that the original pizza was like that, baked at a low temperature to keep the moisture inside the dough, and that the soft texture originally meant you could fold the pizza and eat it while walking along. Not exactly soggy, but certainly juicy, because it contained fresh mozzarella, which is high in fat (compared to other lower-fat cheeses, etc.), as well as a freshly made tomato sauce.

The pizza Napoletana is nowadays regarded as a «healthy» pizza, you can even treat yourself to a glass of wine with it.

The United States turned out to be the perfect trial territory for the pizza Napoletana, given the diverse backgrounds of consumers. Americans came to love it, once they accepted the «moist» texture, but it's also popular with Asians, Indians, the French and of course southern Italians (Italians from the north prefer it crunchier, but it's not really an issue, because if you bake it a bit longer, you can get a crispier texture anyway). In other words, everyone loves pizza! ▄▄

Sound / Pizza to the touch

The descriptors are presented in the order in which we recommend conducting the assessment.



Expert vocabulary

• Brittleness

Assess the texture of the pizza and the sound it makes when pinching the edges between the thumb and fingers



Consumer vocabulary

- Soft, rubbery/crispy, crackling, crunchy, crumbly, brittle

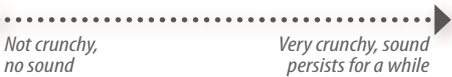
Sound / Pizza in the mouth



Expert vocabulary

• Crunchiness

Assess the sound it makes when biting into the rim of the pizza



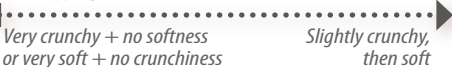
• Crispiness

Assess the length of time it stays crispy when chewing a piece of the crust



• Crispiness outside, softness inside

Assess the differences in texture when biting into a slice of the pizza taken from the middle and folded in two, with topping inside*



*: or when simply biting into the pizza in the case of a «calzone»



Consumer vocabulary

- Soft, rubbery/hard, tough, crispy, crunchy, crackling sound

- Soft, rubbery/hard, tough, crispy, crunchy, crackling sound

- Soft, rubbery/hard, tough, crispy, crunchy, crackling sound

Sound

Illustration

Corno Pizza

Recipe

Wheat flour Type 65	1000 g	100 %
Water	470 g	47 %
Salt	20 g	2 %
Fresh yeast	10 g	1 %
Sunflower oil	30 g	3 %
Sugar	5 g	0,5 %

Process

Type of mixer	Spiral
Mixing	3 min slow speed + 2 min high speed
Dough T°	24-26°C
Bulk fermentation	5 min
Dividing	250 g
Pre-shaping	Smooth, light rounds
Fermentation	4 hours -> 24 hours at 4°C / 50% relative humidity
Laminator	1.5 mm rectangle
Cutting	Shape Cutter
Shaping	Mould into a cone shape
Final proof	30 min at 28°C
1st bake	160°C / 4 min (pre-baked)
Topping	Tomato Mozzarella
2nd bake	280°C / 4 min
Topping	Lettuce, tomatoes, olives, peppers



Crunchy Crispy
Crispy Crunchy
Crispy
Crunchy Crispy
Crunchy



TEXTURE

First perceived through the sense of touch, then in the mouth, a pizza's texture is an essential factor, which can evolve rapidly. Texture is often lost as it cools down.



Shared experiences



SODEBO

France

/// The fresh pizza market is a mature market somewhat in decline for the last few years. The fresh pizza segment in small and medium supermarkets is now faced with the development of new alternative offerings, which share the same values of convenience, practicality and pleasure. It also has to compete with the home-made pizza, fresh pre-wrapped pizza in the refrigerated section, and the catering industry.

Today, 52% of French households buy fresh pizza. The purchasing frequency of 5 purchases/year/household is already down, with the loss of one purchasing act/year/household in the last 10 years. Mainly to blame is the current revamping of the market with the introduction of the increasingly popular cardboard box format. This development currently accounts for more than half the market share in terms of value. Consumers are therefore buying «less but better», hence the drop in purchasing frequency

The market may well be on the downturn, but there is no sign of disenchantment! Pizzas are consumed by almost everybody, and the category is firmly rooted in pleasure, indulgence and convenience. Fresh pizza is a marker of quality and freshness in the small or medium supermarket segment. Consumers expect more transparency surrounding the sourcing of ingredients, and especially variety and originality in the recipes. SODEBO caters to this need by providing a constant stream of new varieties, including the upcoming Pizza Crust Indiana (sweet curried chicken) and even the Dolce Pizza Bolognese.

At Sodebo, we make 4 pizza ranges, including 2 upgraded ranges: The Dolce Pizza range represents all the finesse and flavour of an Italian style pizza. The pizzas are top-quality, refined and reminiscent of what one might expect of a genuine Italian restaurant: thin stone-baked dough, authentic ingredients selected for their taste and luxury presentation (generous shreds, shavings, slices).

The Crust range conjures up the indulgence associated with a generous, rich pizza and topping.

The premium family pizza is highly appetising thanks to its stone-baked soft dough with a crispy cheese crust, copious, flavoursome toppings and generous 600g format.

For all of our pizzas, 100% of our doughs and sauces are made on our site at Saint-Georges-de-Montaigu, as are most of the cold pork meats used for our toppings. Our pizza dough specialists are busy every day making dough, which is used on the same day for the manufacture of our pizzas.

Sensory analysis is a key factor in the development of our pizzas and the quality control of our products. It is therefore the QSE (Quality, Safety, Environment) department's task to ensure that our pizzas remain compliant throughout their life span:

- appearance : degree of baking, distribution of topping.
- to the touch : texture and stability of dough.
- mouth-feel: dough texture, taste of our ingredients, no extraneous flavours.

For pizza development purposes, a hedonic consumer panel tests our products on the basis of their preferences. Some of the characteristics tested are more specific to this type of product: dough texture (ideally soft and/or crispy), assessment of thickness of the dough and especially the surrounding rim, the dough/topping ratio, or taste of topping (seasoning, salty taste). The results of these panel tests are key decision-making factors when validating our innovation projects. ///

Texture / Pizza to the touch



Expert vocabulary

• Elasticity

Assess the behaviour of the pizza when vertical pressure is applied to the surface by the hand

Resistant to deformation + doesn't spring back

Easily deformed + springs back to initial shape



• Resistance to lateral pressure

Assess the behaviour of the pizza dough when gently tearing apart at the sides

Easy to tear in two

Difficult to tear in two



• Pliability

Fold a slice of the pizza down the middle, with topping in the centre. Assess the tear line, which forms along the pizza.

Tears along the entire length

No tearing, pliable



• Rigidity

Using another slice of the pizza; assessment ideally to be conducted 3 or 4 minutes after removal from the oven. Hold the slice by the rim and assess the behaviour of the tip.

The tip is droopy, soft

The slice remains rigid, upright



Consumer vocabulary

• Hard, firm, tough/elastic, supple, rubbery

• Hard, tough, rigid/brittle

• Hard, tough, rigid, brittle/supple, delicate, soft, moist

• Tough, rigid, hard/soft, moist

Texture / Mouth-feel of the pizza, dough rim

• Chewing resistance, dough rim

Tear off a piece of the crust and place it in the mouth, then assess its resistance to chewing (molars)

Firm, rubbery

Delicate, needs little chewing

• Hard, firm, tough, rubbery/easy to chew, light, airy, aerated, creamy soft, brioche-like, delicate, melt-in-the-mouth.

• Friability

Assess the crumbliness of the dough /crust rim when chewing

Not crumbly

Crumbly

• Filling, heavy, over-filling, rubbery/light, airy, friable, crumbly, gritty.

The descriptors are presented in the order in which we recommend conducting the assessment.



Expert vocabulary

• Stickiness

Assess the stickiness of a piece of dough taken from the rim.
Chew the piece 10 times, by gently biting up and down to assess the stickiness (whether or not a film is created between the gums).

Not sticky Very sticky

• Greasiness of dough

Assess the greasy mouth-feel after chewing and swallowing a piece of the dough rim

Slightly greasy very greasy

• Spontaneous comments by experts



Consumer vocabulary

• Dry/sticky, doughy, spongy, moist

• Dry, cardboard/fatty, greasy, oily (not at all, a little, very)

• Pleasing (fairly to very)

Texture / Mouth-feel of the pizza, middle part

• Chewing resistance, middle part

Assess the resistance of a piece of dough taken from middle, folded in two

Firm, rubbery Delicate, needs little chewing

• Moistness of dough, middle part

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

Dry Moist*

• Doughiness

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

Not doughy Doughy

• Spontaneous comments by experts

• Hard, firm, tough, rubbery/easy to chew, light, airy, aerated, creamy, brioche-like, delicate, melt-in-the-mouth

• Dry, cardboard/moist, fresh, soggy, spongy, viscous, glue-like

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

• Pleasant (fairly to very)

*assessment using this descriptor highlights the migration of sauce into the dough

Texture

Illustration



Crispy & Aerated
Delicate *Fresh*
Delicate **Fresh &** *Delicate*
Crispy & Aerated
Fresh *Delicate*
Crispy

The «healthy» pizza

Recipe

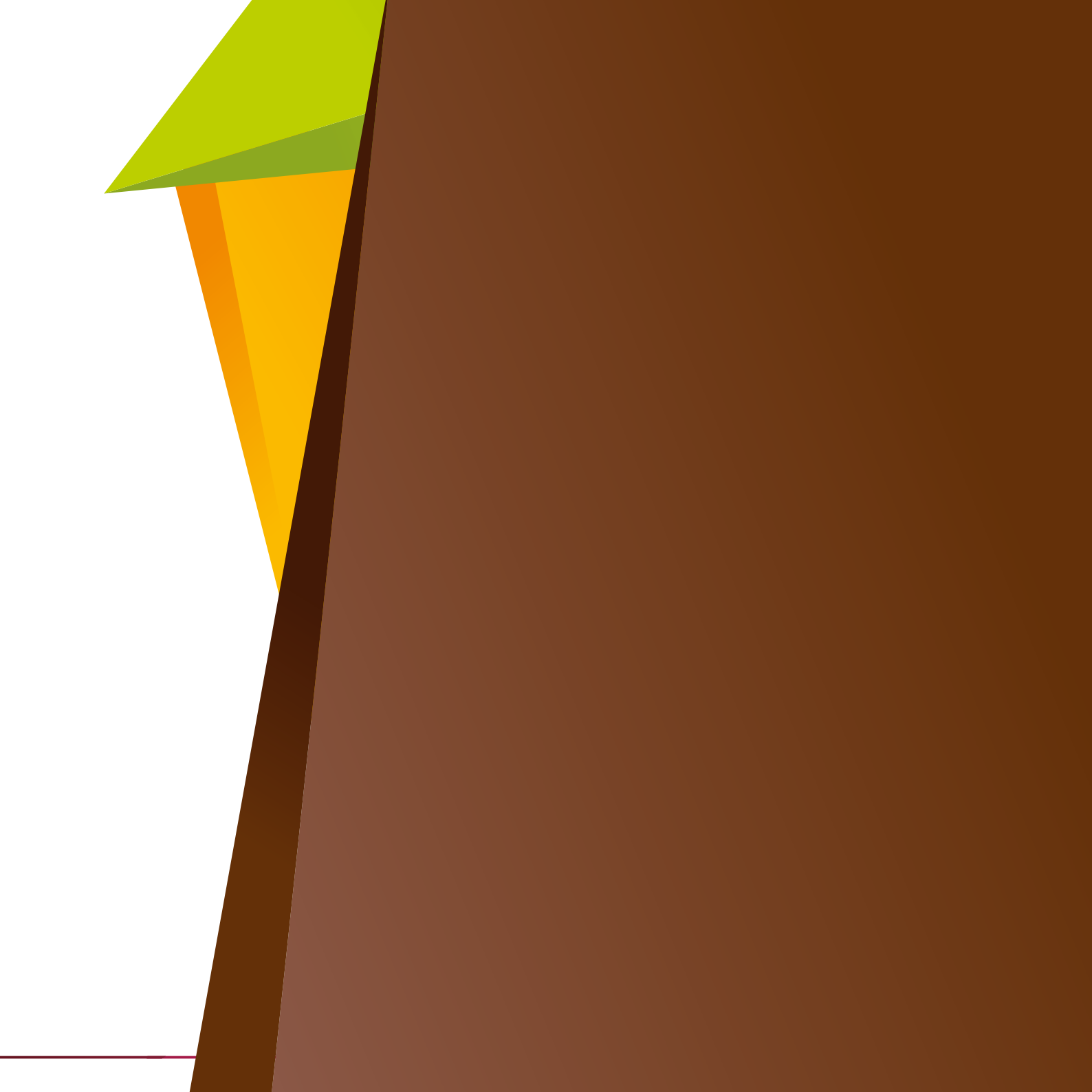
Wheat flour Type 65	500 g	50 %
Corn flour	500 g	50 %
Water	600 g	60 %
Salt	20 g	2 %
Fresh yeast	30 g	3 %
Sunflower oil	30 g	3 %
Sugar	5 g	0,5 %

Process 1 :

Type of mixer	Spiral
Mixing	4 min on slow speed
Boiling of flour	Water T°: 80°C
Rest	60 min

Process 2:

Type of mixer	Spiral
Mixing	8 min on slow speed
Dough T°	28-30°C
Bulk fermentation	No
Dividing	340 g
Pre-shaping	Smooth, light rounds
Shaping	Oiled American pizza mould 25 cm
Fermentation	60 – 80 min at 32°C
Topping	Cream, aubergine, pepper, onion, sweetcorn
Baking	250°C / 5 min 30 sec / tunnel oven





TASTE

The taste of a pizza is the major indicator of quality for a consumer. The aromas contributed by the dough are very important, especially in American style pizzas with a thick crust and almost equally generous topping.

The descriptors below focus on the dough without topping on the edges, and are organized in alphabetical order; some descriptors are intrinsic to the dough, others relate to the migration of certain ingredients in the topping, especially those with a greater likelihood of migrating (tomato paste, spices, etc.).



Gleb KOTLYAROV

Manager R&D
Dodo Pizza
Russia

Shared experiences

“Dodo Pizza use their own IT to improve processes and make a consistent quality product.

The first pizzeria was opened in 2011 in Syktyvkar. Thanks to the strict standards and their own information system, it reached the operational plus in two months and paid off in less than a year.

They have introduced technologies in the first pizzeria that help them to bake delicious pizza, clearly fulfil orders, cope with rush hours and improve the efficiency of the staff. Since 2013, they have been helping young entrepreneurs to launch their own pizzerias according to their standards. During the first two years, their partners launched pizzerias in Russia, Kazakhstan and Romania.

In 2015, the first pizzerias were opened in Lithuania, Estonia and Uzbekistan. In 2016-2017, they opened pizzerias in America, China, Great Britain and Kyrgyzstan.

Like any other pizza chain, Dodo faced a few problems, notably regarding the lack of information on customer satisfaction. In order to strengthen the bond with their customers, the chain launched a consumer survey campaign with the aim of getting an understanding on customer motivations and the reasons behind their preferences. Tests were introduced into pizzerias, enabling them to try out new concepts. These allowed Dodo to identify the key characteristics important for the consumer:

Dough should correspond to the type of product, toppings should be in accordance with the recipe, the shape and cutting of the pizza should comply with their standards.

According to the results of the studies, the ideal pizza for the Eurasian market and some

Eastern countries should have a range of key characteristics:

- medium brown colour of the dough's edges, presented with some air bubbles and a roughish surface
- moderate air hole structure inside
- very sweet taste
- good aromatic quality
- finally, while the taste of the pizza is still a decisive factor in the purchasing act, given the decline in buying power, the price is still extremely important for the consumer.

In 2018/2019, Dodo centralized production and introduced the long cold fermentation technique, which has been a resounding success! To prove it, the chain is now twice as big as their competitors.

The Dodo manufacturing process requires compliance with a variety of critical points: careful selection of ingredients (flour and yeast quality are paramount), mixing, dividing and fermentation, with strictly controlled temperatures, timing and weighing. The lamination and baking stages are also important considerations for the quality of the finished product.

Pizza is a highly technical product requiring thorough control over a combination of factors!

Some restaurant chains use ingredients and frozen dough to obtain a certain amount of flexibility in their production process. Conversely, Dodo works solely with fresh dough and products, thereby making it especially difficult to guarantee consistent quality: the only guarantee is to ensure strict compliance with the specifications at every stage in the process. ”

Taste / Dough rim

Here, we are focusing mainly with the taste of the pizza dough. To ensure optimum testing, the tasting should focus on the edges or inside of the pizza. Each expert descriptor is illustrated by a reference pizza base recipe (pizza base 1 or pizza base 2), together with an added ingredient to lend distinctive aromatic typicity.

The descriptors are organized in alphabetical order.

Pizza base 1

Recipe		
Wheat flour Type 65	1000 g	100 %
Water	530 g	53 %
Salt	20 g	2 %
Fresh yeast	6 g	0,6 %
Olive oil	30 g	3 %

Process	
Type of mixer	Spiral
Mixing	8 min on slow speed
Dough T°	25-26°C
Bulk fermentation	5 min
Dividing	340 g
Pre-shaping	Smooth, light rounds
Tray proofing 24h at 4°C	Oiled trays proofing / oil surface of dough pieces/ Cover with another tray to prevent skinning
Shaping	Manually on a grill mould 30 cm
Topping	60 g tomato sauce + 120 g mozzarella
Baking	280°C / 5-6 min / Deck oven

Pizza base 2

Recipe		
Wheat flour Type 65	1000 g	100 %
Water	520 g	52 %
Salt	20 g	2 %
Fresh yeast	20 g	2 %
Olive oil	10 g	1 %

Process	
Type of mixer	Spiral
Mixing	8 min on slow speed
Dough T°	25-26°C
Bulk fermentation	5 min
Dividing	340 g
Pre-shaping	Smooth, light rounds
Shaping	Oiled American pizza mould, diameter 26 cm
Final proof	80 min at 32°C / 75% H
Blocking	1 or 2 hours at 4°C / 50% relative humidity
Topping	40 g tomato sauce + 120 g mozzarella
Baking	5.30 min at 250°C



Expert vocabulary

• Acetic, vinegar aroma



RECIPE

✓ *Pizza base 1 with 4% white vinegar*

• Bread aroma



RECIPE

✓ *Pizza base 2 no oil*

• Cardboard aroma



RECIPE

✓ *Pizza base 1 with no bulk fermentation phase, no oil.
Tasting sample: 1 day old pizza*

• Cereal aroma



RECIPE

✓ *Pizza base 1 replacing 50% of flour with wholemeal flour*

• Crackers/grilled cheese * ° aroma



RECIPE

✓ *Pizza base 1 + 2% yeast extract
BioSpringer CH7012-20-PWo402*

• Fermented/yeast aroma



RECIPE

✓ *Pizza base 2 + 4% fresh yeast*

• Herb * ° aroma



RECIPE

✓ *Pizza base 1 + 1% dried aromatic herbs*

• Malty aroma



RECIPE

✓ *Pizza base 1 + 2% caramel-coloured malt powder*

• Oil * ° aroma



RECIPE

✓ *Pizza base 1 + 30% olive oil*



Consumer vocabulary

• Tangy, sourdough, acidic

• Bread, freshly baked bread, ciabatta, wheat, brioche

• Cardboard, neutral, flour, floury, paper, doughy

• Cereals, bran, flour, grains, popcorn, wheat

• Crackers, biscuit, biscuity, cheese, grilled cheese, grilled, rancid, fat
• Types of cheese (mozzarella, gorgonzola, etc.)

• Fermentation, ferment, fermented, yeast (fresh)

• Herbs
• Types of herb (Thyme, oregano, basil, etc.)

• Smoky, open wood fire, burnt, charred, grilled, toasted, popcorn

• Oil, oily, fried, fatty, brioche, brioche-like

Taste / Dough rim



Expert vocabulary

• Olive * ° aroma



RECIPE

✓ *Pizza base 1 + 20% black olives*

• Open wood fire aroma



RECIPE

✓ *Pizza base 1 + 0.5% very dark coloured rye malt powder*

• Pancake batter aroma



RECIPE

✓ *Bigga'Telia pizza (recipe in chapter on «Smell») no herbs*

• Peppery * ° aroma



RECIPE

✓ *Pizza base 1 + 0.7% white pepper*

• Sourdough aroma



RECIPE

✓ *Pizza base 1 + 30% natural liquid sourdough*

• Spicy aroma * °



RECIPE

✓ *Pizza base 1 + 1% Raz el Hanout spice*

• Tomato * aroma



RECIPE

✓ *Pizza base 1 + 10% tomato puree (corrected hydration)*

• Other aromas added by topping

• Spontaneous comments by experts

*aromas frequently exuded by the topping

°ingredients that can be added directly to the dough



Consumer vocabulary

• Oil, olive

• Smoky, open wood fire, burnt, charred, grilled, toasted

• Pancake batter, flour, floury, dough, raw unbaked dough, brioche, brioche-like

• Peppery, tangy, spicy, acidic

• Sourdough, acidic, metallic, tangy, spicy, peppery

• Spicy, tangy, peppery, sharp • Types of spice (cumin, curry, etc.)

• Tomato, acidic, sweet

• Vegetables, meat, onion/garlic, fish, cheese, fruit...

• Insipid, neutral, bland, little, no flavour/ flavoursome, fragrant, aromatic, strong, intense • Classic, traditional, artisanal

Taste / Dough edges



Expert vocabulary

• Acidic taste



VERY ACIDIC RECIPE

✓ 4% vinegar

• Salty taste



VERY SALTY RECIPE

✓ 3% salt

• Sweet taste



VERY SWEET RECIPE

✓ 10% sugar

• Umami taste



VERY STRONG UMAMI RECIPE

✓ 0,15% monosodium glutamate

• Spontaneous comments by experts



Consumer vocabulary

• Tangy, acidic, bitter, spicy

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

• Sugary, sweet

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

• Lingering taste

Taste / Recipe

The Candy crust (Pistachio marzipan dough recipe)

RECIPE

- ✓ 100 g ground almonds
- ✓ 100 g icing sugar
- ✓ 1 egg white
- ✓ 5 g pistachio dough flavouring

Process

- Mix 5 minutes in dough mixer with flat beater
- Place bulk preparation on baking parchment and leave to rest 2 hours at 4°C
- Then roll out by hand with a little flour to create thin sausage shapes (approx. 0.8mm in diameter)

Taste

Illustration

The Candy crust (Pistachio marzipan dough recipe)

Recipe

Wheat flour T65	1000 g	100 %
Water	500 g	50 %
Salt	20 g	2 %
Fresh yeast	5 g	0,5 %
Sunflower oil	30 g	3 %
Sugar	5 g	0,5 %

Process

Type of mixer	Spiral
Mixing	8 min on slow speed
Dough T°	25-26°C
Bulk fermentation	No
Dividing	340 g
Pre-shaping	Smooth, light rounds
Fermentation	1 to 4 days / 4°C / 50% relative humidity
Allow to reach room temperature	60 min / room T°
Shaping	Rectangle 20 cm / 30 cm
Incorporate marzipan into edges	Edges should be well sealed
Pick vit	Docking
Topping	150 g raspberry compote
Baking Tunnel Oven	250°C / 5 min 30 sec
Decoration	Icing sugar, raspberries, meringues, mint



Pistachio Almond
Almond
Pistachio **Pistachio**
Almond
Almond **Pistachio**
Pistachio *Almond*

PIZZA *in words*

A GLOSSARY OF SENSORY TERMS TO DESCRIBE PIZZA

Renowned for its sensory expertise, Lesaffre has developed, together with Leo Spizzirri, a glossary of sensory attributes adapted to the assessment of pizzas. This tool is used to combine two approaches: the more subjective approach of consumers and the more objective angle of experts.

Browse this booklet, sample and enjoy!



Already published:
"LE PAIN" in words,
SANDWICH BREAD in words,
"LE CROISSANT" in words,
to describe crusty bread,
sandwich bread and
croissants.



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