

Bread improvers

What exactly is a bread improver? What are the benefits of an improver? Why do we use improvers? Brands adapted to your needs.

In line with its core business (yeast fermentation), and to meet the specific needs of bakers when working with dough, Lesaffre is committed to developing specialised ingredients which are usable in milling or baking. With this in mind, the group has developed a range of **bread improvers**, starters for sourdough and yeast offering a reducing power which can replace certain additives.

What is a bread improver?

► Provides a good oven spring.



► The colour of the crumb,



► A smooth crust, free from blistering,



► Softness and freshness,



► Regular honeycombing



A **bread improver** is a combination of ingredients: technological auxiliaries, additives and various raw materials, whether of cereal origin or not, all mixed according to a suitable formula.

The formula comprises all or part of the following 5 components:

- oxidising agents,
- reducing agents,
- enzymes,
- emulsifiers,
- various ingredients with specific effects.

Bread improvers offers the baker tolerance and safety. They help make the baker's job easier and safer by acting on the behaviour of the dough in three ways:

- **Rheological**: by increasing its content, its strength or its extensibility so that it is able to withstand machine pressure better;
- **Fermentative**: by optimising the action of the yeast by controlling fermentation and increasing gas retention;
- **Proofing**: by encouraging product development during baking.

What are the benefits of an improver?

The performance of improvers depends on the choice and quantity of each of the ingredients, in order to produce an optimal overall effect. This is naturally related to the quality of the flour, the type of equipment used, the bread-making process and naturally the type of bread being baked.

Why do we use improvers?

Originally, bread improvers had a somewhat universal application, in other words they offered a broad functionality in bread-making. Market developments and the requirements of new baking technologies have meant that, for a number of years, bread improver formulation principles have become increasingly high-tech.

These principles adapt to increasingly important variables such as the diverse quality of flours, bread-making procedures and types of baking equipment. Consequently, an improver specially adapted to the baker's bread-making conditions makes it possible to obtain:

- Faster smoothening of the dough,
- Improved machineability,
- An increased proofing tolerance,
- A better yield.

Finally, bread improvers provide consumers with the best types of bread, in terms of volume, texture and colour of the soft part, appearance and colour of the crust, preservation and, of course, taste. The Lesaffre range of improvers offers numerous **physiological benefits** (easier production), **conservation benefits** (by helping the finished products to stay fresher for longer) and **organoleptic** benefits (by improving the aroma of the products).

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A range of brands specially adapted to bakers' needs

As formula design is a matter for professionals, bread improvers are designed and tested taking full account of flour quality, production processes, the equipment used and the type of products to be baked. The improvers are specially adapted to the specific constraints found in each country.

easts

Lesaffre has developed various forms of yeast to meet the needs of bakers around the world. Yeast is used fresh or dried according to the country concerned, its traditions and its environment. When dehydrated, yeast can endure climatic conditions which are sometimes extremely harsh. It is often marketed in this form in Africa, Asia or the Middle East. For its part, fresh yeast is often used in countries with a highly developed cool chain logistics system. Crumbled, liquid or frozen yeast is well adapted to certain specific industrial processes.

Lesaffre is the leading player in the yeast market with a range of brands widely recognized by bakers for their performance and consistency. Among these, saf-instant is world renowned for its quality in the dried yeast market. Lesaffre's traditional brand "l'hirondelle" has been used by generations of bakers since 1895. This is the world's most widely used brand of compressed yeast.

- Compressed yeast
- Crumbled yeast
- Liquid yeast
- Active dried yeast
- Instant dried yeast
- Frozen yeasts

Compressed yeast



Highly practical, **crumbled yeast** is generally used in the industrialized nations.

Lesaffre's *l'hirondelle* brand of compressed yeast is the variety most widely used throughout the world. It contains between 28 and 35% solids. Extremely crumbly, it can easily be added during mixing.

Stored cool at between 0° and 10 °C, it retains all of its characteristics up until the use-by date shown on the packaging. It is marketed in compact blocks of 500g or 1 kg. Its consistency and colour vary according to the country concerned.

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Crumbled yeast



This type of yeast is ideally suited to the needs of industrial bakers. Taking the form of fine particles, it is ideal for mixer feeder hoppers, crumbled yeast makes it possible to consistently and accurately weigh and adjust the dose to be used. It can also be used in suspension when mixed with water. From the moment that it is received, crumbled yeast must be kept at an optimum temperature of between 0 and 6 °C. This will enable it to retain all of its properties up until the use-by date shown on the packaging. Any open bags must be kept cool and be used quickly during the day. Crumbled yeast is packed in 25 kg bags.

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Liquid yeast



Compact yeast first made its appearance in 1825. Up until then, yeast had always been marketed in liquid form. Today, the current renaissance of this form of yeast has been spurred on by demand from the industrial bakery sector. It is today widely used in Australia, on the American continent and in Western Europe.

The characteristics of liquid yeast:

Lesaffre is today working to meet the specific needs of industrial producers by offering a variety of processes and packaging options:

- Large (2x 25m³) or medium sized facilities,
- Liquid conversion systems,
- Installations with 500 and 1000 containers for low content levels.

Each solution offers numerous advantages including ease of use, ease of incorporation in the mixer, and the maintenance of the required temperature up until the precision dispensing stage.

Most of the major facilities are equipped with automated "cleaning in place" (CIP) systems making it possible to store and measure out the yeast under optimal conditions.

Additionally, in 2005 Lesaffre launched a revolutionary innovation aimed at the traditional baking sector, by proposing the first refrigerated distributor of **Kastalia** liquid yeast using a bag-in-box system.

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Active dried yeast



In the humid climates, this is particularly appreciated for its stability at ambient temperatures.

The yeast is reactivated by rehydration at a temperature of between 35 and 40 °C, with the ideal being 38 °C. After being left to stand for a while, the yeast quickly goes into suspension, at which stage it offers all of the same characteristics as liquid yeast.

Active dried yeast is marketed in the form of air-packed granules or spherical particles. It is packed in 125 and 500 g cans, in 50 and 100 g sachets, in 10 and 25 kg bags or in 25 kg plastic containers.

Active dried yeast for pizzas

An active form specifically designed for pizza making is also available.

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Instant dried yeast



Lesaffre is constantly adapting and perfecting yeast solutions to keep pace with changes in bread-making methods.

Consequently, in 1973 Lesaffre launched an "instant dried yeast" which did away with the need to rehydrate active dried yeast while at the same time offering a fermentation power 30 to 40% higher than the latter. It is identical to that of compressed yeast despite weighing between three and four times less, and offers the same ease of use.

Instant dried yeast often allows for speedy and uniform absorption within the dough. This yeast can be added directly to the mixer by mixing it dry with the flour or by sprinkling it on top of the dough when mixing begins.

This yeast is obtained from a dehydrated compressed yeast. It takes the form of small "noodles" packed in 125 g or 500 g sachets or in bag-in-box packs weighing 10 kilos and more. The vacuum-packed sachets guarantee the product's stability at ambient temperature, up to the date shown on the packaging. Sachets of 7 to 11 g packed using neutral gas are also available for domestic use.



Saf pizza: an instant dried yeast for pizzas

A variety of yeast specially adapted to pizza making.

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Frozen yeasts

Frozen intermediate humidity dried yeast



Frozen intermediate humidity dried yeast takes the form of small "noodles". It offers the same functional characteristics as compressed yeast, while resembling instant dried yeast.

It is used for applications such as frozen dough.

Air-packed in a polyethylene sachet, it is then frozen. Stored at $-18\text{ }^{\circ}\text{C}$, it retains its characteristics until the date shown on the packaging. It can be stored for long periods and exported to faraway destinations where compressed yeast is not available. It is also used when instant dried yeast would not be suitable.

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saf Semi-dry frozen yeast



saf Semi-dry is patented, advanced-technology frozen yeast. Sold in the form of tiny vermicelli-like noodles, it has extremely strong powers of fermentation. It is easily incorporated into the dough (without prior defrosting) and imparts a pleasant odour and light colour to the bread. And top performance is not limited to baking results; *Semi-dry's* packaging is also a first.

saf Semi-dry was specifically designed to meet the needs of artisan bakers, hotel, and restaurant industry baking professionals who seek performance, hygiene, convenience and respect for the environment.

Practical and modern, the re-sealable *Tetra Rex*® packaging grants users increased storage space, and greater ease and better precision of measurement. Perfectly recyclable, this innovative packaging ensures total protection against micro-organisms for optimal product conservation.

Taste enhancers

Consumers are today chiefly interested in the taste and conservation characteristics of bread.

This development is part of a wider consumption trend where the essential properties of food products are concerned, with the focus firmly on taste, health, pleasure and well-being. Consumers expect their food products to be made with reassuring natural ingredients possessing clearly stated health properties. With this in mind, for several years now Lesaffre has focused the development of its products and techniques on "the taste culture in bread-making". Its product range has significantly diversified.

- Starters for sourdough: *Saf Levain*
- Ready-to-use live sourdough: *Crème de Levain*
- Deactivated fermented flour: *Arôme Levain*

Starters for sourdough: *saf Levain*®



Saf levain® is a starter which facilitates the preparation of an "all-round" sourdough. It makes it possible to produce sourdough in a single process, in less than 24 hours!

It comprises a dehydrated concentrate of living microorganisms containing pure selected strains (live lactic bacteria and yeasts derived from sourdough). These microorganisms are both known and fully controlled.



It gives each new preparation a high degree of consistency and repeatability where its characteristics are concerned. *Saf levain*® overcomes the problems associated with the refreshing of sourdough, which can often be difficult to control and problematic when it comes to hygiene. In doing so, it does away with the delicate and hazardous starting and control phases (= "refreshing") of a spontaneous sourdough prepared using traditional methods.

Its uses during the bread-making process are many and varied and include: baguettes, special loaves, sandwich bread, brioche and Viennese pastries. According to the application concerned, the *Saf levain*® range of starters makes it possible to develop typical "sourdough" flavours with a number of variants including buttery/milky, rye, acetic or fruity, etc. They also provide a varying degree of acidity, and improve the texture of the crumb and the overall taste of the bread, as well as helping finished products to stay fresher for longer.

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Ready-to-use live sourdough: *Crème de Levain*®



An innovation developed and patented by Lesaffre, *Crème de Levain*® is the only active live sourdough in liquid form with a guaranteed biomass.

It is obtained through the natural fermentation of cereal flour by living microorganisms present in the spontaneous sourdough. Available in a ready-to-use liquid form, the product is poured directly into the mixer, and can be used just as easily as yeast. This is a high-tech product whose conservation and metabolic fermentation characteristics are the result of a great deal of scientific research, and demonstrate a flawless knowledge of fermentation agents, all areas in which Lesaffre excels. As a genuine acidifying fermentation agent, it helps the dough to rise and gives the finished product the unique aromatic characteristics so typical of "sourdough" bread-making.

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A guaranteed living biomass



The innovative process used to obtain *Crème de Levain*® is protected by a Lesaffre patent. It guarantees a high level of living biomass throughout the recommended useable life of the product. This unique characteristic is vital in order to ensure:

- The raising properties of the dough
- The distinctive aromatic characteristics of a "sourdough" bakery product.

Crème de Levain® is available in two versions:

- *Crème de Levain*® « long process »: thanks to specially selected strains, it offers a high level of aromatic richness for long process applications (> 6 hours).
- *Crème de Levain*® « short process »: thanks to the use of specific flora, it produces a high degree of fermentation during bread-making when used for short process (2 to 4 hours) or medium process applications (3 to 6 hours).

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Deactivated fermented flour products: *Arôme Levain*®



Thanks to its extensive knowledge in the field of micro-organisms and fermentation processes, Lesaffre offers a range of deactivated fermented flours guaranteeing the quality of the finished product, and marketed under the *Arôme Levain*® brand.

These products are prepared using wheat or rye flour. They have no fermentation characteristics. They give the end product all the taste and aroma of sourdough produced from wheat or rye.

Sourdough aromas are very easy to use: they require no preparation and can be added directly to the mixer. They are developed for applications involving short fermentation times, and are available in powdered or liquid form:



- **In dried form, based on wheat or rye**, fermented flours are dehydrated using techniques making it possible to retain all the aroma of the sourdough. Compatible with all types of equipment, this product works well alongside the yeast and bread improvers, making it easier to shape the dough pieces, improving the final appearance of the bread and the texture of the crumb, while the bread also stays fresher for longer.
- **In liquid form produced using rye**, the volatile aromas so typical of sourdough are retained in the finished product. They also provide a useful antifungal effect and enhanced bacterial security.

Mixes and blends

Blends



A blend is a service-solution which combines fermentation (yeast/sourdough) aromatic and improver characteristics in a single product. The blend has the advantage of being added directly to the flour. Once water is added, this makes it possible to obtain a uniform dough for a specific bread product.

Bread-making premixes

A bread-making premix is a combination of an improver containing flavour-enhancing agents and one or several types of special flour. A premix makes it possible to produce a given category of bakery product. The dosage used can vary from 5% to 60% of the total volume of ingredients used in the recipe (excluding yeast and water).

Bread-making mixes

This is a combination of a premix and standard flour, making it possible to obtain a given category of bakery product. A bread-making mix accounts for 100% of the volume of the ingredients used in the recipe (excluding yeast and water).

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Ready-to-use preparations



An exciting innovation, *Inventis* is a new range of mixes created by Lesaffre. Perfectly suited to current consumption patterns, *Inventis* enables bakers to produce bread products with unique flavours and textures. As a designer of tastes and flavours, the craftsman-baker can fully express himself as an artist... much to the delight of his clients! *Inventis* offers a unique solution to the needs expressed by the market, providing creative, reliable and simple recipes.



Advantages:

- Makes it easier for the baker to fully express his know how and creativity
- Allows for new recipes in keeping with current consumption trends: authentic, healthy and nutritious
- Gives bakers the means to make their products really stand out at the point of sale.

Packaging: 5, 10, 25 and 30 kg bags

The recipes are adapted to the local preferences of each country.

- Mixes for traditional breads (colour code blue)
- Mixes for healthy breads (colour code green)
- Mixes for pastries (colour code red)

Yeast for Alcohol

A Yeast for Every Need. Little-known for its action in the fermentation of alcohol, yeast plays nonetheless an essential role.

Depending upon the type of yeast selected, the quality and characteristics of the finished product will differ. The final alcohol content will be more or less important, or specific aromas will be developed, such as banana in beer or wine, for example.



Division of S.I.Lesaffre

Fermentis is a business unit of the Lesaffre Group dedicated to the sales and development of yeasts and yeast products to the beer, wine, spirits and industrial ethanol industries. Among its customers are industrial and microbreweries, wine cellars as well as fuel ethanol facilities, the 'green', plant-based fuel.

Flagship Products:

Dry Brewing Yeast: Fermentis was the first producer on the market to offer lager yeast in dry form. The product line covers all types of production, from industrial to home brewing and traditional, craft brewing.

In winemaking, Fermentis offers not only yeasts but also yeast products (activators, maturation products) specially selected for their adaptability to the various methods of winemaking and particular types of vines.

Ethanol Red® is the number one yeast in North America for the production of fuel ethanol. Its properties: large ethanol production even at very high temperatures.