Bread and baker's yeast

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I. Baker's yeast

Baker's yeast is the common name for the strains of yeast commonly used as a leavening agent in baking bread and bakery products, where it converts the fermentable sugars present in the dough into carbon dioxide and ethanol. Baker's yeast is of the species *Saccharomyces cerevisiae*, which is the same species (but a different strain) commonly used in alcoholic fermentation, which is called brewer's yeast. Baker's yeast is also a single-cell microorganism found on and around the human body.

I. Baker's yeast

The use of steamed or boiled potatoes, water from potato boiling, or sugar in a bread dough provides food for the growth of yeasts; however, too much sugar will dehydrate them. Yeast growth is inhibited by both salt and sugar, but more so with salt than sugar. Fats, such as butter or eggs, slow down yeast growth; however, others say the effect of fat on dough remains unclear, presenting evidence that small amounts of fat are beneficial for baked bread volume.

I. Baker's yeast

Saccharomyces exiguus (also known as *S. minor*) is a wild yeast found on plants, fruits, and grains that is occasionally used for baking; however, in general it is not used in a pure form but comes from being propagated in a sourdough starter.

II. Types of baker's yeast

- Baker's yeast is available in a number of different forms, the main differences being the moisture contents. Though each version has certain advantages over the others, the choice of which form to use is largely a question of the requirements of the recipe at hand and the training of the cook preparing it. Dry yeast forms are good choices for longer-term storage, often lasting more than a year at room temperatures without significant loss of viability. In general, with occasional allowances for liquid content and temperature, the different forms of commercial yeast are considered interchangeable

II. Types of baker's yeast

Cream yeast

Cream yeast is the closest form to the yeast slurries of the 19th century, in essence being a suspension of yeast cells in liquid, siphoned off from the growth medium. Its primary use is in industrial bakeries with special high-volume dispensing and mixing equipment, and it is not readily available to small bakeries or home cooks.

II. Types of baker's yeast

Compressed yeast

- Compressed yeast is, in essence, cream yeast with most of the liquid removed. It is a soft solid, beige in color, and best known in the consumer form as small, foil-wrapped cubes of cake yeast. It is also available in larger-block form for bulk usage. It is highly perishable; though formerly widely available for the consumer market, it has become less common in supermarkets in some countries due to its poor keeping properties, having been superseded in some such markets by active dry and instant yeast. It is still widely available for commercial use, and is somewhat more tolerant of low temperatures than other forms of commercial yeast; however, even there, instant yeast has made significant market inroads.

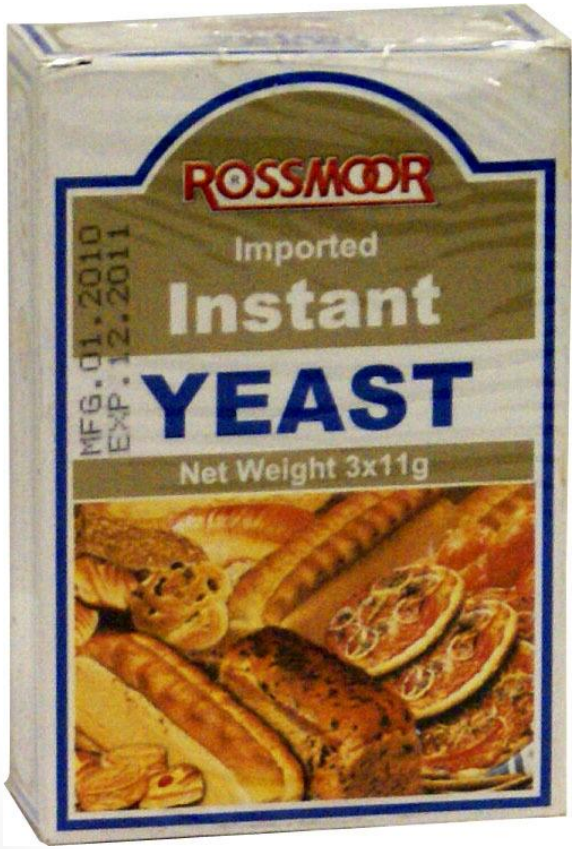
II. Types of baker's yeast

Active dry yeast

- Active dry yeast is the form of yeast most commonly available to noncommercial bakers in the United States. It consists of coarse oblong granules of yeast, with live yeast cells encapsulated in a thick jacket of dry, dead cells with some growth medium. Under most conditions, active dry yeast must first be proofed or rehydrated. It can be stored at room temperature for a year, or frozen for more than a decade, which means that it has better keeping qualities than other forms, but it is generally considered more sensitive than other forms to thermal shock when actually used in recipes.

II. Types of baker's yeast

Instant yeast



- Instant yeast appears similar to active dry yeast, but has smaller granules with substantially higher percentages of live cells per comparable unit volumes. It is more perishable than active dry yeast but also does not require rehydration, and can usually be added directly to all but the driest doughs. In general, instant yeast has a small amount of ascorbic acid added as a preservative. Some producers provide two or more forms of instant yeast in their product portfolio; for example, LeSaffre's "SAF Instant Gold" is designed specifically for doughs with high sugar contents, and such yeasts are more generally known as osmotolerant yeasts.

II. Types of baker's yeast

Rapid-rise yeast

- Rapid-rise yeast is a variety of dried yeast (usually a form of instant yeast) that is of a smaller granular size, thus it dissolves faster in dough, and it provides greater carbon dioxide output to allow faster rising. There is considerable debate as to the value of such a product; while most baking experts believe it reduces the flavor potential of the finished product, *Cook's Illustrated* magazine, among others, feels that, at least for direct-rise recipes, it makes little difference. Rapid-rise yeast is often marketed specifically for use in bread machines.

II. Types of baker's yeast

Deactivated yeast

- Deactivated yeast is dead yeast which has no leavening value and is not interchangeable with other yeast types. Typically used for pizza and pan bread doughs, it is used at a rate of 0.1% of the flour weight, though manufacturer specifications may vary. It is a powerful reducing agent used to increase the extensibility of a dough.

II. Types of baker's yeast

- For most commercial uses, yeast of any form is packaged in bulk (blocks or freezer bags for fresh yeast; vacuum-packed brick bags for dry or instant); however, yeast for home use is often packaged in pre-measured doses, either small squares for compressed yeast or sealed packets for dry or instant. For active dry and instant yeast, in general a single dose (reckoned for the average bread recipe of between 500 g and 1000 g of dough) is about 2.5 tsp (~12 mL) or about 7 g ($^{1}\!/_{4}$ oz), though comparatively lesser amounts are used when the yeast is used in a pre-ferment. In general, a yeast flavor in the baked bread is not noticeable when the bakers' percent of added yeast is less than 2.5%.

III. Yeast & Bakers yeast

- A 6 micrometer micro-organism that is invisible to the naked eye, yeast plays an essential role in regulating the aromatic and fermentation activity of bread. It is also the backbone of a group that has become a global reference in its domain. A historical partner of baking professionals, both Lesaffre and our line of yeasts have grown and evolved alongside them. Inspired by local practices, Lesaffre's bakers yeasts come in liquid, compressed, crumbled, dehydrated and freeze-dried forms, and are each remarkable for their performance, purity and stability. They are ready-to-use or customizable solutions that allow artisan and industrial bakers the world over to produce better bread, more easily. But, above all, they also fulfill a key mission, offering consumers more flavor, better enjoyment and improved health.

III. Yeast & Bakers yeast

From discovery to mastery

- Knowledge of bakers yeast has advanced significantly since 1857, when Louis Pasteur demonstrated the vital role of yeast in the fermentation process. Strains of bread yeasts have been isolated, multiplied and combined. The Lesaffre team has thoroughly mastered these yeasts, derived from living micro-organisms, which have become selective, stabilized ferments for bakers wanting to enjoy the benefits of choice fermenting activity and aromatic profiles that are controlled and constant all year round, regardless of the environment.

III. Yeast & Bakers yeast

Performance modeled on local practices

- In bread yeast, as in our other business domains, Lesaffre is on a quest for excellence: to guarantee efficient, cutting-edge fermentation solutions that are up to the task of our clients' issues. Lesaffre strives to understand and incorporate every aspect of local practices, so as to offer a vast scope of use for our yeasts, and solutions for bread-makers that are suitable for different:

III. Yeast & Bakers yeast

- Performance modeled on local practices

- flour substrates (wheat, rye, buckwheat, etc.) and ingredients (sugar, fat, etc.)
- fermentation processes and types: short, long, blocked, freeze-dried, sponge & dough, etc.
- applications: crusty breads, sweet breads, Viennese baked goods, flatbreads, pizzas, steamed breads, etc.
- desired effects: personalized aromatic signature, light or intense, preservative effect, etc.

III. Yeast & Bakers yeast

Yeasts: taste generators

- Just like sourdoughs, yeasts are fermentation agents that play a leading role. By partially consuming the sugar in flour, they produce not only carbon dioxide and ethanol, which help the bread to rise in the oven, but also a large number of valuable molecules – more than 200 in total – that make up the much sought-after flavor of baked goods.

III. Yeast & Bakers yeast

Yeasts: taste generators

- The quantity of flavor molecules produced varies, depending on production parameters (flours, ingredients, hydration, fermentation time, etc.), but also on the particular metabolism of the yeast. This is a measure of how crucial Lesaffre's expertise in strain and fermentation selection is for bakers wishing to offer taste and enjoyment to their consumers.

III. Yeast & Bakers yeast

Yeast, in all its forms

- The yeast cream produced by Lesaffre fermenters is processed to create different types of yeasts. Filtering and drying, designed to extract some or all of the water, gives each of them a dry mass percentage that is appropriate to their use and to their expected shelf lives.

III. Yeast & Bakers yeast

Yeast, in all its forms

- Today, Lesaffre markets ready-to-use liquid yeasts ideal for automatic dosing, yeasts in block or crumbled form, ready-to-use instant dry yeasts, active dry yeasts for rehydration before incorporation into the mixer, and frozen-dry yeasts for frozen dough (frozen-semi-dry yeasts).