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by **Brice-Audren Riché** CEO of Lesaffre

By 2050, there will be nearly 9 billion people on the planet. So how are we going to eat healthily, stay healthy and protect the environment?

To meet these challenges, we put all our faith in the amazing properties of fermentation and microorganisms.

For nearly 170 years, we have been using our expertise at Lesaffre and working passionately on fermentation. These days, microorganisms are a new territory for us to explore, with countless applications in food, human, animal and plant health and energy.

Our ambition is to be one of the leaders of this movement. All over the the world, in our factories, in applied research centres, in our offices... our employees enthusiastically work on innovations and developments to advance toward this goal.

It is these challenges that motivate us and inspired Lesaffre's mission: working together to better nourish and protect the planet.



## CONTENTS

Lesaffre in a few key figures	4
From yeast to bread making	6
Using fermentation to produce healthy food	9
Microorganisms: endless applications	12
Lesaffre, nearly 170 years of experience	16



# BETTER NOURISH AND PROTECT THE PLANET



### **FERMENTATION EXPERTISE** IN 4 KEY ACTIVITIES

#### BAKING

- Innovation and tailored solutions for every country (yeasts, sourdough starter yeasts etc.)
- Monitoring taste, market and technical trends throughout the world
- Promoting co-development

### WELLBEING AND HEALTH

### Human Health

- Contributing to a balanced microbiota with probiotics
- Increasing the nutritional benefits of food

### Animal health

### O Phileo

- Strengthening the immune defences of animals
- Reducing the use of antibiotics

#### Plant health

- Agrauxine
- Promoting sustainable farming
- Reducing the use of pesticides
- Protecting crops and improving crop nutrition

### FOOD TASTE AND PLEASURE

### Ennolys

- Flavour creation
- C Fermentis
- Enhancing the taste of fermented drinks (beers, wines, kombucha etc.)
- Biospringer
- Reducing salt or sugar without sacrificing taste

#### INDUSTRIAL BIOTECHNOLOGY

- OLeaf
- Developing yeasts for the production of bioethanol

### Procelys

• Developing fermentation nutrients, used for the production of pharmaceuticals, antibiotics etc.

#### C US

• Drying food, nutraceutical, cosmetic and pharmaceutical ingredients

### Did you know?

**1 out of 3 breads** worldwide are made with Lesaffre yeast.

### LESAFFRE IN A FEW KEY FIGURES



### What about CSR?

4

1,100,000 hectares of field crops treated in one year by our products that are alternatives to pesticides

About 80% of water returned compared to water consumed

63 corporate sponsorship projects

### LESAFFRE WORLDWIDE

• 10 R&D centres • 62 applied science centres

• more than 70 production sites worldwide

With its 62 applied science centres all over the world, Lesaffre expands its knowledge of local cultures, consumption patterns and market trends to develop innovative solutions tailored to the needs and expectations of every country.

• 8 production sites • 6 R&D centres • 5 Applied research centres More than 2,000 employees,



Among these 62 centres, Lesaffre has 50 Baking Centres<sup>™</sup> that bring together teams of bread-making specialists to help professionals develop their bread

### **FOCUS ON FRANCE**

including 200 R&D experts

## FROM YEAST TO BREAD MAKING

### What is yeast?

Yeast is a living, microscopic organism that is naturally present in the air. There are a large number of yeast species, the most well known is saccharomyces cerevisae, from the Latin "saccharo" for sugar and "myces" for fungus:microscopic mushrooms that feed on sugar.



So there is not one, but millions of types of yeast. For nearly 170 years, Lesaffre has collected a large number of yeasts and selected the best performing to cultivate them on a large scale. By crossing different yeast strains yeast producers get strains that are best suited to particular uses.

### Good to know:

6

Yeast is different from baking powder which is used to make the vast majority of pastries and cakes.



**Centrifugal separator** 

Storage of cream yeast

# **PRODUCTION OF** BAKER'S YEAST









Dry yeast

# **Received wisdom:**

# Some breads don't contain yeast.

FALSE! All breads\* contain yeasts, including sourdough bread! Traditional sourdough is made by letting flour and water ferment and naturally contains of bacteria yeasts. Yeast strains can also be added to sourdough and can be selected for their taste profiles.

\*According to the definition of bread.

### **Bread making: limitless innovation**

Lesaffre develops innovative bread making solutions all over the world for artisan bakers, manufacturers, distributors, wholesalers, hoteliers, restaurateurs and individuals. Its industrial expertise and R&D are harnessed to explore new solutions to respond to the latest market trends.



**Yeasts** Make bread dough rise through fermentation and help to add flavour



Improvers Make the work of bakers easier and enhance the characteristics of their bread





Premixes Enable bakers to experiment with recipes with different tastes and unique textures

Improve the taste of bread making



"As the world's population continues to grow, feeding the planet in a sustainable and healthy way has become one of the main concerns of society this century. At Lesaffre, we believe that bread, a source of complex carbohydrates, plant proteins and fibre, is one of the most promising solutions for the future." Hervé Bolze, Marketing Director, Bread Making at Lesaffre



### **USING FERMENTATION TO PRODUCE HEALTHY FOOD**

### What is fermentation?

Fermentation is a biochemical reaction that occurs in oxygen-free environments and transforms an organic substance through the action of microorganisms (or, more precisely, through enzymes produced by the latter). These microorganisms, invisible to the naked eye, such as yeasts or bacteria, are also called fermentation agents.

Fermentation was first used in the food sector for: bread, alcohol (beer, wine) and cheese. Over the last fifty years, the possible uses of fermentation have multiplied in numerous sectors such as the healthcare, environmental, biotechnology, energy and chemical industries.





### Did you know?

Fermentation is an ancient process. 5,000 years ago, Egyptians were already using fermentation to make bread and beer. They also used it unknowingly it to improve the taste of and preserve their food.

### Some examples of fermentation at Lesaffre



Combining the pleasure of taste with a healthy diet

As a world player in the production of yeast extracts and yeast derivatives, Biospringer helps its clients develop tasty and nutritionally balanced recipes, with less fat, salt and sugar.

"At Lesaffre, we have a collection of nearly 10,000 yeasts and bacteria in our strain bank. This genetic diversity, combined with the company's fermentation expertise, enables us to generate more than 3,000 different types of peptides and produce flavours as diverse as white meat, vegetables and cheese."



Rudy Menin Research & Development Manager Yeast Extracts and Derivatives at Lesaffre

### Yeast extract: what is it?

Yeast is composed of proteins, amino acids, vitamins and minerals, protected by a cell wall. The contents of this cell, separated from its wall, become yeast extract.

Like yeast, yeast extract is a natural ingredient used by many professionals in the food industry. When used in the kitchen, yeast extract improves the taste of meals, just like herbs and spices.

### Yeast extract has several benefits





**Promoting innovation in fermented drinks** Fermentation is a key step in the process of creating numerous fermented drinks - the list includes beer, wine, spirits and many more. By developing active dry yeasts and yeast derivatives for the drinks industry, Fermentis plays a key role in this process, guaranteeing product quality and helping to enhance sensory properties. For example Fermentis works with brewers to select the right active dry yeast to give the beer a specific flavour profile, such as fruity and hoppy, spicy, floral etc.

"In 2020 Lesaffre started work on the the construction of a unique space, the Fermentis Campus. This will house the Fermentis teams, partners and clients and the Fermentis Academy; a place specifically for creating and sharing knowledge about fermented drinks. This investment by Lesaffre symbolises the desire of the Group and Fermentis to work closely with businesses and its clients and to develop with and for them scientific and applied expertise in the field of alcoholic and alcohol free fermented drinks."



### Natural flavour creation Ennolys' main activity in France is manufacturing natural aromatic molecules through fermentation, such as natural vanillin or lactones, for use by flavourists and food manufacturers.



Thomas Rager Sales and Marketing Director at Ennolys





Stéphane Meulemans **CEO of Fermentis** 

"We are committed to providing our clients with solutions that give consumers access to healthy, natural food. We have made significant investments over the past 5 years to meet the high demand from consumers for natural products. So we can offer a range of clean label and sustainable ingredients."



### MICROORGANISMS: ENDLESS APPLICATIONS

With nearly 170 years of expertise in fermentation, it was only natural that, after yeasts, Lesaffre started to focus on all microorganisms such as bacteria, which, like yeast, are fermentation agents. Solutions for the future to help better nourish the planet, these microorganisms have a high nutritional value and many other benefits for a safer, healthier and more natural diet.

# THE POTENTIAL OF MICROORGANISMS

### 1/Boosting the immune system

100,000 billion microorganisms live in our bodies: they promote good digestion, increase our vitality and act on our moods and behaviours.



Bacteria have significant antifungal properties to fight off parasites and help reduce pesticide use.

### 2/Manufacturing pharmaceutical products

Some bacteria are used to create insulin and antibiotics.



#### **Biotechnology for human health**

Procelys is the Lesaffre entity which specialises in fermentation nutrients for the biotech industry. These nutrients (yeast extracts, dry yeast, autolyzed yeast and yeast peptones) are used for the production of biopharmaceuticals, antibiotics, culture media for biological diagnostic tests, probiotics or bioingredients for human and animal consumption.

"To meet global demand and respond to the constantly evolving biotech industry, Procelys is constantly innovating through its network of laboratories and "The Labs", three laboratories dedicated to the study of bionutrients for microbial applications. We help manufacturers to optimise their industrial fermentations and contribute directly to improving the health and wellbeing of our planet's living beings."



lérôme Grislair CEO of Procelvs



#### Improving human health and wellbeing

Gnosis by Lesaffre specialises in nutrition and human health, and uses microorganisms and biotransformation processes such as fermentation to create active ingredients, probiotics, nutritional and functional yeasts to improve human health and wellbeing. Its expertise is built around 5 key areas: general wellbeing and strengthening the immune system, digestion, strong joints, reproduction and women's health, and mood and cognitive health. What does that mean in practical terms?



Marc Philouze

"Countless research has shown the beneficial effects of chondroitin supplements on joint tissue degeneration and pain caused by osteoarthritis. While this product is traditionally imported from China where it is extracted from animal carcasses, Lesaffre is the first company to offer non-animal chondroitin obtained through fermentation. We have chosen France to produce this innovative and sustainable alternative."



#### **Biotechnology for plant health**

Agrauxine supports the agricultural sector by developing and manufacturing products derived from microorganisms for crop protection - biocontrol - and plant growth stimulation - biostimulation. These products reduce the use of traditional chemical fertilizers, significantly minimise the level of residues in agricultural products and promote new high environmental value (HEV) production systems.

"Lesaffre's commitment to Agrauxine means we can offer professionals in the agricultural world technically advanced solutions, to replace chemical solutions, which will help to bring about a new way of farming. We are at the helm of an agroecological transition: we are encouraging all players, farmers, cooperatives and retailers to join the movement to create the agricultural model of the future."



Improve animal welfare and health Phileo is the Lesaffre entity that develops innovative nutritional solutions using product fermentation to improve animal health and performance. The yeasts produced reduce the use of antibiotics in animal feed to wise use by naturally strengthening animals' immune defences. Yeasts also improve their wellbeing through better digestion.



Frédérique Clusel CEO of Phileo



Hugo Bony CEO of Agrauxine

"We offer our partners products and services that help them to more effectively reduce livestock stress, prevent disease and improve gut health. I am confident that microorganisms and fermentation derived ingredients are one of the best responses to current demands for a healthy and sustainable way of farming."



### LESAFFRE, **NEARLY 170 YEARS OF EXPERIENCE**





Find out more at **lesaffre.com** 



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