

LALLEMAND OENOLOGY

Visionary Biological Solutions



LALLEMAND OENOLOGY

Original *by culture*

THE LALLEMAND COMPANY

A world-leading expert in the development, production and sale of microorganisms and their derivatives

- ▶ A Canadian company established in the late 19th century
- ▶ Privately-owned and 3rd generation of the Chagnon family since 1952

IN 2020

OVER **200**
PEOPLE IN R&D

45
PRODUCTION
SITES

4500
EMPLOYEES

10
RESEARCH LABS

45 COUNTRIES
ON 5 CONTINENTS

10
BUSINESS UNITS
FOR A WIDE VARIETY
OF APPLICATIONS

- Bakery
- **Oenology**
- Animal nutrition
- Human nutrition and health
- Biofuels & spirits
- Brewing
- Bio-ingredients
- Meat and Dairy Products
- Pharma
- Plant care

2

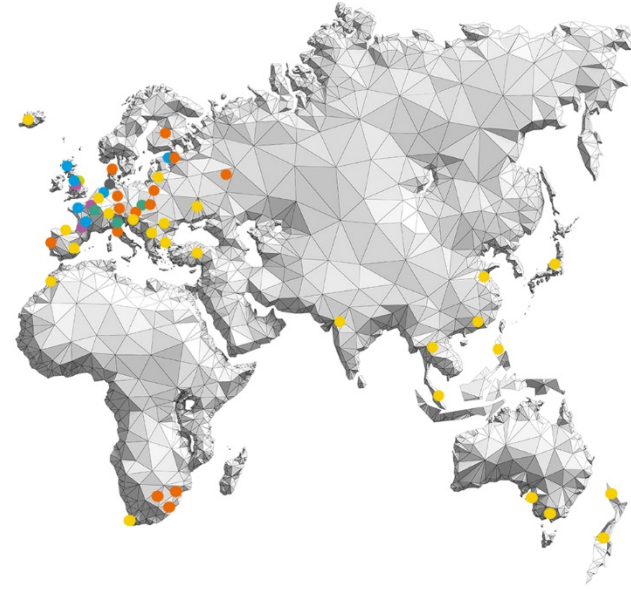
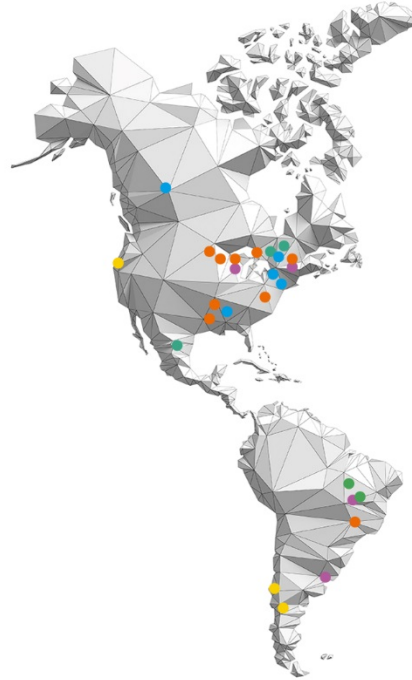


THE LALLEMAND COMPANY

International Reach

PRODUCTION SITES

- Yeast (24)
 - Bacteria (6)
 - Others (8)
-
- LABORATORIES (9)
 - OTHER SALES & DISTRIBUTION SITES (26)



LALLEMAND OENOLOGY

The expert in wine microbiology and fermentation

- ▶ Unique expertise, 100% dedicated to the world of wine since the 1970s
- ▶ A pioneer in innovation and creativity, with research benefiting the wine industry
- ▶ Continuous investment in selection, characterization, development and production of natural wine yeasts and their derivatives, as well as natural wine bacteria, to improve fermentation and wine quality
- ▶ Development of unique and original natural solutions to support each step in the winemaking process



LALLEMAND OENOLOGY

The leader in the development of visionary microbiological solutions

OVER **450**
PEOPLE*

**Excluding administrative, logistic and production services*

Our multidisciplinary teams consisting of

- Microbiologists
- Food engineers and agronomists
- Oenologists
- Technicians
- Yeast and Bacteria Physiologists
- Science PhDs
- QC specialists
- MBAs
- Marketing and communication
- Technical sales

100%

PRESENT IN ALL
WINEMAKING COUNTRIES

SUBSIDIARIES AND DISTRIBUTION
PARTNERS NETWORK IN ALL
WINEMAKING COUNTRIES

A unique and diverse network :

- Consultants
- Oenologists
- Winemakers
- Masters of Wine
- Sommeliers
- Retail and Distribution
- Wine buyers



LALLEMAND OENOLOGY

The leader in the development of visionary microbiological solutions

100%

EXPERTISE ON WINE MICROORGANISMS
AND THEIR APPLICATIONS

OVER 250 MICROORGANISMS
PRODUCED ALL ISOLATED FROM MUST
FERMENTATION

7

MICROBIOLOGICAL PRODUCT
CATEGORIES

30

PEOPLE 100% DEDICATED TO
R&D FOR OENOLOGY

OVER 70
PARTNERS
(UNIVERSITIES/INSTITUTES)

OVER 25
THESES SUPPORTED
IN THE LAST 10 YEARS

10
PATENTS
IN 20 YEARS

6



LALLEMAND OENOLOGY

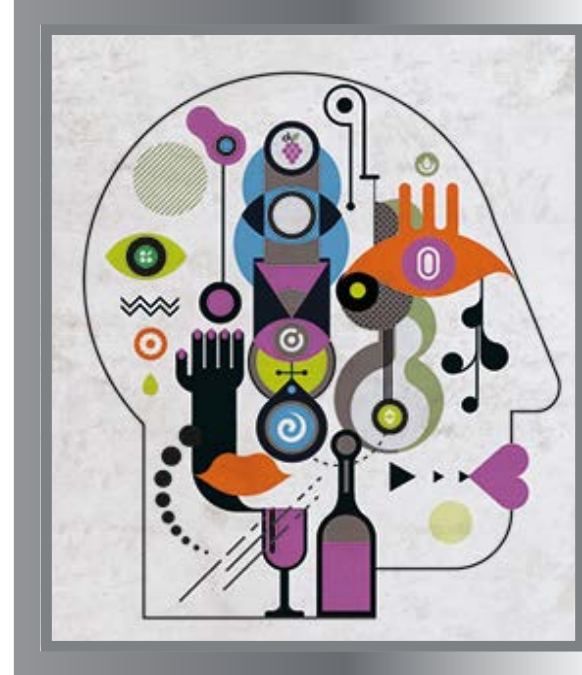
Original by culture

AUTHENTIC INNOVATIVE FORCE FOR THE WINE INDUSTRY

- ▶ Quality technical partnerships with our distributors
- ▶ Long-term collaborations with renowned scientists
- ▶ Continuous investment in cutting edge research
- ▶ Constantly enriching our expertise with our dedicated R&D centres which includes 30 people
- ▶ Committed to sustainable winemaking
- ▶ Develop revolutionary innovations and new winemaking practices

WORLDWIDE PRESENCE

- ▶ Enduring and ethical relationships with industry professionals – distributors, scientists and consultants, vine growers, winemakers, researchers... in all wine producing countries



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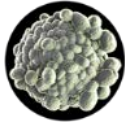
LALLEMAND OENOLOGY

Continuous investment in microorganism selection and production and their derivatives



1974

1st selected *Saccharomyces cerevisiae* winemaking yeast, produced in active dry format



1985

1st yeast nutrients and fermentation activators based on inactivated yeasts



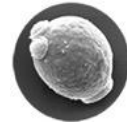
1989

1st *Oenococcus oeni* winemaking bacteria, produced in freeze-dried format for sparkling wines



2000

1st specific inactivated yeasts, selected for different applications in winemaking



2009

1st non-*Saccharomyces* yeasts produced in active dry format, and freeze-dried *Lactobacillus plantarum* bacteria, for winemaking



2013

Development of inactivated yeasts selected for applications on in the vineyard to optimize grape quality



2015

First yeast hulls produced from a wine yeast selected for its adsorbing capacity in must and wine

8



LALLEMAND OENOLOGY R&D

Anticipating trends with natural innovations

OUR STRENGTHS

- ▶ Microbiology is our primary source of inspiration, exploration and innovation
- ▶ We work closely with our distributors and clients
- ▶ We are at the cutting edge of scientific and winemaking projects worldwide
- ▶ We develop original and recognized solutions
- ▶ We control our production processes from A to Z
- ▶ We contribute to unique and quality wines

OUR SOURCES OF INSPIRATION

- ▶ We believe in science as a source of sustainable innovation
- ▶ We borrow from nature and biodiversity
- ▶ We find inspiration in living microorganisms
- ▶ We understand and anticipate winemakers' and market needs and provide natural solutions



LALLEMAND OENOLOGY R&D

Thorough and trustworthy research

Development and innovation strategies focused on tomorrow's issues

NEW ENVIRONMENTAL CONSTRAINTS

- ▶ Climate changes
- ▶ Fewer chemical inputs

NEW MARKET EXPECTATIONS

- ▶ Organic wines
- ▶ Wines without or low SO₂
- ▶ Fresh and balanced wines
- ▶ Lower alcohol wines
- ▶ **Food safety and security**

NEW PRACTICES

- ▶ Biocontrol and bioprotection
- ▶ Longevity of aromas
- ▶ New grape varieties
- ▶ Grape quality optimization
- ▶ Wine transport and preparation

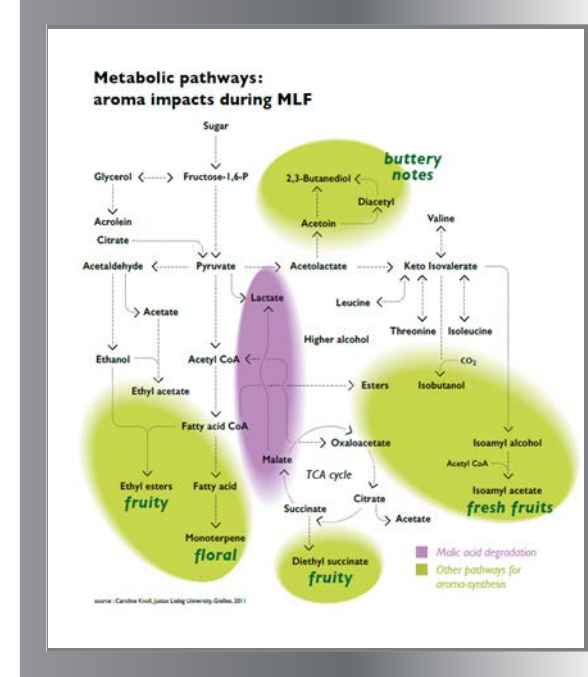


LALLEMAND OENOLOGY R&D

Collective intelligence to anticipate and achieve excellence

FUNDAMENTAL RESEARCH

- ▶ Three internal competence centres with researchers in metabolism, characterization, and biochemical and physical microorganism composition
- ▶ Unique private collection of over 2,000 yeasts and 10,000 bacteria
- ▶ Four Lallemand Oenology researchers delegated to external research institutes
- ▶ Over 70 international collaborations with scientists
- ▶ Over 25 theses supported in the last 10 years
- ▶ Development of innovative solutions, some of which have been patented



LALLEMAND OENOLOGY R&D

Characterization, validation and acceleration

INTERNAL APPLIED RESEARCH

- ▶ Resources dedicated to characterization and validation studies for our new solutions
- ▶ Two micro-vinification facilities
- ▶ Two pilot cellars for winemaking trials
- ▶ Three laboratories to carry out microbiological, physical/chemical and sensory analyses
- ▶ Technical support from our distribution and winery partners
- ▶ Technical institutes validation for practical applications of our research



LALLEMAND OENOLOGY R&D

Production process expertise

RESEARCH AND INNOVATION PROCESS

- ▶ Internal R&D teams specialized in production processes
- ▶ Fine-tuning of unique and specific recipes for each microorganism and implementation at production sites
- ▶ Continuous development of innovative and optimized processes



WINE
YEASTS



WINE
BACTERIA



NUTRIENTS
/PROTECTORS



SPECIFIC
INACTIVATED YEASTS



ENZYMES



CHITOSAN

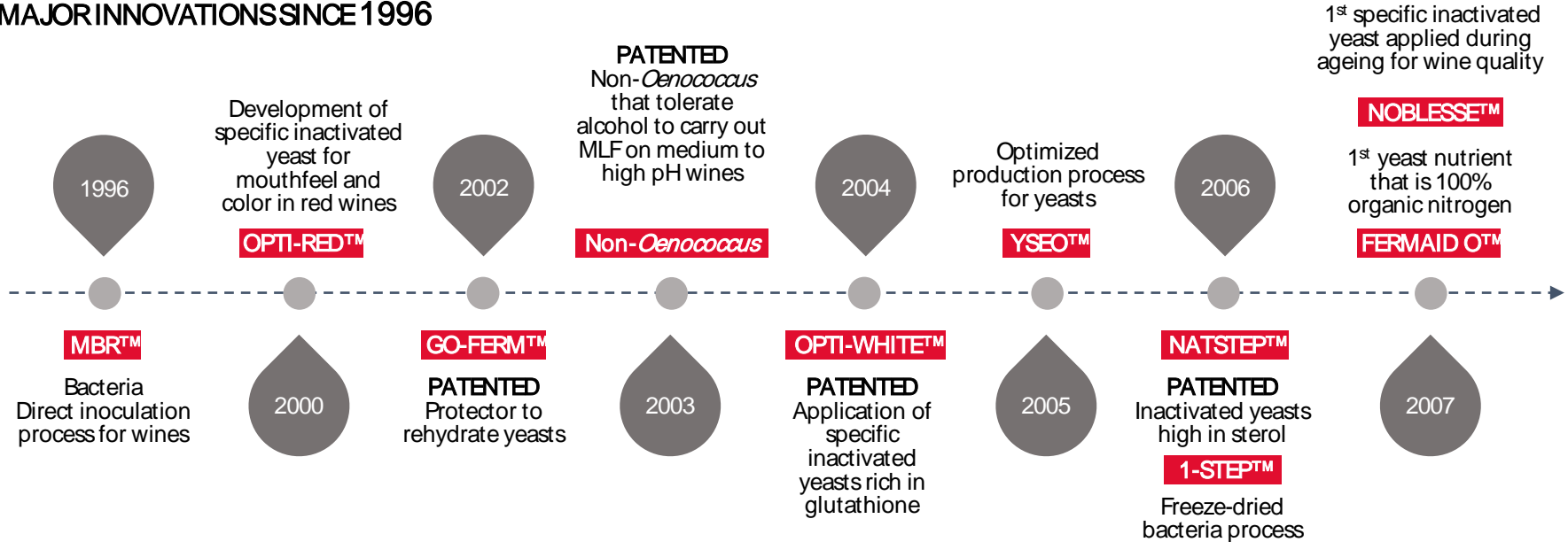


VINEYARD
SOLUTIONS

LALLEMAND OENOLOGY R&D

Original by culture, innovative exploration and respect for intellectual property

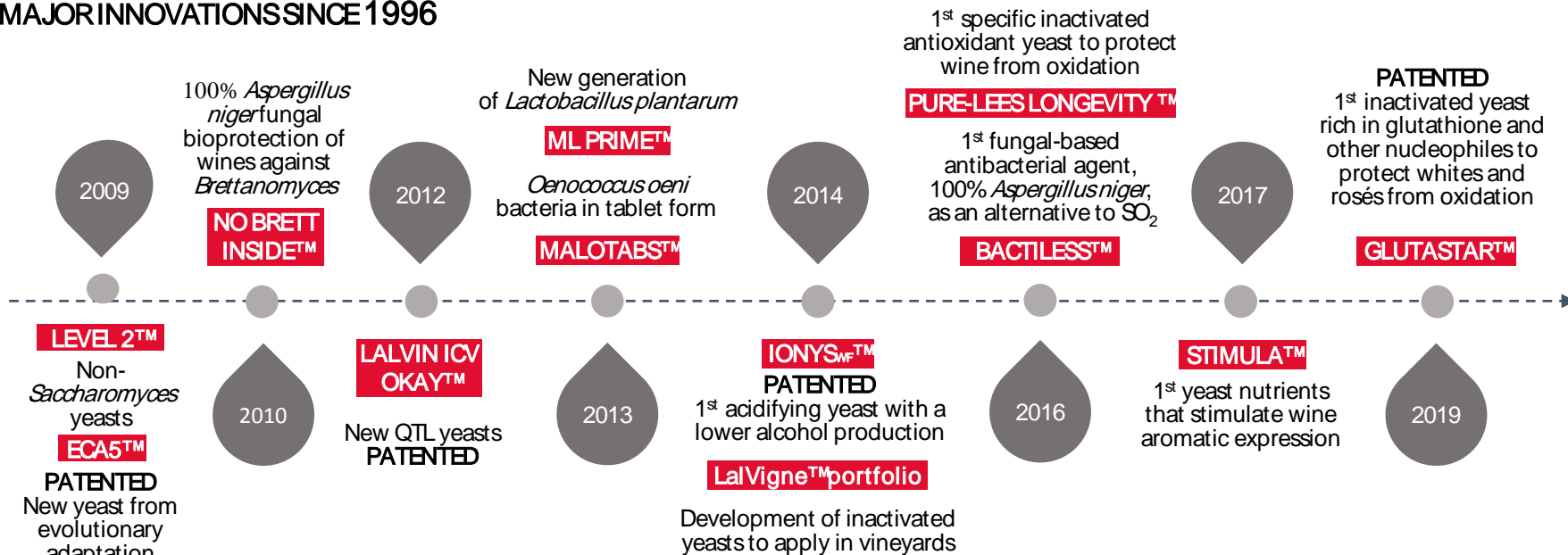
MAJOR INNOVATIONS SINCE 1996



LALLEMAND OENOLOGY R&D

Original by culture, innovative exploration and respect for intellectual property

MAJOR INNOVATIONS SINCE 1996



LALLEMAND OENOLOGY PRODUCTION

Industrial expertise and an understanding of the production process within our 10 specialized units

WINEYEASTS

- ▶ Grenaa in Denmark
- ▶ Montreal in Canada
- ▶ Passau in Germany
- ▶ Vienna in Austria
- ▶ Flexistowe in Great Britain

Over 200 yeast strains produced

WINEBACTERIA

- ▶ Saint-Simon in France

Over 30 bacterial strains produced

SPECIFIC YEAST DERIVATIVES

- ▶ Tallinn in Estonia
- ▶ Montreal in Canada
- ▶ Grenaa in Denmark

Over 30 specific yeast fractions produced

ENZYMES

- ▶ Verona in Italy

Over 20 specific formulations



LALLEMAND OENOLOGY QUALITY

Strong commitment, certified quality

- ▶ Certified quality guaranteed in all our plants
- ▶ Strict controls and audits in all our units
- ▶ Traceability of all products

All our products:

- ▶ Undergo numerous quality tests at each step
- ▶ Are guaranteed not genetically modified, non animal, non allergenic and meet OIV standards
- ▶ Can be used to produce organic wines according to country-specific legislations
- ▶ Certain products are certified as KOSHER & PARVE and some KOSHER for PASSOVER



LALLEMAND OENOLOGY PORTFOLIO

*Synergistic action
to reveal your
wines' individuality*



WINE
YEASTS



WINE
BACTERIA



NUTRIENTS
/PROTECTORS



SPECIFIC
INACTIVATED YEASTS



ENZYMES



CHITOSAN



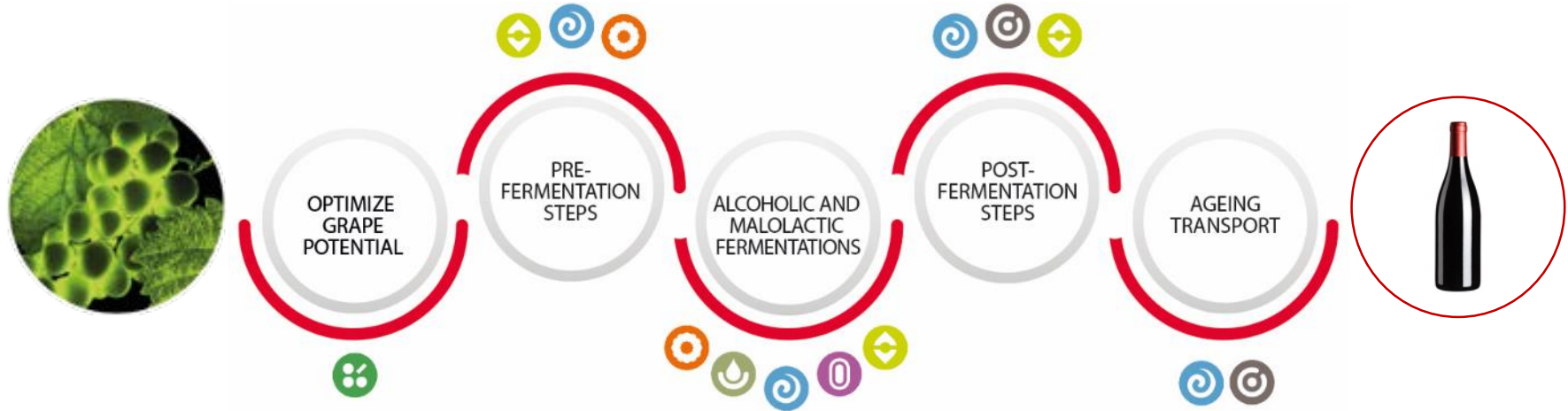
VINEYARD
SOLUTIONS

LALLEMAND OENOLOGY PORTFOLIO

Strong and continuous relationships

- WINE YEASTS
- WINE BACTERIA
- NUTRIENTS AND PROTECTORS
- SPECIFIC YEAST DERIVATIVES

- CHITOSAN
- VINEYARD SOLUTIONS
- ENZYMES



WINE
YEASTS



WINE
BACTERIA



NUTRIENTS
/PROTECTORS



SPECIFIC
INACTIVATED YEASTS



ENZYMES



CHITOSAN

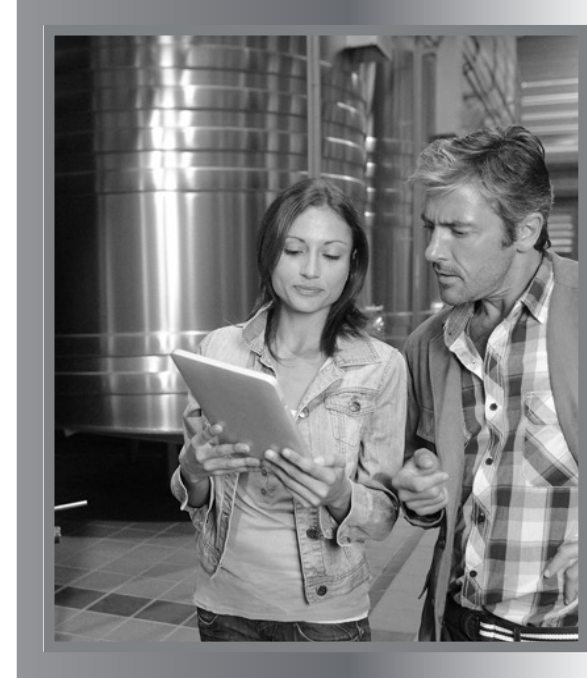


VINEYARD
SOLUTIONS

LALLEMAND OENOLOGY TEAMS

Team spirit and strong involvement

- ▶ Expert and experienced people around the world who share our knowledge
- ▶ Technical support dedicated to our distributors
- ▶ Daily contact with winemakers, oenologists, wineries and recognized specialists in each winemaking region
- ▶ Support in defining winemaking protocols and solutions
- ▶ Fruitful exchanges with technical institutes and universities world-wide



LALLEMAND OENOLOGY TEAMS

Sharing is how we learn -
another way to cultivate our passion



SCIENTIFIC EXCHANGES

- ▶ Scientific conferences
- ▶ Entretiens Scientifiques Lallemand
- ▶ Scientific publications and theses

TECHNICAL DISCUSSIONS

- ▶ Technical meetings
- ▶ Tasting
- ▶ Trade fairs
- ▶ Publications:
 - Wine Expert
 - Under Investigation
 - Technical articles
 - Winemaking Update

INTERNATIONAL TRAINING

- ▶ International schools:
 - ML School
 - WYS School
 - WYN School
 - LaVigne™ Academy
- ▶ Awarding bursaries for excellence
- ▶ Masterclasses



LALLEMAND OENOLOGY

Visionary biological solutions

Being original is key to your success. At Lallemand Oenology, we apply our passion for innovation, maximize our skill in production and share our expertise, to select and develop natural microbiological solutions. Dedicated to the individuality of your wine, we support your originality, we cultivate our own.

