In the early 20th century in Montréal (Canada), Lallemand’s original focus was on supplying fresh bakers yeast to the local market. In the early 1970s, Lallemand began producing distiller’s yeast for Seagram’s and a few other distillers in Canada and abroad. This was the beginning of what has become the Lallemand Specialty division, which is one of the world’s leaders in the supply of yeast, bacteria and yeast derivatives to the fermented beverage, animal and human nutrition industries. Lallemand produces its yeasts at plants in North America, Europe and South Africa.

Lallemand Ethanol Technology was formed in 2004 with the acquisition and integration of regional alcohol and distilling activities into a new global business unit. It became part of the legal entity Lallemand Specialties Inc. to act as the marketing and distribution arm of the Specialty division to the worldwide fuel ethanol and distilling industries. It is headquartered in Milwaukee (United States) and uses a network of refrigerated (for fresh yeast) and other warehouses to serve its customers.

**OUR PRODUCTS**

Lallemand Ethanol Technology specializes in the development, production and marketing of yeast, yeast nutrients and antimicrobials. The main products are:

**Fresh yeast** including a variety of strains and formulations developed to meet a wide range of customer needs in the fuel ethanol and beverage alcohol industries.

**Stabilized liquid yeast** is a new form of fresh yeast for use in fuel ethanol and distilled beverage alcohol fermentations. It contains a distiller’s yeast strain, selected for high temperatures and alcohol concentrations, that has been stabilized to extend its shelf life. It can be dosed by weight or volume using an automated handling system.

**Active dry yeast** for specialty fuel ethanol and beverage alcohol applications, many of which are proprietary strains developed for specific fermentation processes.

**Yeast nutrients** designed to deliver the correct nutrient balance for optimal growth and productivity in cases where the fermentation media is lacking critical components.

**Microbial control agents** that enable quality fermentations with minimal bacterial contamination.

Lallemand Ethanol Technology supports customers with a team of experienced technical sales and service professionals who serve as consultants to alcohol plant staff, identifying specific needs and providing targeted product solutions, training, troubleshooting and laboratory services.

The Ethanol Technology Institute was established by Lallemand Ethanol Technology to provide the highest quality industry education. The Institute hosts The Alcohol School for fuel ethanol and beverage alcohol producers. The School is held twice per annum, once in North America and once in Europe. The Ethanol Technology Institute also publishes *The Alcohol Textbook*, the industry’s leading comprehensive technical reference.
RESEARCH AND DEVELOPMENT

The Lallemand Ethanol Technology laboratories are located in the Industrial Partnership facility of the Canadian National Research Council’s Biotechnology Research Institute (BRI) in Montréal. Lallemand’s specialized laboratories are used for yeast scale-up, fermentation modelling and molecular biology. Available services include custom product development and analytical support. Internal research projects are focused on strain selection, yeast nutrition and fermentation applications. Lallemand Ethanol Technology also collaborates with academic researchers on core research topics and with customers for pilot- and production-scale applications development.

SPECIALTY FERMENTATION INGREDIENTS

Selected high performance yeast strains: In addition to custom-produced proprietary yeast strains, Lallemand Ethanol Technology and other Lallemand businesses have selected and commercialized a variety of valuable *Saccharomyces cerevisiae* strains for specific applications, such as:

- Fermentation of grain mashes in continuous processes
- Batch fermentation of grain mashes
- Character differentiation in Scotch malt whisky and grain whiskey production
- Batch fermentation of cane juice and molasses for beverage alcohol production
- Fermentation of beet molasses and other by-products of the sugar industry
- Continuous and batch fermentation of cane juice and molasses for fuel ethanol production.

Yeast formulations: No matter what the strain, a yeast product must be readily available to the fermentation process with consistent viability and vitality for optimal performance. Yeast strains are available in a variety of forms, each with unique characteristics:

- Active dry yeast products, available in sachets, bags or boxes, meet the needs of many producers because this commercial yeast formulation exhibits the best storage stability (up to two years unrefrigerated).
- Fresh bag (or crumble) yeast products have not been fully dried and therefore provide benefits to producers due to outstanding vitality. Short fermentation lag times can result in superior fermentations.
- Stabilized liquid yeast products can be delivered to the fermentation process directly from the shipping container or storage tank using automated dosing control equipment; this yeast form provides superior ease of use and fermentation performance.

Nutrient formulations: Yeast fermentations, when provided complete nutrition throughout the production process, finish faster with higher yields and fewer contaminating by-products. Research has shown that most commercial-scale fermentations are nutrition-limited in some manner. A variety of yeast nutrient components and formulated products are available to producers. With Lallemand Ethanol Technology’s experienced technical support, proper nutrient products can be selected and implemented for improved bottom-line results in the production facility.

Microbial control solutions: The two most effective microbial control tools available to fuel ethanol and beverage alcohol producers are a) cleanliness, and b) fermentation process management. When more tools are required, fuel ethanol producers can rely on proprietary antimicrobial products, troubleshooting and plant personnel training from Lallemand Ethanol Technology.

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