



DIAZYME®
NOLO

NO ALCOHOL. HIGH EFFICIENCY. GREAT TASTE.



BETTER TASTE

No change in yeast is required so the taste of the NOLO beer is improved compared to regular production methods.

The lower alcohol content achieved before dealcoholisation means that more aromatic compounds can be added back, improving taste.



GREAT BODY

With DIAZYME® NOLO larger molecules (IMOs) are formed *in-situ*, and, as they are not fermented by the yeast they remain in the beer, providing more mouthfeel to NOLO beer.



INCREASED THROUGHPUT

Up to 60% more beer can be produced via a dealcoholisation process OR the same volume can be produced with a reduction of raw materials.

Production capacity can be increased vs high mashing temperature process and inverse mashing.



REDUCED OPEX

As a lower alcohol content is achieved before dealcoholisation, less energy is needed to remove the remaining alcohol.

NO CAPEX required to use DIAZYME® NOLO and potential reduction in CAPEX required for dealcoholisation plant



Low alcohol

DIAZYME® NOLO converts fermentable maltose into non fermentable isomaltoligosaccharides (IMOs).

Since these are not fermentable by the yeast, they do not contribute to alcohol production.

Reduction of RDF (%) in 100% malt recipe with increasing dosage

EBC - RDF (%)



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Definition of NOLO

Definitions for no- and low-alcohol beers vary greatly from country to country and there is a broad range of terminology that refers to NoLo: “no”, “free”, “zero”, “low”, “reduced”.

Some common standards for beers to be considered NOLO may be:



Levels shown are an indication as legislation varies per country.

NOLO is outperforming the rest of the beer market.¹

NOLO beer represents:



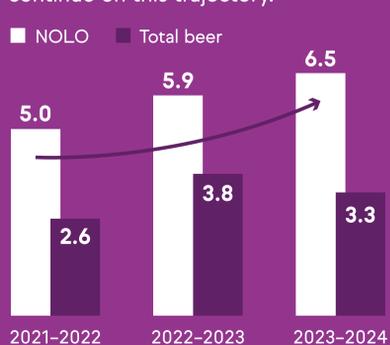
70 million
hL/year



3.5%
of the beer market

¹ Euromonitor

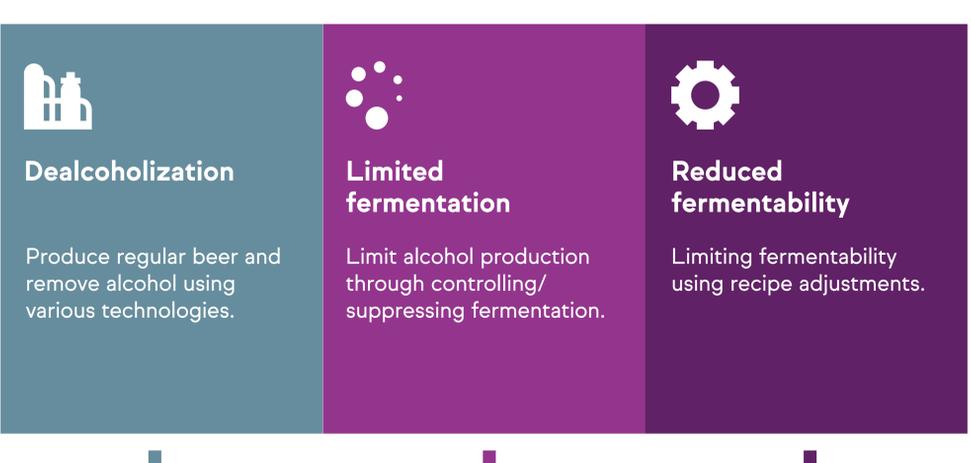
NOLO beer is the fastest growing beer category and is forecasted to continue on this trajectory.



Key drivers for growth

- Enjoyment of beer in moderation
- A growing trend for enjoying beer in low/no-alcohol contexts

How is NOLO produced today?

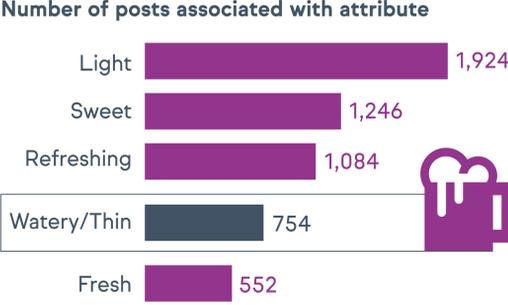


All these methods have a negative impact on taste and flavour of the beers, with some running high operational costs or presenting process contamination risks.

Consumers expect higher body and better taste from NOLO beers.²

Consumers appreciate the light, refreshing and sweet characteristics of NOLO beers but can find them **watery** and **thin**.

Number of posts associated with attribute



53%
of consumers dislike the “bread” taste of NOLO beer



51%
of consumers don't enjoy the “wort” flavor of NOLO beer

² Social Media Analysis proprietary of IFF- Feb 2024 (Analysis of 51000 posts made between October 2021 and January 2024)

DIAZYME® NOLO in Action



Great taste
Brand authenticity is preserved as no change in yeast is required and full fermentation can take place. The taste of NOLO beer is also improved compared to reduced fermentation methods.

Great body
The larger molecules (isomaltoligaccharides or IMOs) formed *in-situ* by DIAZYME® NOLO are not fermented by the yeast and remain in the beer, providing more mouthfeel to NOLO beer.

DIAZYME® NOLO boosts your process.

The benefits you could receive by adding DIAZYME® NOLO to your existing process

	⚡ Energy savings	🏭 Increase throughput	🌿 Reduce grist/hL beer ratio
Dealcoholization	✓	✓	✓
Limited fermentation	✓		
Reduced fermentability		✓	

A step further towards more sustainable brewing

When combining DIAZYME® NOLO with dealcoholization process, the same beer volume can be produced with approximately 37% less grist, leading to up to 37% reduction in grist-associated environmental impacts*.

As an example, for a brewery located in North America producing 1million hL of beer/year and using 100% malt as their recipe, the potential savings could represent:



*Note that these savings relate only to environmental impacts associated with used grist.

Please note that the estimated reduction potentials will vary based on the specific grist composition and geographical regions. Please reach out to IFF if you would like to calculate reduction potentials specific to your case.

IFF: CATALYZING THE FUTURE OF BREWING

The world of brewing is fast-paced, creative and fun. Market trends and consumer behaviours are changing all the time so there is always something new to be excited about. That's why we love nothing more than to help you capitalize on new trends by designing extraordinary products and, at the same time, helping to design the processes to make them.



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