Sequencing genome of brewer's yeast could lead to new flavors, strengths and qualities

Imagine ales with a richness of flavour you never before imagined, lagers that can be brewed warm, or a Trappist-style beer that would never put you over the limit. It may sound like indulgent fantasy, but such beers could soon become cold, wet reality, thanks to a Belgian lab which is analysing the DNA of hundreds of species of brewing yeast.

The research promises, for the first time, to reveal how the tiniest differences in DNA affect the flavours, strengths and qualities of beers they produce and to make possible the creation of new yeasts which will produce beers with flavours and properties never seen or tasted before.

The research is being led by Dr Kevin Verstrepen at the University of Leuven and the VIB research institute. Together with the help of US-based White Labs, his lab has embarked on the first ever project to systematically sequence the DNA of 220 species of brewers' yeast.

The results have been eye-opening, particularly in the area of flavour – the team have already developed a yeast which, Verstrepen says, produces 50 per cent more flavours than even the most flavoursome example previously available, giving an extraordinarily aromatic beer.

There are also several yeasts genetically modified in this way stored in the lab freezer. They are available for use by any adventurous brewers, although there have been no takers yet.

But for now, his sights and those of his team are set firmly on the more humble, and, arguably, more worthy mission of making interesting, tasty new beers. And doesn't the future for brewers and beer lovers look exciting even without genetic engineering? "Yeah, exactly. And [regarding GM] you always have to ask yourself, do we really need this, and do we really want this? There will always be a market for traditional beers. But, on the other hand, we also don't have to be too restricted and old-fashioned, and it could be nice to expand our palate a little bit, and to be a little bit more adventurous — as long as it's completely safe. But for many of the things we're doing that's pretty much guaranteed."

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