





Decades of collecting and preserving yeast strains

The National Collection of Yeast Cultures (NCYC) provides a commercial service to identify, store and supply yeast cultures, storing over 600 brewing strains alone. Carmen Nueno-Palop, Business Development Manager at NCYC detailed the company's ongoing responsibilities to Jordan Yallop.



ounded in 1948, the National Collection of Yeast Cultures (NCYC) originated because British brewers realised the value of their yeast cultures and putting them in safe deposit to keep them secure. The NCYC maintains a collection of over 4,400 strains and also provides commercial services such as the secure storage of proprietary yeast strains for customers on a confidential basis, strain identification, yeast propagation and supply of yeast cultures.

For more than 70 years NCYC has collected and characterised yeasts of importance to the food and brewing industries.

Carmen Nueno-Palop, Business Development Manager said: "We don't just sell yeast. We discuss customers' needs and work together with them to achieve their goals."

Currently located at the Quadram Institute (former Institute of Food Research) in Norwich, England, NCYC today offers a range of services to industry.

Ms Nueno-Palop said: "We supply yeast worldwide from Europe to Africa, Australia, or America. Our production capacity has duplicated over the past years, and we plan to extend it as demands increase. Sales by country in our website last year were UK 33%, USA 28%, Republic of Korea 4%, Switzerland 4%, Japan 3%, Brazil 2%, with other countries around the World accounting for the rest.

"The ratio for yeast supplied to academic versus commercial customers is approximately 40% to 60%."

The NCYC initially evolved into a broader collection when it moved to Institute of Food Research in 1981, collecting food spoilage yeast which was able to evade the conventional food preservatives. In 1999 the collection became a part of The United Kingdom National Culture Collection (UKNCC), which was established to co-ordinate the activities of Britain's national collections of microbial organisms – there are other equivalent collections for other organism as bacteria, algae, virus, cell lines.

Three years ago, the collection moved to its new facility in Quadram Institute Biosciences in the Norwich Research Park where it is currently based. At present the collection holds over 4,400 strains collected over the last 70 years. All strains in the open collection can be accessed and purchased directly from the NCYC website (www.ncyc.co.uk).

NCYC trades under QIB Extra Ltd, a company that provides bespoke research and market-leading services for the food, health and allied industries.

A confidential banking service

The NCYC's new lab and state-of-the-art facilities are housed within the Quadram Biosciences Institute. Being part of a bigger institute sees NCYC reap the benefits of being at the heart of



the research park, notably the interactions with the research community and the infrastructure the institute has to offer. An example is the liquid nitrogen storage, the home of NCYC's master stock's cultures. The Cryo-suite at QIB enables NCYC to guarantee long term storage at -196°C.

One of the main services the NCYC provides is the confidential safe deposit or yeast banking service. The NCYC maintains proprietary yeast strains for customers on a confidential basis. The cultures can be retrieved and available exclusively on the instructions of the depositor.

NCYC will use deposits to verify the authenticity of strains used in food and beverage manufacturing.

Ms Nueno-Palop said: "This service is valuable for important production strains and should be considered by anyone who wishes to take advantage of the NCYC's facilities and expertise in culture maintenance."

The yeast cultures are preserved under optimal conditions for the maintenance of their properties, under secure and confidential safeguard and yet be available on demand.

"This service is used by small, medium, and multinational companies," Ms Nueno-Palop said. "The aim of each company is slightly different, but the goal is always to protect and insure the production strain. If you insure your buildings and con-tents, why would you not protect the strain responsible for your final product?"

Yeast services

While the most popular service provided by NCYC is the confidential yeast bank, the company also offers a number of other services including a yeast identification service, offering a precision characterisation of yeasts direct to customers worldwide. Molecular methods have revolutionised the speed and accuracy of yeast identification. In recent years, these methods have been applied to solve numerous practical problems such as the presence of spoilage yeasts.

"We can closely work with many different companies to help identify either native strains that they want to exploit or even to identify any strain isolated by the company," said Ms Nueno-Palop. "In this area we are currently offering a new service to isolate native yeast strains from vineyards.

"Why use a generic commercial wine yeast when you can use your own local native strains? This could make the wine even more special, and it is also a powerful marketing tool."

Customised yeast propagation for brewers is also a popular service, mainly used by smaller or medium sized companies that may not have their own labs or propagation plants. As such, the yeast propagation service is important to these businesses as the NCYC can guarantee a pure yeast slurry than can be used for direct pitch in their ermentation tanks.

NCYC supplies strains via its website www.ncyc.co.uk to a large range of customers from academic to industry, from very small compa-







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Carmen Nueno-Palop, Business Development Manager

nies to multinational. Ms Nueno-Palop admitted Brexit has created new barriers as samples have to pass new controls in customs, however NCYC is still reaching customers worldwide.

Highlighting importance

Being able to revive strains deposited more than 50 years ago, highlights the importance of the work and role played by NCYC employee's predecessors, collecting, and storing the strains for generations to come.

"You feel a sense of responsibility when opening strains that have been dormant for so many years, some even before we were born," said Ms Nueno-Palop.

She concluded: "As a company we would like to carry on helping distributing yeast worldwide and increase our global network. An important long-term objective will be genome sequencing all the strains in the collection."



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