Searching for the ultimate blue cheese

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It's the champagne of the cheese world and the gastronomic pride of the East Midlands but now blue cheeses like Stilton are literally under the microscope in a quest for the best possible quality.

Researchers at The University of Nottingham and The University of Northampton are working with a Nottinghamshire cheesemaker to examine what gives blue cheeses their distinctive taste, texture and smell.

The scientists hope to find out exactly how the microorganisms in blue cheese work which could lead to better quality, consistency and fewer defects in the manufacturing process. They are working with Stichelton Dairy on the Welbeck Estate in North Nottinghamshire which produces a classic English unpasteurised blue cheese, similar to Stilton.

Microorganisms, known in the trade as starter cultures, are added to milk in the manufacture of cheeses. But the final 'flora' of a cheese develops during ripening and contains many microorganisms not originally added

in the production, known as ‘secondary flora’.

Previous work at The University of Nottingham has shown that in complex cheeses like Stilton the secondary flora is different in different parts of the cheese (core, blue veins and rind) and that these organisms contribute to the flavour properties of the product.

Also, some of these organisms may actually enhance the cheese’s ‘blue’ aroma characteristics whilst others may be undesirable as they have antifungal properties which can stop the mould growing and prevent the characteristic blue veins developing.

The research will look more closely at how secondary flora contributes to flavour development and which microflora may need controlling to allow blue veins to develop. The identification of any natural antifungal compounds may have a wide range of applications both within the food industry and outside.

The East Midlands is famous as the home of Stilton production and the project could ultimately help local blue cheeses to take a larger slice of the global market by making regional cheese producers more competitive. The research findings will also be shared with cheese producers across the UK.

Prof Christine Dodd from The University of Nottingham’s Division of Food Sciences, said: “We are very pleased to receive this grant from the Food and Drink iNet for our research, which will help us to progress our understanding of the way flavours develop in these complex cheeses and the contribution that the different microflroa components contribute to this.”

The research project is one of five Collaborative Research and Development grants worth a total of more than £245,000 announced by

the Food and Drink iNet, which co-ordinates innovation support for businesses, universities and individuals working in the food and drink sector in the East Midlands.

Funded by East Midlands Development Agency (emda) and the European Regional Development Fund (ERDF), the Food and Drink iNet is one of four regional iNets that has developed an effective network to link academic and private sector expertise and knowledge with local food and drink business innovation needs.

Provided by University of Nottingham