DELICIOUS science

Lee Sing Yin catches up with her university mentor **Professor Azhar Mat Easa** of Universiti Sains Malaysia on the fascinating world of food research.

Food technology is about providing massive amounts of food which is assured in its quality and safety. With six billion mouths to feed in the world today, this would be impossible to do without utilising the right science and food technologists!

In order for food products to reach store shelves, a number of individuals are involved – most of whom are trained food scientists or technologists. They can be involved in production, quality assurance, quality control, product development and other jobs related to the marketing and distribution of food products.

A career in food research

Food scientists have been busy for the past 10 years testing and validating new ingredients for health optimisation. These efforts have resulted in isolating and extracting compounds that impart health benefits when consumed frequently, such as dietary fibre, antioxidants, probiotics, prebiotics, enzymes, certain vitamins and minerals, peptides and oligosaccharides. The potential in these compounds has not gone unnoticed. Prof Azhar said, 'The market for these new ingredients is so huge that many new food-pharmaceutical companies are formed to process and continue researching on these high-end ingredients, which is still being imported from developed nations.'

While the food industry is the primary economic driver in many developed nations, it is still in a developing stage in Malaysia. Prof Azhar said that even though there are young food professionals eager to go the extra mile to attain 'developed' status, food research in Malaysia is still very basic in nature and the development of the industry is still rather inhibited. 'We are still struggling with basic food hygiene issues, as evidenced by the number of food poisoning cases reported in the media. At times, food poisoning cases are overlooked as common and minor issues, and thus go unreported,' he said.

Eureka moments

Without valuable food-related feedback from the community, it is hard for food industries to move forward and improve on their practices and products. Nonetheless, local researchers like Prof Azhar and his research team have found plenty of success in their own research efforts, whipping up new discoveries and innovations.

Notable ones include modified pectin – a functional food ingredient – produced from durian rinds which would otherwise be considered waste; sugarcane juice with prebiotics; and most recently a product named 'neodles' that is high in dietary-resistant starch. This makes it a perfect substitute for instant noodles as it is suitable for diabetics and weight watchers.

'Neodles is now in the pre-commercialisation stage and we hope to see the product in the market soon,' said Prof Azhar.

Is food research right for me?

Good researchers are hardworking people with the right qualifications and talent. Prof Azhar noted that when you are a researcher, creativity is no longer an option or a luxury. 'Ideas, they can come from anywhere. But ideas are cheap. What matters is innovation – the transformation of ideas into something useful.' Despite having his work already published in many reputable scientific journals, Prof Azhar's personal goal is to push his ideas into fruition, to reach the market and the people who can benefit from them.

The future of food

Prof Azhar is confident that the food industry will grow and flourish. 'In future, better informed and educated consumers will develop more sophisticated tastes and preferences, and look for the added functions of a product such as health, convenience, freshness and minimal processing.' He also predicts that the life of new products will be much shorter, forcing industries to churn out new products faster and more frequently to meet rising demands from a growing population. Food industries will then be recruiting K-workers who are strategists and thinkers rather than those who have mastered technical abilities only. Thinking and innovation skills will be invaluable, and K-technologists will be highly sought after.

Soothing food fears

Prof Azhar brushes off food-related controversies – such as the one over genetically modified food – as the reaction of a misinformed public. 'There will always be controversies, but they die off when people identify the problem as negative perception rather than bad science.' He explained that the introduction of probiotic bacteria in the 80s and better functional food in the 90s were initially not received well, but today probiotics, prebiotics, dietary fibres, antioxidants and enzymes have gained much popularity and acceptance by the general public. 'When technologists introduce something new, the same vicious cycle will prevail.'

Advice

Prof Azhar's advice for those who are not sure if food science is right for them is to 'stroll along the food product corridors in a supermarket. See the kind of food being displayed, and see if you are a bit excited about making those foods better.'

You will need to be a proactive self-starter with plenty of fresh research ideas week after week. You should also love to read and write in good English and have the enthusiasm to improve current food products. 'You can come from any science background to be a food researcher but know what you are jumping into before you make a move. Bear in mind that you need to complete postgraduate studies to qualify as a true researcher,' said Prof Azhar. 'When all of that is sorted out, do it.'

PROFESSOR AZHAR MAT EASA, 41, obtained a BSc (Hons) in Food Science as well as a PhD from the University of Nottingham, UK, in 1992 and 1996 respectively. He joined Universiti Sains Malaysia in 1996 where he is presently still attached as a lecturer, student supervisor and researcher. In his research, he has made numerous discoveries including healthy 'neodles' for diabetics and weight watchers, and an easy outside-the-lab and quick method of differentiating pork from chicken meat.