



In advance of the networking event for R&D professionals at FiAC 2007, Peter Peverelli of Eurasia Consulting introduces us to the Chinese food industry's newest innovations

The road ahead

The human propensity for innovation is normally reflected in the structure of our organisations, and the R&D department is often the source of innovation. Then other departments, in particular marketing and sales, feed R&D with information about the wishes of customers, trends in the market and new inventions. Management feeds it with capital and the ratio of R&D spending is, consequently, regarded as one of the key figures of a company.

Given this premium on innovation, here we identify three main ways in which Chinese food scientists are designing novel foods.

Functional foods

Food and medicine have never been as widely separated in China as in the Western tradition. Virtually all food and food ingredients are attributed certain medicinal activities in traditional Chinese medicine (TCM). Against this background, it is not so hard to imagine why the notion of 'functional food' was accepted so quickly and smoothly in China: it was not a novel concept for the Chinese. In fact, a number of fashionable functional foods in Europe, like Ginkgo, originate from Asia. As soon as 'functional ingredients' established themselves as a separate and lucrative category, medicine companies started to promote extracts from TCMs as food ingredients.

According to statistics published by the China Chamber of Commerce of Medicines & Health Products Import & Export (CCCMHPIE; see our interview with Cui Bin of this organisation on p.16), Chinese exports of herbal extracts amounted to US\$226 million during the first half of 2006. This was 41% more than during the same period of 2005. Preliminary statistics show that the situation during the second half of 2006 was even better.

● Fungi – China's new treasures

An important product group in this category are fungal polysaccharides. With an annual volume output of 5.7 million tonnes, China is the world's largest producer of fungi. A number of fungi are used in Chinese medicines. Some of them, like lingzhi (*Ganoderma lucidum*), are already starting to become known in the West. With modern extracting techniques, substances with much greater functionality can be obtained. Fungi also contain fractions of protein, minerals and other nutrients. The functionality ascribed to these substances includes enhancing the immune system, inhibiting the growth of certain cancers and slowing down the ageing process. Fungal polysaccharides are interesting in a business sense as well, with prices around US\$500 per kg. The popularity of fungal polysaccharides as functional ingredi-

fruits and vegetables. Local food specialties used to be a source of pride in China, but in the course of the 'modernisation' these traditions became rather suppressed. Local governments have regained interest in these products recently and many of them are even applying a kind of 'protected' status for their typical local specialties, prohibiting manufacturers from other regions using that product name, as with champagne in France. Only ham produced in Jinhua, in the Zhejiang province, can now be marketed as Jinhua Ham. Other examples of recently launched novel foods include:

● Birch wine

The Dailing Forestry Research Institute of Yichun in Heilongjiang province has developed a wine made from the juice of the birch tree. Other ingredients are magnoliavine fruit and blackberry, all indigenous

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ents is growing in China, with lingzhi-enriched beers, wines and teas appearing on the market.

A recent example of a novel food ingredient based on fungal extracts is coriolan calcium. This is a new type of calcium supplement developed by The China Academy of Sciences based on a compound of coriolan and calcium. Coriolan is derived from the fungus *Coriolus versicolor*. The compound is said to not only function as a calcium source, but also to enhance the immune system. It can be added to milk powder, cereals and rice porridge.

Local specialties

Chinese food designers have grown very adept at transforming traditional Chinese foods into products manufactured at an economical scale. A related trend is to create new foods from typical locally cultivated

wild fruits from north-east China.

● Turtle snacks

The Turtle Company of Qingdi in Guangdong province has developed a snack food from the local variety of turtle, called 'dried turtle bits'. Qingdi has been famous for its turtles, a large amount of which are exported to Japan. The snack food project has been undertaken to develop higher value turtle products processed in the region.

● Donkey milk

Dawankun Biotechnology of Qiupuhu in Xinjiang province has launched China's first commercial donkey milk. Dawankun has made trial batches of drinking milk and yoghurt. Local people do not speak of 'donkey milk,' but of 'dragon milk'. So, Dawankun is marketing these products under the Western Dragon brand. The region can produce two tonnes of donkey milk per day.



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Adventurous by nature

The Chinese are willing to experiment. This is perhaps based on the same cultural values that make them so interesting in gambling. A consequence of this trial-and-error mentality for product innovation is that the route between conception and prototype is often considerably shorter in China than in Europe. Novel products are often tested by throwing them on the market and see how consumers react. Combined with other traits of Chinese culture, like playfulness and curiosity, this means that more peculiar products are launched in China than in any other market in the world. Here are a few good examples:

● Pineapple crisp pie

Manufactured by Qiqi Healthy Food of Xiamen, Fujian province, this is a known ingredient in a new formulation. It's positioned as a low-fat pineapple-flavoured healthy snack and the main ingredients are starch, maltose and pineapple.

● Male-female fruit juice

Xinyuan Shunxing Science Trading, in Beijing, has launched special fruit juice

beverage for male and female consumers, cashing in on the idea of a battle between the sexes. The manufacturer does not provide details as to the difference between the two varieties.

● Biscuits 'n' jam

Guanghe Food in Shandong province has launched a new line of 'fun' biscuits. A packet of biscuits includes a sachet of jam and the biscuits are dipped in jam and eaten.

What can we learn?

These different types of innovation each have their own influence on markets outside China.

In theory, functional ingredients extracted from TCM have mature markets in regions like Japan, Western Europe, and North America, where there is a growing interest among consumers in functional foods and beverages. The challenge for the Chinese manufacturers is to introduce the functionality of their extracts in a way that is convincing in those new markets.

One step is to create a stream of publications attesting to the activity of the ingredi-

ents. Ginkgo is now widely accepted in Western markets, because 'experts' are backing the claims made by manufacturers.

Participating in the right trade fairs will be another useful step. From their perspective, European suppliers of herbal extracts and other functional ingredients would do well to identify useful TCM extracts for introduction in their own market ahead of their competitors. Seeking strategic alliances with suitable Chinese manufacturers could create win-win situations.

Local specialties will be more difficult to market outside China, as they are finished products, rather than ingredients. They have specific flavours and therefore require more effort than a simple catching story. In the case of products like the birch wine, these could be marketed as health foods. Novelities such as the turtle snacks and donkey milk will be harder to accept. Having said that, goat's milk and cheese are available in more and more European supermarkets in part to cater for a more culturally diverse population. So who knows, perhaps donkey milk or camel milk will be next?

The adventurous foods can provide a challenging source of ideas for the food industry outside China. Chinese manufacturers are still at the stage of learning how to market their products in non-Chinese regions. Multinational food and beverage makers, however, should regularly scan the latest developments in China for innovative ideas. The combination of the size of the Chinese food industry and the adventurous aspect of Chinese culture makes China the largest test market for novel foods in the world.

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