Pancosma
Beyond good taste

Sweeteners in animal feed are sensed not only by the sensory receptors on the tongue, but also by cells in the gut. Exploring the science behind the animal appetite, Pancosma continues to develop flavour-enhancing products for feeds

By CHAN NGAI MENG

Switzerland-based Pancosma's palatant or animal feed flavour enhancer business has been growing steadily over the past decade at 10% a year. About half of this increase was driven by the rising demand for palatants in the feed industry, with the other half being generated internally.

Compared to a decade ago, the company says, today's palatants market is crowded with products of questionable quality.

While this negative trend has unfortunately hurt the image of the industry, it has provided opportunities to companies like Pancosma to develop science-based, innovative palatant solutions.

Numerous examples of its innovative spirit mark Pancosma's long history. Established in 1947, it has been a pioneer in creating flavour molecules for the animal feed industry. In the 1980s, the company pioneered in sweeteners, creating the high-intensity sweetening solution range, SUCRAM®.

Over the next decade, Pancosma's product portfolio diversified with the inclusion of phytonutrient and organic trace mineral products. The company also went on to expand its palatant range with the addition of the first "micro-pearl" flavours, the PAN-TEK range.

The beginning of the new millennium saw the creation of the first heat-stable series of flavours, PAN-TEK Robust. Pushing the boundaries of process quality to new heights, Pancosma then established its ISO-FUSION Technology® (IFT®) standards of manufacturing. More recently, it says, the company applied ground-breaking research to revolutionise commercial outcomes for its customers through its Intelligent Gut Action and Non-Nutrition concepts. These led to the development of TakTik®, the "all-in-one," tailor-made solutions to meet individual customer requirements.

And in the livestock industry, continuous improvement in breeding technology has led to animals with high, theoretical genetic potential. However, in many situations this potential is not reached because of low or inconsistent feed intake.

Throughout their growth cycles, animals can be subjected to different causes of stress, such as abrupt changes in diet, variations in feed formulation due to fluctuating raw materials use and their quality, and sub-optimal housing and climatic conditions. Under these stress conditions, animals tend to reduce feed consumption, which, in turn, reduces performance levels.

Accordingly, Pancosma has developed a wide range of palatants (more than 200 such products) that improve feed palatability and encourage feed intake even during times of stress, thereby optimising animal performance regardless of external conditions. These flavours, Pancosma says, are market leaders in their own right and are used by some of the biggest feed companies in the world.

Importantly, the company designs each sensory solution based on specific customer requirements, such as increasing animal appetite, improving feeding behaviour, masking specific off-notes in feed, substituting raw materials to allow for flexible feed formulation, and creating a strong brand identity for its clients.

Creating a good palatant for animal feed is a very complex process, according to Pancosma. First of all, when designing a flavour, the company's expert flavourists have to consider existing feed industry regulations.

The ongoing re-evaluation of flavouring substances in Europe is also a critical factor to consider, especially since Pancosma is an active member of the European Feed Flavouring Authorisation Consortium (FFAC), an organisation tasked with negotiating the re-authorisation of flavouring substances in compliance with feed regulations. Such re-authorisation determines the list of raw materials that

Pancosma can use in the creation of flavours.

In Europe, production of palatants for the feed industry is relatively more restrictive than for the human food market.

Next, the sensory impact of flavours in different feed matrixes, on animal preference and human perception, are also factors that must be considered. Pancosma often performs palatability trials in partnership with universities and research institutions, and its customers. They come in the form of preference tests, imposed choice trials, or feed appreciation trials.

As a company rooted in science, Pancosma says it goes beyond such simple palatability trials by engaging in fundamental research, in collaboration with major universities around the world. Based on the results of these research programmes, Pancosma has, for example, demonstrated that SUCRAM® is detected by the guts of swine, calves and adult ruminants, leading to key downstream physiological responses, such as improved nutrient absorption and gut integrity.

A panel of trained individuals regularly assess the company's products for their intensities, stabilities and masking capacities.

The nose, according to Pancosma, remains one of the best and most sensitive tools in evaluating flavour. The nose can distinguish between hundreds of substances, even in minute quantities. However, the sense of smell is subjective, depending on the person's emotions, experiences, and environment. Therefore, to conduct a reliable and accurate evaluation, the assessment is performed by a group of people trained in flavour description, recognition and evaluation.

The panel is made up of 27 people who have undergone weekly sensorial training for more than 10 years, in accordance with ISO standards. The panel is used internally for the analyses of raw materials, semi-finished and finished products, and for flavour creation and evaluation.

The panel is also a tool for product positioning, enabling Pancosma to develop various services for its customers. Integrating the results from the sensory evaluation assessed by the panel with data regarding animal sensorial perception is extremely complex, but not impossible, according to Pancosma.

Proper feed consumption is the key to optimal health and development in weaned animals. In the early stages of an animal's life, solid feed intake must be maximised. Young animals offered solid feed for the first time are more likely to accept sweetened feed.

This was the motivation for Pancosma to develop SUCRAM®, a patented combination of high-intensity sweeteners with potentiators (to increase sensitisation) and taste enhancers in the form of micro-sized particles produced using the company's IFT® manufacturing standards. The IFT® standards ensure that each micro-sized particle contains the same amount of active ingredients, in equal and constant proportions, overcoming the loss of efficacy associated with feed additives of uneven composition.

SUCRAM® has been the market-leading sweetening solution since 1990. The efficacy of SUCRAM® has been demonstrated through various applications such as substituting sugar in diets, masking bitter ingredients (minerals, medicines, vegetal protein sources etc.), and improving palatability for better feed intake and performance improvement.

Pancosma has also shown that SUCRAM® not only targets the lingual epithelium (i.e. the surface of the tongue), but also sensory receptors in the gut epithelium, to further benefit animal health and performance. Indeed, the gut has sensory properties, and is able to perceive its environment and adapt to it.

Apart from requirements such as cost and efficiency, Pancosma's customers are also increasingly looking at how the company's palatant products contribute to sustainability and animal welfare. Pancosma says that its palatant products meet customer concerns regarding sustainability and animal welfare with three important points.

The first point deals with product safety. Pancosma has consistently allocated a significant portion of its yearly budget and resources to ensure that its products are safe for animals, consumers, the environment, and workers who handle these substances.

For example, the company was recently involved in a trial to evaluate the safety of feeding multi-fold doses of a model flavour with 20 different flavouring pre-mixtures in weanling piglets.

Secondly, growing environmental concerns and the volatility of some raw material prices have led Pancosma to invest in and adopt a new approach to sustainable sourcing.

Pancosma's palatant products play a key role in optimising feed efficiency, leading to better animal welfare and less environmental waste.

Today, due to the region's rapid growth and need for optimising feed palatability, Asia is one of the biggest markets for Pancosma's palatant products. In China and Thailand, Pancosma has registered record palatant sales in recent years.

Pancosma China was set up at the end of 2009, and has been producing palatants in China since January 2010. Now, just about five years later, Pancosma is the market leader for sweeteners in the country.

Generally speaking, Pancosma's strategy in China suits the needs of different customers. For example, for its key accounts, it provides value-added services from three different levels: products and services from the company's Business Development team; the TakTik® approach from Pancosma's Innovation team; and, advice on the best feeding programmes or nutritional solutions from independent consultants.

The company also organises seminars every year to build brand awareness and value in the market, and to share nutrition knowledge with its existing and potential customers.

In Europe, Pancosma enjoys a relatively slower growth, if compared to that in China. Yet it remains a key market for the company, having been its home base since its establishment in 1947. The Americas, where it has enjoyed significant sales, is another important market for the company.