INNOVAD

Wide-spectrum protection made simple

From coping with the complex interactions of mycotoxins with other stress factors to supporting the animal's own immune system, Innovad's Escent® and Magnet® product lines do them all.

By CHAN NGAI MENG

Can the benefits of mycotoxin risk control be measured? The question is often asked by customers, says Ben Letor, director at the Belgium-based Innovad.

Indeed, how will customers know that a product they are buying will really work against mycotoxins?

Yet, although they won't get any guarantee, they have to do something to avoid such risks. It would be irresponsible and highly risky not to. "A bit of a catch-22 situation for them," Letor adds.

That many toxin-control products, from binders to detoxifiers, are available in the market isn't of any help, says Letor. "The industry is in desperate need to be able to measure — using well identified bio-markers — the effects of such products on animal performance and health."

BEN LETOR

"There is a lot of noise, a lot of confusion, a lot of opportunistic approaches, and many me-too type products in the market that are very poorly researched. In vitro-only data are often presented, which do not properly address the complex interactions between gut health and other stress factors (bacterial, environmental, farm or herd specific)," according to Letor.

And he believes that the way out of the clutter lies in properly identifying the mycotoxin risks, such as segregating contaminated feedstuffs and redirecting their use to less susceptible animals, selecting the right application and dose of an effective product, and, most importantly, understanding the need to support the animal's own defence and detoxification system.

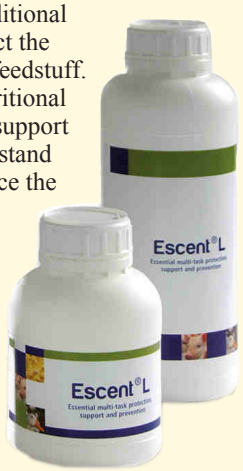
Since its birth in 2010, risk identification has been a key aspect of Innovad's two-year extensive research programme to validate the effectiveness of its Escent® product. The product was studied under various conditions, locations and even with the involvement of animal species, natural and artificial contaminations, and low- and high-risk situations.

In 2013, Innovad launched a mycotoxin risk assessment service provided by independent laboratories using HPLC and later on LC-MS/MS techniques to measure the extent of mycotoxin contamination in feedstuffs. The company tapped two independent laboratories to analyse samples following a strict protocol. Within five days, a risk analysis report and suggested actions from Innovad's technical services team are given to the customer.

In partnership with a university, the company is also developing a new analytical method based on toxicokinetic parameters measuring the amount of toxic components absorbed by the animal. Started this year, the project involves analysing levels of biomarkers and metabolites in the excreta (urine, faeces) and in the blood.

Analytical tools have not only become more affordable, quicker and more accurate, but also have a greater ability to go deeper into the identification process, says Letor. "The industry has realised that a multitude of toxin groups, and their various forms (masked, conjugated) extend the mycotoxin risks, creating the need for a wide spectrum approach rather than targeting specific groups of toxins," he explains.

"As we are not always sure what we are dealing with precisely, we may not know for example how additional stress on farm would impact the potential toxic load in the feedstuff. So we have to develop nutritional strategies that would both support the animal's ability to withstand such stress, as well as reduce the toxicity of toxins. Being toxin-specific might be too restrictive and we might miss the target. This would defeat our purpose and result in unnecessary costs for the feed miller,"



Innovad's Escent® products

The Innovad production plant in Antwerp, Belgium

> “The climate is changing, becoming less predictable. Grain seeds and hybrids are evolving, new by-products are being used. These factors all contribute to an increase in the mycotoxin menace ...”

Letor says.

That said, sometimes when the challenges are well-identified with reliable historical trends and a good database pinpointing polar toxins, Innovad’s Magnet® will suffice and be recommended, according to Letor. Magnet® is also an anti-caking agent and pelleting aid for feed.

Studies have shown that it adsorbs polar toxins and enhances flowability of feed ingredients.

When challenges are more unclear, with combined stress factors and modified toxin metabolites along with non-polar toxins, Escent®’s multifunctional mode of action would be promoted. In particular, Escent® P and Escent® L have been specifically designed for poultry use, with the latter ideal in situations in which stressed birds reduce their feed intake (but continue drinking), making feed treatment a less practical option.

In China, Escent® S is mainly used for the dairy sector. Letor shares his outlook for the sector: “We see a growing demand for technology helping in mitigating the risk of toxins and reducing the elevated levels of somatic cell counts in some dairies.

Local trials and in vivo tests have been carried out, highlighting the benefits of our approach in the fast-growing milk industry.

At this initial stage, we are working through specialised connected distributors but we anticipate to ground a company with local manufacturing capabilities in 2016.”

Over 50% of Innovad’s revenues come from its Escent® and Magnet® product lines. The company’s hope is to continue to strongly grow its mycotoxin risk control business.

In fact it will allocate extra research funds and technical support to double the business over the next three years as outlined in its long-term strategic plan.

Contrary to popular belief, as the company had experienced recently, it is no longer regions like Latin America or Asia that are mostly impacted by the risk of toxin contamination because of their hot and humid climates, notes Letor.

“The climate is changing, becoming less predictable. Grain seeds and hybrids are evolving; new by-products are being used. These factors all contribute to increasing the possibility for mycotoxins to be found in places that were usually not identified as being risky in the past.”

Last summer, for example, aflatoxin-contaminated grain supplies in Central Eastern Europe posed a challenge to milk producers who had hardly been confronted with that kind of toxin risk, he adds. “And this year we have seen more Fusarium-toxin risks in the European Union.”

“In comparison, we note that the US dairy industry recognised the risks related to the presence of polar and non-polar toxins many years ago, and they have been taking preventive action all year round, whereas in Europe we have not witnessed such a level of awareness yet. In fact, it is only until very recently that some producers have started considering looking at using binders.

“We can then say that no region is exempt of risks, that historical trends are of limited value and that we see a need to constantly monitor this issue in all parts of the world.”

For organic products, the US market is also fast catching up with its European counterpart, the traditional stronghold.

“We are seeing a growing demand for certified organic additives to mitigate such risk not just in Europe but also in the US. We have developed an Escent formula that has been approved for use in certified organic production. Our experience tells us that industry players are reluctant to store many different additives to address similar issues and prefer to use just one certified organic product, provided the cost is not prohibitive,” says Letor.

Overall, in the next five years, Innovad aims to continue to bring innovation in mycotoxin identification to the industry, and raise its understanding of the risks of mycotoxin exposure.

It therefore expects its product portfolio to remain very dynamic, with new upgraded versions and tools.