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PERSPECTIVES

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Adisseo's Mycotoxin Service Offers Holistic Approach to Costly Contamination Problems

Mycotoxins in feed remains a costly problem for the agricultural industry, but a holistic approach involving early risk identification and swift management can bring significant benefits. In its efforts to help solve the global challenge of mycotoxin contamination, Adisseo has developed a suite of services to enable growers and feed producers to monitor, predict, and test grain quality, helping them to react to feed contaminations in good time.

To promote the full value of its extensive toolkit, Adisseo has rebranded its services under the MycoMan name, highlighting the company's whole system approach while also unveiling upgraded services and tools.

Here, Adisseo's Mycotoxin management team – global category manager Olga Averkieva and Margaux Lecolinet, global marketing manager – explain the developments.

[Feedinfo] Adisseo has recently rebranded its mycotoxin services as MycoMan – can you tell us more about this initiative?

[Margaux Lecolinet] At Adisseo, we aim to solve global mycotoxin issues by offering the most comprehensive solutions, from the entry of materials into the feed mill, to protecting animals and their offspring.

Before this rebranding, Adisseo offered numerous services related to mycotoxin management including harvest overviews, rapid testing, wet chemistry analyses and a risk assessment mobile application. The lack of common branding and clear service proposal did not demonstrate the full value we provide customers.

Margaux Lecolinet
Global Marketing Manager
Mycotoxin Management Team
Adisseo

We have now put all the services together under the umbrella name MycoMan', which stands for Mycotoxin Management. MycoMan was historically the name of our popular app, MycoMan®, so that was the name of choice when regrouping all our services.

Today, Adisseo offers five services related to mycotoxin management:

- MycoMan Predict: Early projection of maize and wheat quality before harvest
- MycoMan Harvest bulletin: Assessment of overall crop conditions, as well as maize and wheat quality directly after harvest
- MycoMan Test (quick): Estimation of raw material contamination using portable devices
- MycoMan Test (lab): Screening finished feed (LC-MS /MS methods) at independent accredited laboratories
- MycoMan Mobile app: Evaluation of mycotoxin challenges and calculation of the required dosage for mycotoxin deactivators.

[FeedInfo] How did mycotoxin management develop in Adisseo following the acquisition of Nutriad?

[Olga Averkieva] The Mycotoxin Management department was acquired from Nutriad two years ago. This has certainly empowered the capacity of Adisseo in this area. More recently, the partnership with Syngenta is a great example of the investment in research and business development that Adisseo has accelerated. The Mycotoxin Management team has also expanded, and we look forward to sharing new perspectives and science-based solutions for mycotoxin management.

[Feedinfo] MycoMan Predict is a new service to assess mycotoxin risks before harvest. What science is it based on? And how accurately can mycotoxin levels be predicted at this stage?

[Margaux Lecolinet] MycoMan Predict arose from the partnership between Adisseo and Syngenta. This predictive model is based on three data libraries for each region: climatic conditions, agronomic practices, and plant growing phases. It considers crop rotation, the sensitivity of the crop variety to moulds, and tillage systems used. Syngenta has the unique ability of being able to update the libraries with additional information gathered from grain producers. This is an innovation in mycotoxin risk management, making MycoMan Predict both remarkable and reliable.

Olga Averkieva
Global Category Manager
Mycotoxin Management Team
Adisseo

[Olga Averkieva] In terms of accuracy, predictions have been excellent.
For example, in France, deoxynivalenol (DON) levels forecast in wheat were compared with levels analysed after harvest by a reference laboratory. When the predicted yearly average level of DON was compared with that analysed from 2001 to 2020, the correlation coefficient was 0.93. In Europe, around 130 million tonnes of maize and wheat have been included in the prediction. The average volume studied, per type of grain, is roughly 12 million tonnes per country. The Adisseo

team has realised several post-harvest surveys for 2020; the correlation between MycoMan Predict results and data from wet chemistry was again remarkable.

[Feedinfo] Why is managing mycotoxin levels in feed ingredients necessary? And why is it important to do so as early as possible?

[Olga Averkieva] Most mycotoxins are produced by moulds during the cultivation of grains. When the feed or animal producer receives newly harvested grain, it already contains different mycotoxins. The patterns and levels at this point represent up to 100% of the potential risk for future production of finished feed. However, the contamination of grains harvested in a single year can differ, in mycotoxin occurrence and level, from previous years in the same climatic region. Buying newly harvested grain is a betting game for the producer, as they have to 'fire-fight' unknown contamination. Therefore, early risk prediction in grain, for example before harvest, is a promising tool to allow the industry to prepare and react to possible feed contamination problems in good time.

[Feedinfo] How do mycotoxins occur in different countries, and do you need different prediction models?

[Olga Averkieva] Each mycotoxin is produced by moulds under specific weather and during specific crop growing phases. Therefore, the calculation for every mycotoxin in each grain type has its own algorithm. T-2 and HT-2 toxins (HT2), deoxynivalenol (DON), and zearalenone (ZEA) are very important in wheat, however, currently we have only launched the model for DON. For maize, we already have early prediction models available for DON, ZEA, HT2 and fumonisins. Syngenta is currently testing equations for aflatoxins.

[Margaux Lecolinet] Syngenta is very cautious about the reliability of the models they develop. The equations are specific for each country, and even regions of the country with similar climates. Today, we can provide very precise early predictions of mycotoxins in crops throughout Western Europe (France, Spain, Poland, United Kingdom, Italy, and Germany). Wider global coverage is possible, however, adapting models to additional geographical zones takes time.

[Feedinfo] Another aspect of your portfolio is the MycoMan app, which was first launched in 2016. You've recently released version 2.0 — what does this new version offer, and how will it help customers?

[Olga Averkieva] Launched in 2016, MycoMan® was a pioneer app to assess mycotoxin risk. Based on analysis of the levels of the main mycotoxins, MycoMan® directly shows how serious the impact on animals could be, as well as which Adisseo products and dosages are the most appropriate. Four years later, Adisseo has released the 2.0 update, which includes upgrades based on our experiences since 2016, contains new data and new functions.

[Margaux Lecolinet] The new version has been built with one objective: to practically help our customers deal with their mycotoxin issues. Risk assessment remains at the core of the app, but the relevant mycotoxin levels have been updated and

visualization of the symptoms of mycotoxicosis has been improved. We have also added new features in order to help feed producers make the correct on-the-spot decisions. Results of our latest harvest bulletins for each country listed will also be available via the app. The product information has been updated and, in addition, mycotoxin ID will give brief information about each mycotoxin type. This includes advice on how to decrease the risk via storage practices or feed mill operations, as well as the sensitivity of different animal species.

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