Mycotoxin Matters episode #24 transcript

**SPEAKERS**

Announcer, Dr. Lokesh Gupta, Nick Adams, Raksha PR

**Announcer** 00:00

Welcome to the mycotoxin matters podcast from Alltech mycotoxin management. As mycotoxins present an ever increasing threat to livestock production, join us as we discuss these impacts and potential solutions, sustainable farming and our vision for a planet of plenty.

**Nick Adams** 00:02

Hi, and welcome to this month's episode of Mycotoxin Matters podcast. My name is Nick Adams, Global Director for Alltech's mycotoxin management platform. And this month, we're going to take a look at the learnings from the recent harvest analysis work that's been undertaken by our team in India, based around the recent harvest that has been ongoing in that part of the world. Joining us for the discussion today are Dr. Lokesh Gupta and Raksha PR. Dr. Gupta joins us as regional technical manager for Alltech in South Asia, and Raksha joins us as the marketing coordinator who has been really coordinating the harvest analysis project. Lokesh has over 18 years of experience in the poultry nutrition and management sector in South Asia. And Raksha has been working for the past five years in the marketing arena with a background in horticultural sciences. So, Lokesh, and Raksha, you're both very welcome to the podcast today.

**Dr. Lokesh Gupta** 01:20

Thank you, Nick.

**Nick Adams** 01:21

So Lokesh, maybe we could start with yourself and perhaps you could give our listeners a quick introduction to the industry in India, how it's been affected by some of the challenges within the wider global market over these past couple of years and and where it currently stands.

**Dr. Lokesh Gupta** 01:43

Yeah, Nick sure, I will just give you give a brief introduction about the Indian poultry industry and the challenges that we are facing currently. For Indian poultry industry has undergone significant transformation during last two decades, and it has emerged as one of the major sectors of the agricultural economy. Currently India is third largest egg and fourth largest poultry meat producer in the world. However, with a huge population of over 1.4 billion people, our consumption of animal products is quite low. At present our per capita egg consumption is 90, and meat consumption is approximately four kg. India poultry market size has reached a value of approximately 170 5000 crore rupees which in year 2021 and the industry is further expected to grow by a compound CAGR of around 8% in next five to 10 years. So, the industry is growing very fast, and the growth is being driven by the rising disposable incomes, and changing food habits of consumers. The shift from the traditional Indian diet which heavily depends on pulses to food products, such as meat and eggs, to meet the protein requirements of the human body is significantly aiding the Indian poultry industry growth. The growing awareness regarding health and wellness is further driving the demand of meat and egg factors like rising disposable incomes, improving lifestyle standards, rapid urbanisation and the growth of the distribution channels like retailing and online delivery are propelling the industry further tightening bakery food market is driving the demands for egg, which is an important ingredient in bakery foods. The reason bakery food market is exhibiting strong ground growth rates and the expected to create a positive impact on the consumption of eggs in the country. Indian government is also encouraging poultry farming in the country to increase disposable income of farmers by introducing capital funding schemes to support poultry business and introduction of eggs into free midday meal of the school children. There are numerous integrated players in the market and they have made sizeable investment in breeding, hatching, rearing and processing activities. So this is regarding the background but still we are having some issues and the issues are mainly the war that the world is going through. In fact, the Russia Ukraine war has affected everyone and this is the main reason behind the rising feed cost and that cost has mainly increased in the vegetable oils and grains. The war has also resulted in export of corn from India to the regional markets like Bangladesh, Southeast Asian countries and Sri Lanka, and that has impacted the prices of corn. We are also having the reemergence of various diseases like bird flu and avian influenza, and death, death which again, causing fluctuating demand in the consumption pattern of the poultry meat index. Right now the prices of chicken and eggs are on the lower side and poultry integrators and producing farmers are not making any reasonable profit.

**Nick Adams** 05:37

Lokesh, thanks for that. And really so many parallels that we can draw from your comments that we see in other markets around the world, whether that's on the trends side of things that, you know, coming out of COVID when we look at how food consumption has changed, and then the comments regarding the war in Ukraine and how that has impacted pricing. Clearly, though, India as a market has so much growth potential, which makes it very exciting to be a part of. Raksha, maybe if we come to yourself now, because, you know, clearly within a challenging market, the quality of grain plays an important role. When margins are tight, profit is scant, then efficiency becomes really important. And so, you know, this was another opportunity for us to build on the previous harvest projects that we've run in India and elsewhere around the world. Maybe you could just talk to us a little bit around the approach to the harvest project in India, and how we've gone around collecting those samples from the field.

**Raksha PR** 06:52

This is the third time Alltech India is doing this fresh harvest corn survey, beginning it for the first time in the year 2019. The main objective here is to analyse the seasons maize quality, as maize is the principal energy source used in poultry diets due to its high energy value and palatability. In India, maize is the third most important cereal crop after rice and wheat accounting for around 10% of total food grain production in the country. And we have chosen some of the top maize producing states of the country for our survey like Karnataka, Maharashtra, Andhra Pradesh, and Telangana. We travelled all the states met farmers in their farms, and we also met traders in trading centres. And we interviewed them to understand the production scenario, the issues they are facing the market price trend and the ground reason behind market price fluctuations. So, after travelling to all these states, we collected maize samples from all the places we had visited and then sent to the laboratory to check moisture, crude protein and other physical parameters. And then we also have tested them for mycotoxins.

**Nick Adams** 08:06

Thanks Raksha, and following on from that, when you sent those samples to the laboratory for testing which mycotoxins were tested, and which method was used to make those tests?

**Raksha PR** 08:18

Yeah, we had analysed six mycotoxins totally. Aflatoxin, ochratoxin trichothecenes, HT-2 and DON, fumonisin, and zearalenone. And to detect them we had used Alltech, RAPIREAD programme.

**Nick Adams** 08:35

Fantastic. And that's using the Neogen raptor analysis method and then linking into the RAPIREAD system to allow us to upload those results into the cloud. Raksha following on from that, could you give us some comments based on your interviews with the farmers and your the different visits that you made? What did they say about the growing and the harvesting season this year? What was it like across some of the different states that you visited and how do people think that it influenced the quality of the harvest this year?

**Raksha PR** 09:15

In India, maize is grown in a wide range of unknown amounts, extending from extreme semi arid to sub humid to humid regions. Maize can be grown in all seasons, examples like Kharif what we call monsoon and Rabi that is winter season and in spring seasons too. This is the Kharif maize crop we have analysed now, which predominantly occupies 82% of the area under cultivation of the country. The crop was sown during last week of June to the first fortnight July and harvested during end of October to mid November. This year while we travelled we observed extended rain till the harvest. In some of the areas for example, Davangeree of Karnataka which is the hub of maize production, rainfall was around 640 millimetre. That is double the rainfall the district had received last year. The rain has dashed the dreams of several farmers who were expecting good crop this year. Then during our visit to December, we saw the maize was drying outdoor and the sudden unexpected rains soaked all the maize drying over there, and the grain started flowing in water. And that was all of a sudden and everyone was helpless and there was not enough resources to protect them from the rain. And in Maharashtra, we observed the maize crop, which are put on ground for drying or absorbed moisture and started germinating in the soil itself. Then again, this is due to the rain which poured late in the season. So definitely prolonged rain is one of the major factor which affected this year's current season maize. And one more thing I want to highlight here is the fall armyworm. So the fall armyworm is the most destructive pest of maize in India since its report in May 2018. And this time, we haven't seen much damage from Fall armyworm because farmers are already aware of pests and its symptoms now and has taken control measures at very early stages. So these biotic and abiotic stressors are significant bottlenecks in attaining fullest potential of yield gain and quality in maize in India.

**Nick Adams** 11:28

Thanks Raksha. It's certainly interesting comments regarding those late season rains and how that's affected the harvest. You know, clearly timing of harvest is so important. And then we were in thinking about the storage side of things in India as well, and the difficulty with the heat and the humidity in the country. Those late season rains really have an impact coming into that storage phase as well. Lokesh, maybe then coming back to yourself. Can you talk to us a little bit about the results from the harvest survey, what have we actually seen then from the mycotoxin standpoint?

**Dr. Lokesh Gupta** 12:12

Yeah, so, this time, the maize that we have we are getting which actually having very high moisture as Raksha mentioned. Most of the time when the rain is happening in most of the places and even the poultry producers who are buying maize, they are actually having to wait to dry it to a certain period of time. So overall, we found a high moisture, other parameters were okay. This high moisture has led to a rapid development of mould growth. In our collected samples, we observed around 180,000 Cfu units of mould per gramme of the corn. And that was really very high compared to what we expect around 10,000 Cfu per gramme of the corn samples. Similarly, mycotoxins that we analysed to the RAPIREAD system aflatoxin was a concern as usual, we observed an average value of around 35 ppb and then a maximum value of 165 ppb for aflatoxins. Other mycotoxins were also present. But I would like to highlight that, just like in India, apart from aflatxoin, DON, fumonisin and zearalenone, they are also present most of the time. And that's why producers must try to see that challenge as a whole and those values are quite affecting the broiler quality performance. So when we measured all these values, through the risk equivalent quantity, we found an estimated value of 67 and in that aflatoxin batch contributing mostly up to 55%. So when we use this kind of corn into the poultry ration, we can expect around 80 grams weight reduction in the broilers and we can expect around four eggs per hen in a laying cycle

**Nick Adams** 14:27

Lokesh, that's interesting information. And maybe then just to help clarify some of those numbers for our listeners, you talked about some of those aflatoxin numbers. And then you mentioned a holistic number of 67. And that would be our REQ value for the corn. So essentially taking all of the other mycotoxins into account and giving it effectively an aflatoxin equivalent. We're saying that the aflatoxin equivalent was 67, of which aflatoxin itself contributed, I think you said 35 ppb. Is that the the overview?

**Dr. Lokesh Gupta** 15:13

Yeah, yes, Nick. And the main thing is that apart from aflatoxins, we found almost all the mycotoxins that we tested. In 43% of samples we found all six mycotoxins that we tested and 45% samples were having five mycotoxins out of six tested. So multiple mycotoxins is actually a big challenge for us,

**Nick Adams** 15:37

Which is an important point, particularly in the country, because aflatoxin is such a focus. But as you quite rightly say. and really, one of the key reasons for doing this type of work is to demonstrate that when it comes to a bird health and performance aspect, those other mycotoxins are very important, and in this regard, in this season, what we're suggesting is that aflatoxin is making up somewhere around 50% of the risk based on the numbers that we are looking at, with the other risk coming from those multiple other mycotoxins.

**Dr. Lokesh Gupta** 16:19

Yeah, yeah, that's right. Nick.

**Nick Adams** 16:21

Well, Lokesh, Raksha, thanks very much for your time today. It's great to be able to showcase India and the harvest work that's been going on in that part of the world. We'll be following up with the harvest analysis reports for some of the other key harvesting regions over the next week or so. And that all information will be available on know mycotoxins.com. But for now, Lokesh, Raksha, thanks very much.

**Dr. Lokesh Gupta** 16:53

Thank you

**Announcer** 16:53

We hope you enjoyed listening today and look forward to you joining us next time on The Mycotoxin Matters podcast. For more information on the topics discussed, please visit knowmycotoxins.com That's K N O W mycotoxins.com