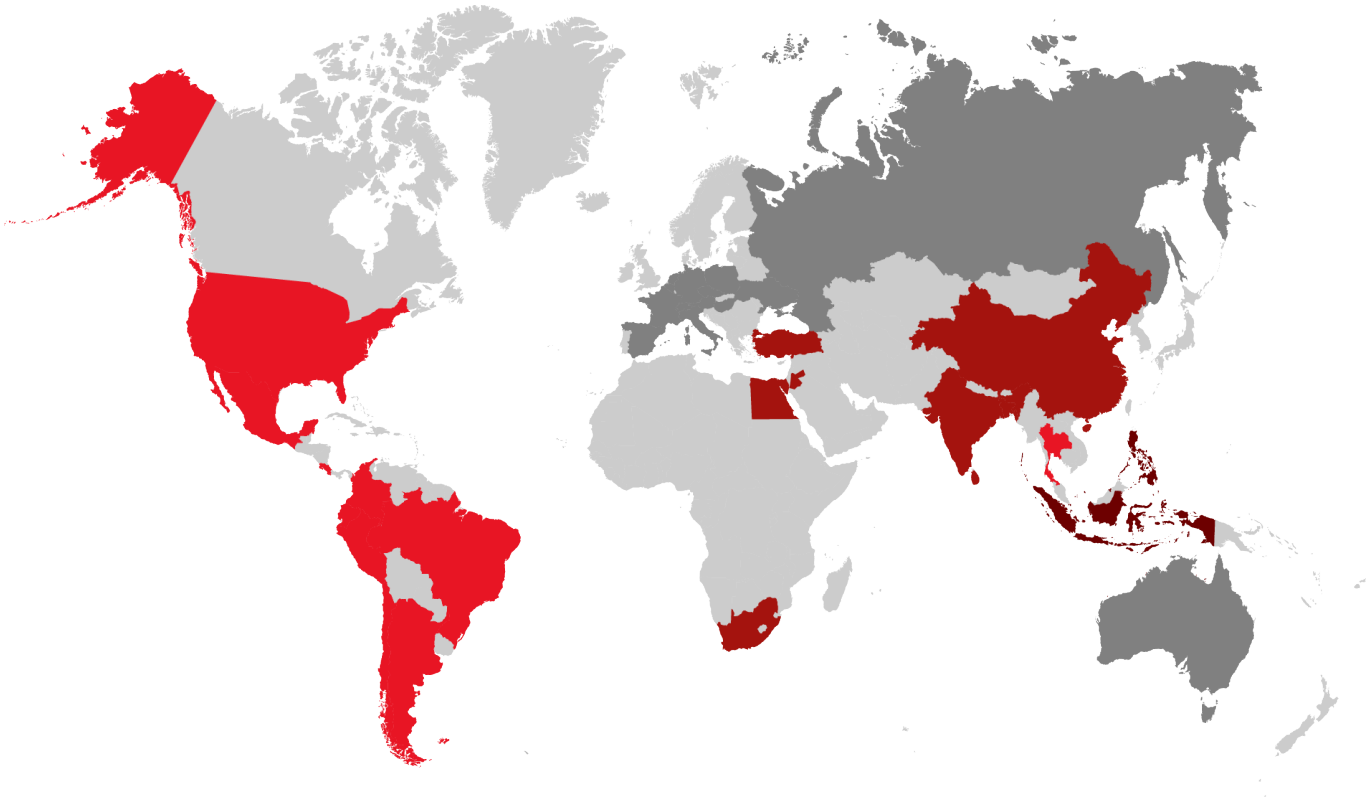
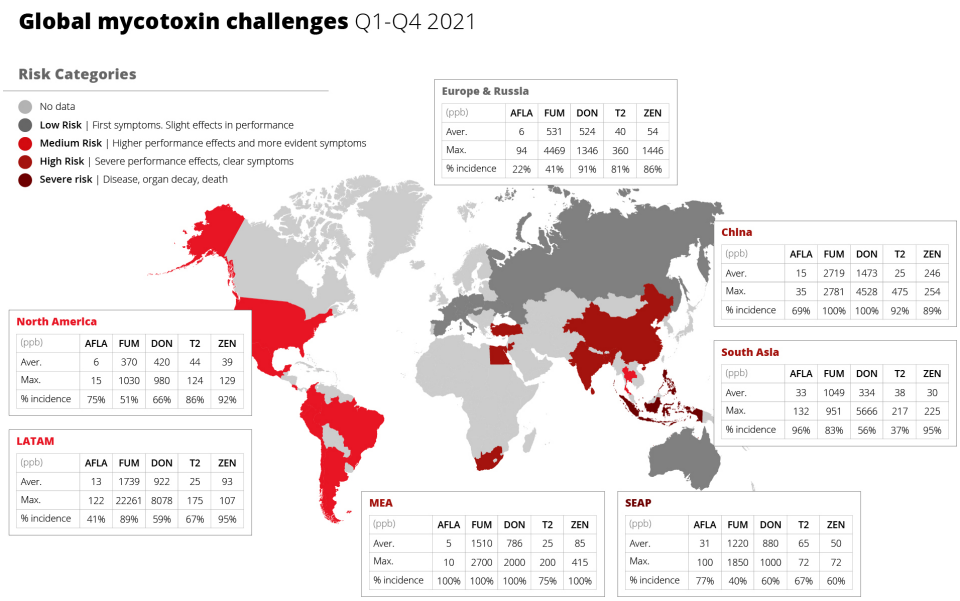
Global mycotoxin challenges: 2021 report



By Marisabel Caballero, Global Technical Manager Poultry, EW Nutrition

Climate around the globe has changed, increasing atmospheric temperatures and carbon dioxide levels. This change favors the growth of toxigenic fungi in crops and thus increases the risk of mycotoxin contamination. When contaminating feed, mycotoxins exert adverse effects in animals and could be transferred into products such as milk and eggs.

***** Please download the full article for detailed information**



Click to see the full-size image

Mycotoxins: a worldwide challenge in 2021

Amongst naturally occurring mycotoxins, the five most important ones are aflatoxin, ochratoxin, deoxynivalenol, zearalenone, and fumonisin. Their incidence varies with the different climates, the prevalence of plant cultures, the occurrence of pests, and the handling of harvest and storage. Worldwide, farmers faced various and sometimes extremely high mycotoxin contamination in their feed materials in 2021. In the following, we show the major challenges in five main regions.

Asia faced high aflatoxin contamination

In Asia, high temperatures and humidity favor Aspergillus growth in grains. As a result, 95 % of the samples in South Asia and three-quarters of the samples in the China and the SEAP region (Indonesia, Philippines, Vietnam) showed aflatoxin contamination. The average contamination being higher than the threshold for all farm animals represents an increased risk for their health and performance.
In China and the SEAP region, also DON and T-2 were highly prevalent. Showing an incidence of more than 60%, they pose a severe risk when combined with aflatoxin.

Fumonisins afflicted the LATAM region

In Mexico, Central and South America, fumonisin contamination prevailed with an incidence of almost 90% at average levels that can be considered risky for swine and dairy. Together with incidence levels of around 60% found for DON and T2, fumonisin may act synergically in the animals, raising the risk for health and performance.
The Fusarium species linked to these mycotoxin contaminations occur in the grains on the field. Amongst others, insect damage, droughts during growing, and rain at silking favor their development.

Trichothecenes prevailed in North America

Contamination with trichothecenes (DON and T2) is the rule in the United States. The interaction of these mycotoxins is at least additive. The damage they cause to the gut opens the door to dysbiosis and disease, decreasing performance and profitability.
Also in this case, the responsible molds for the contamination are Fusarium species that develop when grains are in the field. As with fumonisins, the molds are favored by insect damage, moderate to warm temperatures and rainfall.

Fusarium toxins contaminated grain in the MEA region

Fusarium toxins such as Fumonisin, DON, and T2 prevail in the region of Egypt, Jordan, and South Africa. In combination, these mycotoxins have additive effects at the intestinal level, which increases the risk of

dysbiosis in poultry.

A challenging year with long-term repercussions

Since mycotoxin contamination affects animal health, measures must be taken to provide the best protection. Besides improving agricultural practices in the field, smart in-feed solutions and mold inhibitors can be used in stored grain. These measures help producers preserve feed quality after a troubled year for crops around the world.