



MYCOTOXIN CONTAMINATION

Part 3: The socio-economic impact

by Theodore Hohls

The impact that mycotoxin contamination has on the nutritional status of both animals and humans, as well as the economic threat it poses, has been clearly defined and quantified. However, the socio-economic impact that these mycotoxins have is a far more complex issue. The levels of mycotoxin contamination and their overall effect can be compounded by several political, social, and environmental factors that include poor farming practices, poor legislation, climate change, and a general lack of relevant information. These compounding factors are most commonly seen in developing nations whose economies and communities are heavily dependent on agricultural production.

THE SEVERELY AFFECTED

Various countries throughout Africa and Asia are striking examples of how mycotoxins are having a major socio-economic impact. This can be attributed to the high number of poverty-stricken areas, with staple diets consisting mostly of basic grains, often grown and consumed locally, without any food-quality testing or properly implemented legislation in place to control the consumption of contaminated food.

Furthermore, these regions have subtropical climates that promote fungal growth and are often severely impacted by climate change. Besides the outright loss of crops and animal production by subsistence farmers, fungal contamination also poses a serious health hazard to humans, especially since in so many cases the crops grown are the only source of food available to households.

A SERIOUS THREAT

Mycotoxins are contributing to the death of animals and humans on a global scale, both directly and indirectly. In 2004, an outbreak of acute aflatoxicosis occurred in Kenya, with 317 cases of illness being reported, and 123 people dying of the disease. In addition to the direct deaths caused by mycotoxins, they have also been linked to 7 761 cases of liver cancer throughout Nigeria and over 3 000 cases in Tanzania.

Annually, more than 600 000 people die of liver cancer linked to aflatoxins, especially in China and Asia. Mycotoxins have also been directly linked to undernourishment in children because of the negative effect that mycotoxins have on micronutrient absorption and the immune system.

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IMPACT ON TRADE

Mycotoxin-contaminated commodities, especially in developing countries, heavily impact the price that these commodities are traded for. One of the biggest socio-economic impacts here is the loss of brand integrity, especially on the export market. Global economies are no longer willing to purchase agricultural commodities produced by these nations, due to the potential mycotoxin threat they pose.

This investment retraction severely affects the economy of developing nations, as they rely heavily on the export of agricultural commodities to stimulate economic flow. Developing nations are often caught up in an endless loop of mycotoxin contaminations and poverty. This vicious circle of cause and effect leads to increased dependence on developed nations to contribute aid and resources to alleviate these dire situations.

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CONCLUSION

The real impact of mycotoxins is not something that can necessarily be quantified in terms of direct losses, but rather encompasses many complex nutritional, economic, and socio-economic aspects that are all interrelated. What we do know, is that the threat of mycotoxin contamination is very serious and that it has never been more important to understand how we can begin to wage war on these toxins. 