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## Mycotoxins and climate change: Future transformation

Mycotoxins and climate change (CC) is a narrative of transition. It concerns three systems: Fungi, mycotoxins and crops, all of which will be in great flux. Fungi involved in mycotoxin production now and in the past will not remain the same hence, studying them as indicators of the future requires care. The fungi will be subjected to additional UV irradiation from increased sunlight and from more or higher concetrations of mutagenic mycotoxins leading to modified or new species with different optima for growth and mycotoxin production. Interactions with the environment such as the effects of temperature, CO2 and moisture, and other organisms will be different. Fungal taxonomy and physiology will have renaissances. Mycotoxins of concern will change and conventional ones may increase in concentration while contaminating unconventional crops. Currently, unimportant mycotoxins, or new ones, may become relevant, meaning that surveys of all possible mycotoxins must increase. Crops will not be able to grow in some regions, or become stressed, leading to greater mycotoxin contamination. However, some crops will grow in new regions with less contamination from the 'parasites lost' phenomenon. The climate for crops in storage can be modified in technologically-advanced countries, helpful for controlling mycotoxin production, although the fungi on the stored crops may be different from now. New technologies, concepts and equipment will be required to ameliorate the changes. Finally, there are more questions than answers with respect to mycotoxins and CC, although the consequences will be profound, unless CC can be greatly reduced.

### Biography

Robert Russell Monteith Paterson has worked on Mycotoxins for decades. He produced the first paper on Mycotoxins and Climate Change (CC) (2010) which is the most cited paper on the subject: The follow up in 2011 is also highly cited. He reported the first case of "Mycotoxins in water and PCR probe used as a mycotoxin metabolic pathway detector". He reviewed "CC effects on mycotoxins in specific crops". CC effects on oil palms were reported in 2015 and 2016. He guest edited a 2015 special issue on Food Mycology involving CC and Mycotoxins in Current Opinion in Food Science.

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