Possible role of *Alternaria* in Kashin-Beck Disease in China

Chasseur C, Mathieu F, Claus W, Drokkar P, He L, Lognay G.

Kashin-Beck disease (KBD) is an endemic, degenerative osteochondropathy estimated to affect some 1-3 million people in rural China. Among several etiological factors, our researches focused on the presence of specific moulds in food. Percentages of contaminated grain were calculated with the direct plating method on DRBC. From 1996 to 2006, our results in the Tibet Autonomous Region (TAR) revealed on stored barley, three moulds significantly correlated with sick families in endemic areas. *Alternaria alternata gr.* was dominant (9.85%). However, in the North of China, in the Heilongjiang province, researches conducted on corn at Harbin University, correlated the genus *Fusarium* with the KBD. In the TAR, our results for *Fusarium* were low (0.93%). To try to explain these differences, three successive missions were carried out in endemic villages along an axis from South-West until the North of China: in Gansu province (2004), Heilongjiang province (2005), and the North of Inner Mongolia (2006). In Gansu province, *A. alternata*, was the dominant species (23.71% on barley, 81.42% on wheat, 27.93% on corn), and *Fusarium* was absent. On corn, *Fusarium* was also present but weakly (3.03%). In Heilongjiang and Inner Mongolia, important corn-producing areas, corn was highly contaminated both with *Fusarium spp*. (12.71/2.80% respectively) and *A. alternata*. (8.40/5.86% respectively). These findings lead us to consider *Alternaria* as one possible etiologic factor of KBD. But it does not exclude *Fusarium spp.* and perhaps other moulds as well. It could imply therefore the existence of a mycotoxin or a family of mycotoxins common to these taxa.