EFFECT OF SULPHUR DIOXIDE ON GERMINATION AND GROWTH OF SPOILAGE FUNGI UNDER DIFFERENT ENVIRONMENTAL CONDITIONS

N. MAGAN
Biotechnology Centre, Cranfield Institute of Technology, Cranfield, Bedford, MK43 0AL, United Kingdom

In vitro studies on the effect of different concentrations of sulphur dioxide (up to 100 ppm) on germination and growth of field and storage fungi was assessed at different temperatures and water availabilities. Both field fungi (*Cladosporium herbarum, Epicoccum nigrum, Aureobasidium pullulans*) and storage fungi (*Eurotium* and *Aspergillus* spp.) germinated over a wide range of SO_2 concentrations at both 15 and 25°C, with some being tolerant of up to 100 ppm. Mycelial growth of these fungi was variously affected by SO_2 concentration. Of field fungi, *Botrytis cinera* was more tolerant than *C. herbarum, E.nigrum* or *A. pullulans*. Of the *Aspergillus* spp., *A. niger* grew better than *A. flavus*, *A. ochraceus* and *A. terreus* with up to 75 ppm SO_2. The effect of SO_2 on growth was also influenced by water availability and pH of the medium. These results are discussed in relation to the potential for using SO_2 for inhibiting spoilage of grain during storage.