

ISES 2022 Symposium abstract

General abstract (max 250 words)

Biological agents risk assessment: how to close the gap between science, policy making and occupational health and safety practice?

Within the Occupational Hygiene community, the risk assessment due to the exposure of biological agents has received little attention compared to chemical agents. However, the impact of the current COVID-19 pandemic highlights the importance of raising awareness and prioritizing the prevention of work-related health effects caused by biological agents. Though, tools for inventorying hazards, performing risk assessment, implementing control measures, and anchoring the results are rare.

With the COVID-19 pandemic in mind, biological agents are often only referred to infectious diseases. However, both infectious and non-infectious microorganisms may cause health effects. Workers in various sectors, such as healthcare and veterinary services, agriculture, waste and waste water management, and laboratories may be exposed through aerosols or contact with infected persons or materials that are contaminated by microorganisms.

Furthermore, sensitizing and toxic effects of biological agents are not considered when they are classified into biological agents risk groups. The sensitizing biological agents include fungi and certain bacteria (including thermophile actinomycetes). Toxic effects can be caused by metabolic products and cellular constituents of biological agents.

Increased focus on biological exposures and health effects is therefore needed in order to improve the risk assessment for biological agents.

The evaluation of workplace bioaerosol exposure risk is complex, considering the great diversity of bioaerosols and their effects, the limitations of the measurement methods available, and the lack of occupational exposure limits. In this symposium we present the concept of a tiered biological agents risk assessment, starting with a qualitative and ending with a quantitative approach.