

Rischio professionale e prevenzione nell'industria biotecnologica: revisione della letteratura

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KEY WORDS

Biotechnology; industrial microbiology; occupational risk; prevention

SUMMARY

«**Occupational risk and prevention in the biotechnology industry: a review**». **Background:** *The biotechnology industry has expanded greatly in the last 20–30 years and has led to a number of applications in different sectors of work, i.e., medical and pharmaceutical, agricultural, chemical, energetic and others. Nowadays hundreds of thousands of workers worldwide are employed in biotechnology plants. Health and safety issues related to such working activities are considered as relevant to workers as well as to the general public. In particular, when compared to traditional biotechnology, modern methods of processing microorganisms have given rise to public concern that they might generate hazards to human beings and to the environment.* **Objectives and methods:** *After summarizing the most important products and fields of application, the paper sets out to detail potential adverse effects for the health of biotechnology workers; in addition, an analysis of the literature highlights the various concepts of primary and secondary prevention.* **Results and conclusion:** *Along with occupational risk factors common to other working activities (i.e. the well-known physical and chemical hazards), the peculiarity of handling microorganisms and/or different biologic systems may induce infections, immunological alterations or non-infective and non-immunologic toxic reactions in the workers involved. The need is emphasized for an accurate risk assessment, careful control by means of the current monitoring strategies and implementation of the confinement measures, taking into account the criteria set by Italian legislation for occupational biological risk. Lastly, attention is focussed on examinations for the medical surveillance of workers at risk.*