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Recent Advances in Application of Fungi and Fungal Metabolites: Environmental
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Chapter 5 - Stress response in fungal system

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Abstract

A complete understanding of the biological mechanisms with respect to primary and secondary metabolite production in yeast and filamentous fungi is of importance both from the point of view of fundamental research and industry. Stress factors affecting the cellular processes in an organism can be induced chemically or exerted by the external environment. These stress factors affect cellular processes by interfering with their optimal activity or by causing cell apoptosis. To cope with the different stress effects, both prokaryotic and eukaryotic cells have a complex network of signaling and reception determining multiplication, the adaptation of growth and gene expression, changes in metabolic activity as well as other cellular changes. In this chapter, we summarize the current knowledge about the different stress factors, including oxidative stress, osmotic stress, nutritional stress, and mechanical stress during secondary metabolism as well as their adaptive responses in yeast and other filamentous fungi.

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