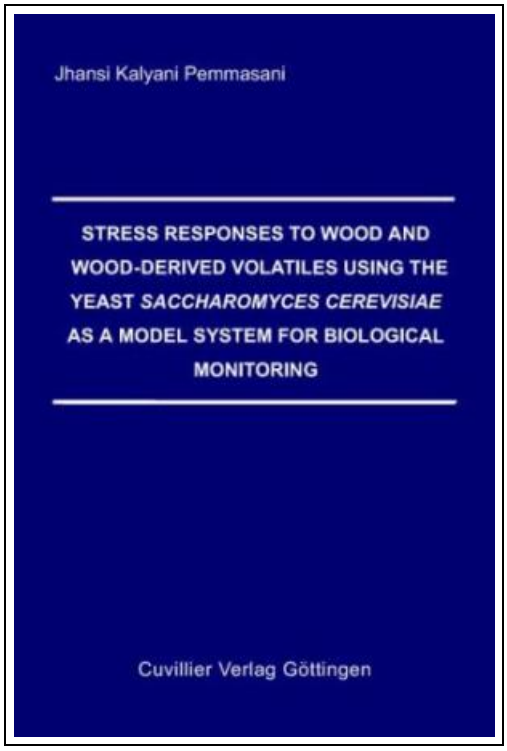
Stress Responses to Wood and Wood-derived Volatiles Using the Yeast Saccharomyces Cervisiae as a Model System for Biological Monitoring



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Reviews

Undoubtedly, this is the greatest job by any author. It is actually filled with wisdom and knowledge I am quickly could get a pleasure of reading a written book.
(Kade Ankunding)

STRESS RESPONSES TO WOOD AND WOOD-DERIVED VOLATILES USING THE YEAST SACCHAROMYCES CERVISIAE AS A MODEL SYSTEM FOR BIOLOGICAL MONITORING

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Cuvillier Verlag Aug 2007, 2007. Taschenbuch. Book Condition: Neu. 209x147x19 mm. Neuware - Safeguarding human and environmental resources against harmful agents requires the development of new monitoring devices. Ideally, a device would be able to detect a pollutant, a toxic chemical, or a warfare agent rapidly at relevant concentrations, and in a cost effective manner. Many conventional chemical and physical techniques tend to be expensive. Recently bioreporters are in focus to meet the above criteria. A whole cell bioreporter can be defined as living cell that responds to changes in its environment by displaying a specific and easily measurable signal. Natural and genetically engineered bioreporters are effective research tools for understanding the perception of signals from the environments by living organisms. A bioreporter can be applied as a first detection line for evaluating the toxicity of a mixture of unknown compound composition. Positive reactions could then initiate more focused analysis to identify individual compounds.Wood and wood-related materials are potential sources of harmful volatile organic compounds. Pollution of air, water and soil at the sites of wood production, i.e. forests, from wood processing as well as from wood in service, especially when undergone chemical treatments, contribute to various risks for environment and human health. Wood is widely used as furnishing and building material. Sophisticated insulation of houses leads during the cold months of the year to an increased accumulation of potentially harmful volatile organic compounds (VOCs) that might result in illness of dwelling people. VOCs are known to cause the 'sick building syndrome¿, sensory irritation, asthma-related symptoms, and in worst cases cancer. These potential risks necessitate the monitoring of emissions from wood and related sources for taking preventive measures. In the present study, a yeast reporter system has been developed to evaluate VOCs from wood and wood-related sources. A Saccharomyces cerevisiae...

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