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CONFERENCE PROGRAM AND ABSTRACTS



Dynamics of Biogeochemical Systems:
Processes and Modeling

The 22nd International Symposium
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Mobility of trace elements in drainage waters from a zinc-lead decommissioned mine (Northeastern Italian Alps)	124
E. Petranich, E. Pavoni, D. Lenaz, S. Covelli, A. Emili and R. Cattelan	
Development of PCR method for detection of <i>Neosartorya fischeri</i> and <i>Aspergillus fumigatus</i> in fresh strawberries and metabolic characterization of selected strains	125
M. Frąc, T. Yaguchi, N. Bilińska-Wielgus, A. Gryta and K. Oszust	
Geomicrobiology of deep subsurface copper mines of Fore-Sudetic Monocline and North-Sudetic Trough - field studies	126
M. Karlicki, K. Maciszewski, A. Bakowska, A. Włodarczyk and R. Matlakowska	
Denitrifying woodchip bioreactor in a low temperature environment: Initial field results	127
A. Nordström and R.B. Herbert Jr.	
Metabolic and genetic profile of selected heat-resistant <i>Byssochlamys</i> strains and its decimal reduction time (D value) at 80°C and 95°C	128
K. Oszust, M. Frąc, N. Bilińska-Wielgus, A. Gryta, A. Pawlik, G. Janusz and M. Piotrowska	
Impact of phosphorus on picocyanobacterial cells surface and biomineralization of CaCO₃	129
C. Paulo, J. Kenney, P. Persson, and M. Dittrich	
Effects of fine bubble aeration on sediment-water interface on distributions of organic phosphorus forms and microbial activity in the sediment from a heavily polluted urban river	130
C. Yang, Y. Xu, Y. Wang and D. Yang	
Microbial weathering of Kupferschiefer black shale organic matter - studies in underground mine	131
A. Włodarczyk, A. Ignatenko, R. Stasiuk and R. Matlakowska	
The impact of agricultural practices on soil microbial community determined by DGGE-PCR fingerprinting	132
A. Wolińska, D. Górniak, U. Zielenkiewicz, M. Błaszczak, A. Banach and Z. Stępniewska	
Microbial weathering of Kupferschiefer black shale organic matter - laboratory studies	133
R. Stasiuk, A. Włodarczyk, A. Skłodowska and R. Matlakowska	

Metabolic and genetic profile of selected heat-resistant *Byssoschlamys* strains and its decimal reduction time (D value) at 80°C and 95°C

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Species of the genus *Byssoschlamys* occur in different environment, including soil and cause the spoilage of agricultural raw materials, fruit and foods due to contact with soil. Some of them produce heat-resistant ascospores and synthesize toxic patulin. Therefore they are dangerous for human health. On the one hand the knowledge of metabolic and genetic profile of fungi can be useful in determination of active compounds for new fungicides [1]. On the other hand metabolic pattern can be useful in the evaluation of fungal potential in biogeochemical application such as participation prediction and assessment in transformations processes occurring in soil environment.

The aim of the study was the evaluation of metabolic pattern and genetic profile of 3 *B. fulva* and 3 *B. nivea* strains. The study included also the assessment of decimal reduction time (D-value) of strains at 80°C and 95°C. Temperatures were chosen as the most frequently used in fruit products processing in pasteurization.

Metabolic profile was evaluated using FF plates (BiologTM). We obtained data on utilization of 95 carbon sources from different groups: carbohydrates, amino acids, amines and amides, polymers, carboxylic acids and miscellaneous substrates. All *Byssoschlamys* strains were genetically characterized using the amplified fragment length polymorphism (AFLP) technique according to Vos et al. [2] with modification made by Pawlik et al. [2]. D values for each strain were evaluated using plate methods with 10 days incubation at 28°C.

The BiologTM FF analysis allowed comparison of functional diversity of the *B. fulva* and *B. nivea* fungal strains. Significant differences have been demonstrated in substrate richness values. *Byssoschlamys* strains included in the analysis displayed an AFLP profile in various similarity level. Higher differences in D-values between studied strains were observed during incubation at 80°C. D-values for all studied strains at 95°C were below 1 minute.

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