

CONFERENCES AND SEMINARS

KONFERENCE A SEMINÁŘE

The 6th European Conference on Fungal Genetics

This conference took place April 6–9, 2002 in Pisa (Palazzo dei Congressi), Italy. More than 500 participants heard 80 lectures in the nine workshops.

Lectures and posters in **Workshop I – Biology and development dealt with:** industrial fungi, for example production of cellulosic and hemicellulosic enzymes (*Trichoderma*); interaction fungus-fungus, and molecular characterization of programmed cell death; ABC transporters which are a family of membrane bound proteins that hydrolyse ATP and use the energy to transport compounds across cell membranes; interactions between plant and fungal pathogen have been utilized for the analysis of differential gene expression to isolate genes specifically induced during pathogenesis (*Botrytis cinerea*).

Workshop II – Biotechnology included: *Chrysosporium lucknowense* as a new fungal host for protein production; analysis of manganese peroxidase in a basidiomycete efficient in biopulping; production of new chymosin in *Aspergillus*.

In the **Workshop III – Genome organization** were presented: another characterization of the *Sclerotinia sclerotiorum* protein kinase SNF1; study of interaction and subcellular localization; the antisense- and ribozyme-techniques as powerful tools; which allow to influence the regulation of gene expression on the mRNA level.

Workshop IV – Genomics and functional genomics touched on: analysis and interpretation of the genomic sequence of the fungus; molecular basis for pathogenicity; some *Phytophthora* genes specifically regulated during in planta growth may play an important role in pathogenesis; genetic mapping and single-cell expression profiling of *Blumeria graminis* genes.

Workshop V – Relationship with plants informed about: osmotin which is a tobacco PR-5 protein that is implicated in plant defence against fungal pathogens; the pathogen-host interaction is controlled by specific resistance genes in the plant and matching fungal avirulence genes according to the gene-for-gene hypothesis; the role of active oxygen radicals (oxygen O₂, superoxide anion radical O₂⁻, hydrogen peroxide radical [•]OH) in interaction of *Claviceps purpurea* and rye; infection structures of *Blumeria graminis*.

Workshop VI – Relationship with plants and other organism demonstrated: isolated fungal-antagonistic bacteria with potential use in biocontrol of filamentous fungi; significant potential of *Trichoderma harzianum* as a biocontrol organism, a fungus known to be highly antagonistic to plant pathogenic fungi; identification of biocontrol genes and their regulatory mechanisms in *Trichoderma*; regulation of NRPS-genes in *Fusarium culmorum* during the pathogenesis on barley; gene knock-out in the lysine biosynthesis pathway of *Pyrenophora teres*.

Workshop VII – Secondary metabolism and secretion reported: molecular analysis of glycolipid production in *Ustilago maydis*; a novel antimicrobial peptide genome from *Pinus sylvestris*.

Workshop VIII – Signaling showed: the early infection processes of phytopathogenic fungi, i.e. the differentiation of the infection structures and the subsequent colonization of the plant tissue are triggered at contact with the host via intercellular signaling cascades; signaling in the interaction *Claviceps purpurea* and rye.

Workshop IX – Taxonomy and population genetics contained: use of genetic markers to identify behaviourally distinct rust forms; molecular; genetic study and epidemiology of *Plasmopara viticola*; taxonomic studies of fungi; genetic variation between *Pyrenophora teres* Drechs. f.sp. *teres* and *P. teres* f.sp. *maculata*; mating types of *Pyrenophora teres* and *P. graminea*, the causal agents of net blotch and leaf stripe of barley; molecular studies of the net and spot forms of *Drechslera teres* on barley; effect of temperature on growth and *in vitro* pathogenicity of European phytopathogenic *Fusarium* species causing head blight disease of wheat.

Knowledge of the genetic structure of plant populations can help plant breeders to predict durability of resistance genes, and assist in choosing the most appropriate strategy for breeding against each pathogen.

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