

1. Record Nr.	UNINA9910437858103321
Titolo	Genomics of soil- and plant-associated fungi // Benjamin A. Horwitz [and three others], editors
Pubbl/distr/stampa	Heidelberg, Germany : , : Springer, , 2013
ISBN	3-642-39339-X
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (xii, 388 pages) : illustrations (some color)
Collana	Soil Biology, , 1613-3382 ; ; 36
Disciplina	570 579.1718 579/.1718
Soggetti	Fungi - Genetics Soil fungi Plant-fungus relationships
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"ISSN: 1613-3382."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Genomic contributions to the study of soil and plant-interacting fungi -- Fungal genomics for energy and environment -- Advancement of functional genomics of a model species of Neurospora and its use for ecological genomics of soil fungi -- Major Plant Pathogens of the Magnaporthaceae Family -- Aspergillus - Genomics of a cosmopolitan fungus -- Trichoderma – genomic aspects of mycoparasitism and biomass degradation -- Fusarium oxysporum: A "moving" view of pathogenicity -- Genomics and spectroscopy provide novel insights into the mechanisms of litter decomposition and nitrogen assimilation by ectomycorrhizal fungi -- Cochliobolus heterostrophus, a Dothideomycete pathogen of maize -- Penicillium chrysogenum - the genomics of antibiotics production -- Rhizopus oryzae - genetic secrets of an emerging human pathogen -- Podospora anserina: from laboratory to biotechnology -- Recent advances on the genomics of litter- and soil-inhabiting Agaricomycetes -- Archaeorhizomycetes, patterns of distribution and abundance in soil -- Methods in Fungal Genetics.
Sommario/riassunto	This volume addresses the similarities and also the differences in the genomes of soil saprophytes, symbionts, and plant pathogens by using

examples of fungal species to illustrate particular principles. It analyzes how the specific interactions with the hosts and the influence of the environment may have shaped genome evolution. The relevance of fungal genetic research and biotechnological applications is shown for areas such as plant pathogenesis, biomass degradation, litter decomposition, nitrogen assimilation, antibiotic production, mycoparasitism, energy, ecology, and also for soil fungi turning to human pathogens. In addition to the model organisms *Neurospora* and *Aspergillus*, the following species are covered providing a view of pathogens and mutualists: *Trichoderma*, *Fusarium oxysporum*, *Cochliobolus heterostrophus*, *Penicillium chrysogenum*, *Rhizopus oryzae*, *Podospora anserina*, and species belonging to Agaricomycetes, Archaeorhizomycetes and Magnaporthaceae. Ecology and potential applications have guided the choice of fungal genes to be studied and it will be fascinating to follow the trends of future sequencing projects.
