
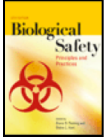








COMPARISONS OF PLANT PATHOGENS CAUSING DISEASE IN HUMANS  
FROM FOUR PUBLICATION DATES: 2006 - 2013





	2006	2006	2007	2013
	 Professor Anne K Vidaver "Cross-Infective Microbes From Plants To Humans"	 <b>Biological Safety Principles and Practices -</b> *Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant - Associated Microorganisms of Significance to Human Health"	 <b>Molecular mechanisms of pathogenicity: how do pathogenic microorganisms develop cross- kingdom host jumps?</b>	 <b>Occupational Health: Lab Acquired Illness, Exposure, Releases, and Consequences</b>
Fungi ✓ <b>Active Ingredient in Microbial BioControl</b>	<b>Alternaria alternata</b> 00:16:47.0 Phaeohyphomycosis, which essentially as far as I can tell, means that you can actually see the hyphae and they may be septate and have color in tissue 00:17:00.1 may even have yeast like forms and they can get into various kinds of tissues as well as on the surface of the body. 00:17:11.6 And when the fungus gets into the brain or bone tissue the prognosis is particularly poor	<b>Alternaria alternata</b> Phaeohyphomycosis; mycotic keratitis; cutaneous and visceral infections; osteomyelitis		<b>Alternaria alternata; Alternaria spp</b> Pathogenicity factors: Secondary metabolites, conidial diffusible factors Characteristics: Toxins Mode of action: Disruption of membrane function, suppression of innate immune response, toxic activity against susceptible cell organelles, disruption of cell physiology, ceramide signaling and cell cycle
Fungi				<b>Alternaria infectoria aka Lewia infectoria</b> Wound and sinus colonization and opportunistic infection
Fungi ✓ <b>Active Ingredient in Microbial BioControl</b>	<b>Aspergillus flavus</b> 00:18:44.7 reported to have generalized infection in people and can be a problem in heart disease as well	<b>Aspergillus flavus</b> Systemic aspergillosis; endocarditis	<b>Aspergillus flavus - Aspergillus fumigatus - Aspergillus spp.</b> Pathogenicity factors: Proteases (subtilisin type); secondary metabolites Characteristics: Toxins Mode of action: Lysis and degradation of diverse tissues (depending on – kingdom affected); necrosis induction, suppression of immune system <b>aka Aspergillus oryzae</b> Opportunistic infection  <u>Opportunistic infection</u>	
Fungi	<b>Aureobasidium pullans</b> It can cause various opportunistic diseases in the lungs and all over the body	<b>Aureobasidium pullans</b> Various opportunistic mycoses; pulmonary mycoses; scleritis; phaeohyphomycosis		
Fungi		<b>Bipolaris hawaiiensis</b> Endophthalmitis; phaeohyphomycotic orbitopathy; sinusitis; granulomatous encephalitis	<b>Bipolaris hawaiiensis aka Drechslera hawaiiensis Cochliobolus hawaiiensis</b> Wound & sinus colonization & opportunistic infection	
Fungi	<b>Bipolaris spicifera</b> 00:20:31.6 problem actually in the arteries has been reported and generalized problem in diseases throughout the body. These are really nice diseases here	<b>Bipolaris spicifera</b> Phaeohyphomycosis; fungal endarteritis; meningitis; peritonitis	<b>Bipolaris spicifera</b> aka Drechslera spicifera, Cochliobolus spicifier	

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Fungi			<b>Blastomyces dermatitidis</b> Opportunistic infection	
Bacteria	<b>Burkholderia cepacia</b> 00:09:02.9 this is a disease partially known for creating a problem in lung tissue and particularly in patients with Cystic Fibrosis; however, there're other diseases that it can be involved with 00:09:17.4 At one time there was a biocontrol agent, actually it was going to be applied for soil-borne fungi I believe, maybe we'll hear more about that later. 00:09:30.3 It had to be taken off the market because of objections through the American Medical Association. 00:09:38.7 This is one of the two cases that I know of where you actually do have evidence, as apposed to conjecture, that genes for plants, that cause disease, and genes that can cause disease in humans are on the same strain. 00:09:58.1 That is not true for all strains of Burkholderia cepacia, but it is true for at least a few that have been so characterized. 00:10:07.4 Very unusual and very challenging, of course if you're ready to talk about a biocontrol agent.	<b>Burkholderia cepacia</b> Bacteremia; pulmonary complex; serious respiratory pathogen in cystic fibrosis patients, cardiac cirrhosis, cellulitis, endophthalmitis	<b>Burkholderia spp. &amp; Burkholderia cepacia</b> Pathogenicity factors: LPS AHL synthase, porin exopolysaccharides Characteristics: Endotoxin amino acid transport, secretion Mode of action: Induces necrosis via TNFR induction especially in lung tissue; amino acid metabolism during parasitic growth, evasion of immune system, tissue invasion and damage  Opportunistic infection	<b>Burkholderia cepacia</b> Bacteremia; pulmonary complex; serious respiratory pathogen in cystic fibrosis patients, cardiac cirrhosis, cellulitis, endophthalmitis
Bacteria	<b>Burkholderia gladioli</b> 00:10:31.1 And also can cause pneumonia and diseases, generalized disease. 00:11:07.2 And then you have the organism in lung tissue here. Not a good thing. It's very difficult to overcome.	<b>Burkholderia gladioli</b> Bacteremia; pneumonia; cervical adenitis		
Fungi		<b>Chaetomium globosum</b> Cerebral phaeohyphomycosis; onychomycosis	<b>Chaetomium globosum</b> Subcutaneous disease, opportunistic systemic infection	

Bacteria  
 ✓  
 Active Ingredient in Microbial BioControl  
 USDA Involved  
 [ see E5 ]





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Fungi			<i>Cladophialophora carrion</i> Subcutaneous disease, wound	
Fungi		<i>Chaetomium globosum</i> Cerebral phaeohyphomycosis; onychomycosis	<i>Chaetomium globosum</i> Subcutaneous disease, opportunistic systemic infection	
Fungi			<i>Cladophialophora carrion</i> Subcutaneous disease, wound	
Fungi		<i>Cladosporium oxysporum</i> Phaeohyphomycosis, pneumonia		
Bacteria	<i>Clostridium butyri</i> 00:07:38.8 apparently has been reported to cause disease in babies.	<i>Clostridium butyri</i> Necrotizing enterocolitis in babies		
Bacteria		<i>Clostridium histolyticum</i> Gas gangrene (myonecrosis); necrotic lesion		
Fungi	<i>Colletotrichum coccodes</i> 00:20:49.0 and this generalized disease of Phaeohyphomycosis in various organs.	<i>Colletotrichum coccodes</i> Phaeohyphomycosis		
Fungi	<i>Colletotrichum gloeosporioides</i> 00:21:19.1 It can get into the nails; and again, some of these pictures again are very unattractive.	<i>Colletotrichum gloeosporioides</i> Keratitis; phaeohyphomycosis	<i>Colletotrichum gloeosporioides</i> aka <i>Glomerella cingulata</i> Wound and opportunistic subcutaneous/eye infection	
Fungi	<i>Coniothyrium fuckelii</i> 00:21:36. It can cause problems in the nails and liver	<i>Coniothyrium fuckelii</i> Mycotic keratitis; liver infection		
Fungi			<i>Corynespora cassiicola</i> Wound and opportunistic infection	
Fungi			<i>Cryptococcus neoformans</i> aka <i>Filobasidiella neoformans</i> Opportunistic infection	





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Bacteria				<b>Curtobacterium flaccumfaciens</b> Septic arthritis
Fungi	<b>Curvularia brachyspora</b> 00:21:45.4 Necrotizing cutaneous infection in the skin and your nails, and not very pleasant.	<b>Curvularia brachyspora</b> Necrotizing cutaneous infection, mycotic keratitis		
Fungi	<b>Curvularia clavata</b> 00:21:59.0 It can get into the sinuses and the brain; also cause skin infections.	<b>Curvularia clavata</b> Invasive sinusitis and cerebritis; human skin infection		
Fungi		<b>Curvularia geniculata</b> Mycotic keratitis; maduromycotic mycetomas in animals	<b>Curvularia geniculata</b> Wound and sinus colonization and opportunistic infection	
Fungi	<b>Curvularia lunata</b> 00:22:13.5 Can get into the brain, can be in skin and the problem in terms of allergies.	<b>Curvularia lunata</b> Cerebral phaeohyphomycosis; systemic cutaneous infection; allergic fungal rhinosinusitis	<b>Curvularia lunata</b> aka <b>Cochliobolus lunatus</b> Wound and sinus colonization and opportunistic infection	
Fungi		<b>Curvularia pullescens</b> Phaeohyphomycosis	<b>Curvularia pullescens</b> aka <b>Pseudocochliobolus pullescens</b> Wound and sinus colonization and opportunistic infection	
Fungi		<b>Curvularia senegalensis</b> Mycotic keratitis		
Fungi	<b>Cylindrocarpon lichenicola</b> 0:22:38.4 Can be a disseminated infection, can cause diseases again in the nails.	<b>Cylindrocarpon lichenicola</b> Disseminated infection; keratomycosis		
Bacteria			<b>Dickeya spp.</b> Pathogenicity factors PATE, PGs, PELs, phosphatidase intimin-like proteins Characteristics: Extracellular proteases Mode of action cell wall degrading enzymes	





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Fungi	<b>Drechslera biseptata</b> 00:22:48.2 Brain Abscesses have been reported; again, not likely to be treatable.	<b>Drechslera biseptata</b> Brain abscess	<b>Drechslera biseptata</b> Wound and sinus colonization	<b>Drechslera biseptata</b> Brain abscess
Bacteria Same Family as E. coli ✓ Active Ingredient in Microbial BioControl	<b>Enterobacter cloacae</b> 00:11:48.9 And for those of you not familiar with bacteria; this is in the same family as e-coli, some of the notorious e-coli. 00:11:58.8 It caused generalized infections; respiratory tract infections and gas gangrene	<b>Enterobacter cloacae</b> Septicemia and respiratory tract infections, gas gangrene		<b>Enterobacter cloacae</b> Septicemia and respiratory tract infections
Bacteria	<b>Enterobacter cloacae</b> 00:11:48.9 And for those of you not familiar with bacteria; this is in the same family as e-coli, some of the notorious e-coli. 00:11:58.8 It caused generalized infections; respiratory tract infections and gas gangrene	<b>Enterobacter cloacae</b> Septicemia and respiratory tract infections, gas gangrene		<b>Enterobacter cloacae</b> Septicemia and respiratory tract infections
Bacteria			<b>Enterococcus faecalis</b> Pathogenicity factors: Hemolysin, gelatinase, AS, hemagglutinin, Lipase Characteristics: Extracellular proteases; aggregation, clumping, cytotoxin Mode of action: Adhesion, tissue degradation, toxin Nosocomial infection	
Bacteria			<b>Erwinia spp.</b> <b>see Pectobacterium spp.</b> Pathogenicity factors: PATE, PGs, PELs, phosphatidase intimin-like proteins Characteristics: Extracellular proteases Mode of action; Cell wall degradation, cellular leakage and death, hemorrhage	
Bacteria		<b>Erwinia persicina</b> Urinary tract infection		<b>Erwinia persicina</b> <b>aka Erwinia nulanidii</b> Urinary tract infection





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Fungi			<b>Exserohilum rostratum</b> aka <b>Drechslera rostrata</b> , <b>Setosphaeria rostrata</b> Wound and sinus colonization and opportunistic infection	
Fungi		<b>Fusarium chlamydosporum</b> Invasive infection		
Fungi		<b>Fusarium dimerum</b> Disseminated infection; endocarditis; eye infection		
Fungi		<b>Fusarium incarnatum</b> Mycotic keratitis		
Fungi	<b>Fusarium moniliforme</b> 00:23:15.9 Well, this can get into disseminated infection in humans, and give you pneumonia and get in to the eyes	<b>Fusarium moniliforme</b> Human fusariosis, local and systemic		
Fungi	<b>Fusarium oxysporum</b> 00:23:43.5 It can give you disseminated infection, pneumonia and eye infection as well	<b>Fusarium oxysporum</b> Onychomycosis, Disseminated fusariosis; skin and nail infection; pneumonia	<b>Fusarium oxysporum</b> Opportunistic infection	<b>Fusarium oxysporum</b> Disseminated fusariosis; skin and nail infection; pneumonia
Fungi		<b>Fusarium proliferatum</b> Disseminated infection in immunosuppressed individuals; suppurative thrombophlebitis	<b>Fusarium proliferatum</b> aka <b>Gibberella sp.</b> Opportunistic infection	<b>Fusarium proliferatum</b> Disseminated infection in immunosuppressed individuals; suppurative thrombophlebitis, Esophageal cancer
Fungi	<b>Fusarium solani</b> 00:24:20.6 You can get invasive systemic infection, and problems with the eyes	<b>Fusarium solani</b> aka <b>Haematonectria</b> haematococca	<b>Fusarium solani</b> aka <b>Haematonectria</b> <b>haematococca</b> Wound and opportunistic infection	<b>Fusarium solani</b> Invasive furiosis; onychomycosis
Fungi			<b>Fusarium verticillioides</b> aka <b>Gibberella moniliformis</b> Opportunistic infection	<b>Fusarium verticillioides</b> Superficial, invasive and disseminated diseases, Esophageal cancer

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Fungi			<b>Fusicoccum dimidiatum</b> aka <b>Scytalidium dimidiatum</b> ; <b>Hendersonula toruloidea</b> ; <b>Natrassia mangiferae</b> Superficial skin disease in healthy individuals; human to human transfer	
Fungi			<b>Histoplasma capsulatum</b> Opportunistic infection	
Fungi			<b>Hortaea werneckii</b> aka <b>Phaeoannellomyces werneckii</b> , <b>Cladosporium werneckii</b> , <b>Exophiala werneckii</b> Superficial skin disease in healthy individuals	
Bacteria	<b>Klebsiella pneumoniae</b> pneumonia; bacteremia; meningitis			
Bacteria		<b>Klebsiella variicola</b> Bacteremia; urinary tract infection		
Fungi		<b>Lasiodiplodia theobromae</b> Subcutaneous abscess; ophthalmic mycosis; onychomycosis; phaeohyphomycosis		<b>Lasiodiplodia theobromae</b> Subcutaneous abscess; ophthalmic mycosis; onychomycosis; phaeohyphomycosis
Fungi	<b>Lecythophora hoffmannii</b> 00:25:01.1 Chronic sinusitis can occur.	<b>Lecythophora hoffmannii</b> Chronic sinusitis		<b>Lecythophora hoffmannii</b> Chronic sinusitis
Bacteria			<b>Legionella pneumophila</b> Opportunistic infection	
Bacteria		<b>Microbacterium</b> Clinical infections		
Fungi	<b>Mucor circinelloides</b> 00:25:42.8 And then you can have a problem in generalized infection and gangrene.	<b>Mucor circinelloides</b> Zygomycosis, gangrenous mucormycosis	<b>Mucor circinelloides</b> Opportunistic infection	





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Bacteria			<b>Mycobacterium avium</b> Opportunistic infection	
Fungi	<b>Paecilomyces varioti</b> 00:25:17.9 You can get pneumonia, problem with the central nervous system, and generalized peritonitis	<b>Paecilomyces varioti</b> Pneumonia; central nervous system infection; peritonitis		
Bacteria	<b>Pantoea agglomerans</b> 00:12:40.3 You've already heard about the possibility of acquired infections; this is one of the organisms that has been reported of possible acquired infections and can also be reported in arthritis. 00:12:53.6 More and more bacteria by the way are being reported to cause of some chronic diseases	<b>Pantoea agglomerans</b> Nosocomial/ opportunistic infections; septic arthritis		
			<b>Pectobacterium spp. aka Erwinia spp.</b> Pathogenicity factors: PATE, PGs, PELs, phosphatidase intimin-like proteins Characteristics: Extracellular proteases Mode of action; cell wall degrading enzymes <sup>7</sup> Cell wall degradation, cellular leakage and death, hemorrhage Opportunistic infection	
Fungi			<b>Penicillium oxalicum</b> Can cause systemic opportunistic infection	
Fungi			<b>Phaeoacremonium alvesii</b> Wound and subcutaneous and joint	
Fungi			<b>Phaeoacremonium krajdienii</b> Subcutaneous disease, wound	





✓  
Active Ingredient in Microbial BioControl







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Fungi			<p><b>Phaeoacremonium parasiticum</b> aka <b>Phialophora parasitica</b>; <b>Togninia parasitica</b> Subcutaneous disease, wound and opportunistic systemic infection</p>	<p><b>Phaeoacremonium parasiticum</b> Phaeohyphomycosis (subcutaneous infections to disseminated disease)</p>
Fungi			<p><b>Phaeoacremonium venezuelense</b> Subcutaneous disease, wound</p>	
Fungi	<p><b>Phoma Eupyrena</b> 00:25:29.1 Lesions of the skin.</p>	<p><b>Phoma Eupyrena</b> Cutaneous lesions</p>		
Fungi			<p><b>Pleurostomophora richardsiae</b> aka <b>Phialophora richardsiae</b> Subcutaneous disease, wound</p>	
Bacteria	<p><b>Pseudomonas aeruginosa</b> 00:13:12.9 It is a very nasty organism if it get's into a burn ward because it is extremely difficult to control. It usually has intrinsic antibiotic resistance to a number of antibiotics; and can cause generalized bacteremia as well. 00:13:33.9 This is also one of the few cases in which a single strain has been found that does have genes that can cause a disease in plants and in humans; and so there have been a few cases where strains have been isolated from humans and then tested in plants and they have been found to be pathogenic. 00:13:52.8 The reverse? of course can not been done directly but can be done through human surrogates such as mice; we believe? that would be appropriate and in many cases then a plant can kill mice, so that is a concern. ..</p>	<p><b>Pseudomonas aeruginosa</b> Burn wound infections and pneumonia<sup>8</sup>; bacteremia; sepsis; meningitis</p>	<p><b>Pseudomonas aeruginosa</b> Pathogenicity factors: Exotoxin A, Characteristics: proteases, phospholipase C, alginate, quorum-sensing, LPS, type III secretion Protease; chaperone; Mode of action: Cytotoxin; inhibition of protein synthesis; cytolytic activity; stimulation of extracellular toxin production and heat stress protection during in vivo growth  Opportunistic infection, cystic fibrosis patients; burns</p>	<p><b>Pseudomonas aeruginosa</b> Burn wound infections and pneumonia<sup>8</sup>; bacteremia; sepsis; meningitis</p>





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Bacteria	<p><b>Pseudomonas aeruginosa</b> continued</p> <p>00:15:04.9 infection in a burn patient here; this is all infected and this gets particularly gruesome if you actually turn on a UV light in a burn ward you can - see these people glow.</p> <p>00:15:20.8 produces a flouresent pigment and it's also characteristic in that regard even on a petri dish.</p> <p>00:15:31.8 In test tubes; you can have a healthy aribidoxis and dying aribidoxus with this particular strain</p>			
Bacteria		<p><b>Pseudomonas fluorescens</b> Bacteremia</p>		
Bacteria		<p><b>Pseudomonas putida</b> Nosocomial infections; meningitis, bacteremia; pneumonia; sepsis</p>		
Fungi			<p><b>Pythium insidiosum</b> aka <b>Hyphomyces destruens</b> kingdom Chromista Wound</p>	
Bacteria	<p><b>Rathayibacter toxicus</b> 00:08:08.2 relationship to problems in people is still debated in terms of unexplained poisonings.</p> <p>00:08:19.3 And this is what it does in cattle who consume grass that many have this yummy disease. The toxins are extremely potent and inaudible death and characterized. Again, not in this country</p>	<p><b>Rathayibacter toxicus</b> aka <b>Clavibacter toxicus</b> Death of livestock associated with consumption of Rathayibacter-infected annual ryegrass;  human disease speculative</p>		
Fungi	<p><b>Rhizopus</b> 00:26:00.1 And you get a generalized infection.</p>	<p><b>Rhizopus</b> Pulmonary zygomycosis</p>	<p><b>Rhizopus</b> Pathogenicity factors: Fumaric acid Rhizopus oryzae Opportunistic infection, Requires high blood iron levels not found in healthy host</p>	<p><b>Rhizopus oryzae opus</b> Pulmonary zygomycosis</p>

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Fungi	<b>Rhizopus stolonifer</b> 00:26:00.1 And you get generalized infections	<b>Rhizopus stolonifer</b> Zygomycosis		
Fungi			<b>Schizophyllum commune</b> Nasal sinus infections	
Bacteria √ Active Ingredient in Microbial Bio-Synthetic		<b>Serratia ficaria</b> Organ infections, endophthalmitis, gall bladder, emphysema, septicemia	<b>Serratia spp</b> Pathogenicity factors: Proteases, hemolysin (Sh1A) Characteristics: Chitinase; lipase cytotoxin Mode of action: Cell wall and membrane degradation, pore-forming toxin; Opportunistic (hospital-acquired) infection, keratitis; Chitinase; lipase cytotoxin	
Bacteria	<b>Serratia marcescens</b> 00:14:27.9 It can be a nasty organism in a number of infections in the respiratory tract, urinary tract, in the eyes, in the heart and so on. 00:15:42.2 The Serratia marcescens here; a nasty infection in the eyes. It has become much more prevalent in recent years for reasons unknown.	<b>Serratia marcescens</b> Bacteremia; endocarditis, Respiratory tract infections; urinary tract infections; conjunctivitis; meningitis; wound infection		<b>Serratia marcescens</b> Respiratory tract infections; urinary tract infections; conjunctivitis; meningitis; wound infection
Fungi			<b>Sporothrix schenckii</b> aka <b>Sporotrichum schenckii</b> Subcutaneous mycosis, wound	
Bacteria Found in German Roaches			<b>Staphylococcus aureus</b> Superficial to systemic infections	
Bacteria	<b>Stenotrophomonas maltophilia</b> 00:14:51.3 ...in any case it can have Bacteremia, generalized infection and respiratory tract infections.	<b>Stenotrophomonas maltophilia</b> Bacteremia and respiratory tract infections		
Bacteria		<b>Streptomyces sp</b> Clinical infections		

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Fungi			Trichoderma longibrachiatum aka Hypocrea sp. Opportunistic infection	
Bacteria		Xanthomonas campestris pv. campestris Bacteremia		







2006 "Microbial Biopesticides and Transgenic Insecticides - Enhancing Regulatory Communication" workshop presenters  
<http://biopesticide.ucr.edu/video/video.html>

"Microbial Biopesticides and Transgenic Insecticides - Enhancing Regulatory Communication"; Steering Committee Members  
<http://biopesticide.ucr.edu/committee/committee.html>

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1. "Cross-infective microbes: from plants to humans" by Anne Vidaver; Enhancing Regulatory Communication Workshop November 2006 VIDEO:  
[http://biopesticide.ucr.edu/video/assets/MOV00F\\_Vidaver.wmv](http://biopesticide.ucr.edu/video/assets/MOV00F_Vidaver.wmv)
2. Biological Safety - Principles and Practices (4th Edition) Table of Contents, AUTHOR/EDITOR Fleming, Diane O.; Hunt, Debra L.; PUBLISHER American Society for Microbiology (ASM) ; Part I. Hazard Identification; View Section, Laboratory, Growth Chamber, and Greenhouse Microbial Safety: Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health by ANNE K. VIDAVER, SUE A. TOLIN, AND PATRICIA L  
**DESCRIPTION**  
 This book continues the format of the previous edition, focusing closely on infectious and toxic biological agents and their identification and control. **This Fourth Edition examines significant developments throughout the field and discusses current regulations including those from the Centers for Disease Control and Prevention and the U.S. Department of Agriculture. The book covers the identification, assessment, and management of biological hazards and outlines the human, animal, and agricultural considerations of a wide range of specific biohazards. Numerous chapters detail practical systems for biohazard control.** A new chapter details critical safety considerations in a maximum containment (BSL 4) laboratory. This book presents the essentials for a comprehensive biological safety program in venues ranging from the basic research laboratory to agricultural, pharmaceutical, educational, and commercial laboratories. This is an indispensable resource for biological safety professionals, members of biohazard review committees, principles investigators, administrators, and students  
[http://app.knovel.com/web/toc.v/cid:kpBSPPE003/viewerType:toc/root\\_slug:biological-safety---principles-and-practices-4th-edition](http://app.knovel.com/web/toc.v/cid:kpBSPPE003/viewerType:toc/root_slug:biological-safety---principles-and-practices-4th-edition)
3. Molecular mechanisms of pathogenicity: how do pathogenic microorganisms develop cross-kingdom host jumps?; Peter Van Baarlen<sup>1</sup>, Alex Van Belkum<sup>2</sup>, Richard C. Summerbell<sup>3</sup>, Pedro W. Crous<sup>3</sup>, Bart P.H.J. Thomma<sup>1</sup>  
 Article first published online: 26 FEB 2007  
<http://web.archive.org/web/20130727122531/http://onlinelibrary.wiley.com/doi/10.1111/j.1574-6976.2007.00065.x/full>  
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COMPARISONS OF PLANT PATHOGENS CAUSING DISEASE IN HUMANS  
FROM FOUR PUBLICATION DATES: 2006 - 2013

<p>See Reference 5. and Appendix A.1 A.2</p>	<p>Bacteria ✓ Identified in Mosquito Midgut</p>	<p>Acinetobacter</p>	 <p>New England Journal of Medicine</p>	<p><b>Health Related</b></p> <ul style="list-style-type: none"> <li>Colonize skin, Wounds, and the Respiratory and Gastrointestinal tracts.</li> </ul>
<p>See Reference 6. and Appendix B</p>	<p>Bacteria ✓ Active Ingredient in Microbial Bio-Control</p>	<p>Bacillus subtilis</p>	 <p>EPA</p>	<p><b>Health Related</b></p> <ul style="list-style-type: none"> <li><i>B. subtilis</i> is not a frank human pathogen, but has on several occasions been isolated from human infections. Infections attributed to <i>B. subtilis</i> include bacteremia, endocarditis, pneumonia, and septicemia.</li> <li>There also have been several reported cases of food poisoning attributed to large numbers of <i>B. subtilis</i> contaminated food.</li> <li><i>B. subtilis</i> does produce the extracellular enzyme subtilisin that has been reported to cause allergic or hypersensitivity reactions in individuals repeatedly exposed to it.</li> <li>In an industrial setting with the use of proper safety precautions, good laboratory practices, and proper protective clothing and eyewear, the potential for infection of workers should be quite low. The only human health concern for workers in the fermentation facility is the potential for allergic reactions with chronic exposure to subtilisin. As previously stated, OSHA has established an exposure limit to subtilisin which must be met in the industrial setting.</li> <li>There are several reports in the literature on the association of <i>B. subtilis</i> with abortions in livestock.</li> </ul>
<p>See Reference 7. and Appendix B</p>			 <p>Occupational Medicine</p>	<p>← See also; <b>Papers that have changed the practice of occupational medicine; Pulmonary disease due to inhalation of derivatives of Bacillus subtilis containing proteolytic enzyme</b></p>
<p>See Reference 8. and Appendix E</p>	<p>Bacteria ✓ Harpin Protein Active Ingredient in Microbial Bio-Control</p>	<p>Escherichia Coli <i>aka E. coli</i></p>	 <p>Center for Disease Control</p>	<p><b>Health Related</b></p> <p><b>What are Escherichia coli?</b></p> <ul style="list-style-type: none"> <li>Some kinds of <i>E. coli</i> can cause diarrhea, while others cause urinary tract infections, respiratory illness and pneumonia, and other illnesses.</li> </ul>
<p>See Reference 9. and Appendix L</p>	<p>Water Mold ✓ Active Ingredient in Microbial Bio-Control</p>	<p>Lagenidium giganteum</p>	 <p>Focus on Fungal Infections 14</p>	<p><b>Health Related</b></p> <ul style="list-style-type: none"> <li>New Human Oomycosis</li> </ul>
<p>See Reference 10. and Appendix M</p>	<p>Fungi ✓ Active Ingredient in Microbial Bio-Control</p>	<p>Muscodor albus</p>	 <p>United States Department of Agriculture</p>	<p><b>Health Related</b></p> <ul style="list-style-type: none"> <li>Significant Human Health Hazard; However, in the process of pursuing EPA registration, Agraquest discovered that volatiles produced by the fungus pose a significant human health hazard. Agraquest is no longer making or handling Muscodor formulations, is no longer pursuing EPA registration, and is discouraging the scientific community from working with this organism because of the toxicity of the active ingredient.</li> </ul>

COMPARISONS OF PLANT PATHOGENS CAUSING DISEASE IN HUMANS  
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[ see APPENDIX